OHSU Health System
Office of Clinical Integration and Evidence-Based Practice
Induction of Labor Guideline Evidence Summary
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Objective:
To create an OHSU Health System guideline for the induction of labor

Inclusion Criteria:
--All patients undergoing induction of labor

Exclusion Criteria:
--non-cephalic presentation of fetus

Definitions:
Induction of labor: The stimulation of uterine contractions before the spontaneous onset of labor
Failed Induction of Labor:

Target Guideline Users:
All clinicians caring for patients presenting for the induction of labor within the OHSU Health System

Guideline Review:

In patients undergoing cervical ripening before the induction of labor:

1. What are the harms and benefits of pharmacological-based methods (e.g. misoprostol, oxytocin)?
2. In pharmacological-based methods for cervical ripening, what is the optimal route and dosing, and combination of?
3. What are the harms and benefits of non-pharmacological (e.g. membrane sweeping, breast stimulation) methods?
4. What are the harms and benefits of mechanical (e.g. artificial rupture of membranes, Foley balloon) methods?
5. What are the harms and benefits of the combination of cervical ripening methods?
6. How should labor be monitored at/during cervical ripening?
7. What are the effects (harms and benefits) when cervical ripening is carried out in different settings (outpatient, inpatient)?

In patients undergoing induction of labor:

8. What are the patient's views and experiences of induction of labor?
9. Which clinical indicators are useful in deciding method of induction?
10. What is the optimal route and dose of nutrition and hydration during induction of labor?
11. What are the effects (harms and benefits) of staffing models during induction of labor?
12. What is the evidence that induced labors are more painful than spontaneous labor?
13. What are the harms and effects of early (at induction) and late (active labor) administration of epidural analgesia?
14. When is a cesarean delivery for failed induction indicated?
15. After cervical ripening is achieved, what is the optimal dose and route of oxytocin?

Quality Measures:

Process:

Outcome:

-Length of time from induction start to delivery
-Overall vaginal delivery (VD) rate
-VD rate in first 24 hrs after admission
-Chorioamnionitis rates
-Length of 2nd stage
-Cesarean delivery (CD) rates
-NICU admission

Induction of Labor
Existing External Guidelines/Pathways/Order Sets

Existing External Guidelines

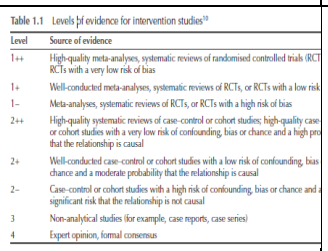
External Guideline	Organization and Author	Last Update
National and International Guidelines		
ACOG Practice Bulletin on the Induction of Labor	The American College of Obstetricians and Gynecologists	2009
Practice Guidelines for Obstetric Anesthesia	American Society of Anesthesiologists Task Force on Obstetric Anesthesia and the Society for Obstetric Anesthesia and Perinatology	2015
Clinical Practice Guideline: Planning for Labor and Vaginal Birth After Cesarean	American Academy of Family Physicians	2014
Clinical Guideline: Induction of Labor	National Institute for Health and Clinical Excellence (NICE) United Kingdom	2013
Polish Gynecological Society recommendations for labor induction	Polish Gynecological Society	2017
Internal Guideline		
OB Cervical Ripening and Induction/ Augmentation of Labor	OHSU	2018

The seven published clinical guidelines were evaluated for this review using the **University of Pennsylvania's Center for Evidence-Based Practice Trustworthy Guideline rating scale.** The scale is based on the Institute of Medicine's "Standards for Developing Trustworthy Clinical Practice Guidelines" (IOM), as well as a review of the AGREE Enterprise and Guidelines International Network domains.

Guideline Issuer and Date	ACOG 2009	ASA 2015	AAFP 2014	NICE 2013	PGS 2017	OHSU 2018
1. Transparency	B	A	A	A	C	C
2. Conflict of interest	NR	A	A	A	NR	NR
3. Development group	NR	A	A	A	C	NR
4. Systematic Review	B	A	A	A	B	B
5. Supporting evidence	B	A	A	A	A	C
6. Recommendations	A	B	A	A	A	C
7. External Review	NR	NR	NR	A	NR	NR
8. Currency and updates	B	A	A	A	A	A

See appendix B for full description of the Trustworthy Guideline grading system.

Guideline Evidence Evaluation Systems

	ACOG 2009	ASA 2015	AFP 2014	NICE 2013	PGS 2017
Evidence Evaluation	I Evidence obtained from at least one properly designed randomized controlled trial. II-1 Evidence obtained from well-designed controlled trials without randomization. II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group. II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence. III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees. Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories: Level A—Recommendations are based on good and consistent scientific evidence. Level B—Recommendations are based on limited or inconsistent scientific evidence. Level C—Recommendations are based primarily on consensus and expert opinion.	Evidence categories refer specifically to the strength and quality of the research design of the studies. Category A evidence represents results obtained from randomized controlled trials (RCTs), and Category B evidence represents observational results obtained from nonrandomized study designs or RCTs without pertinent comparison groups. When available, Category A evidence is given precedence over Category B evidence for any particular outcome. These evidence categories are further divided into evidence levels. Evidence levels refer specifically to the strength and quality of the summarized study findings Opinion-based Evidence. All opinion-based evidence Category A: Expert Opinion. Survey responses from Task Force Category B: Membership Opinion. Survey responses from active ASA members	The GRADE system provides for two levels of strength of recommendations, “Strong” and “Weak”. The GRADE system also provides the opportunity to issue guideline recommendations without a rating when appropriate. Circumstances where these types of recommendations are helpful, but for which no direct evidence is available were designated as “Good Practice Points” (GPP) GRADE recommendations were worded as “The AAFP strongly recommends . . . “ and weak GRADE recommendations were worded as “The AAFP recommends . . .” Good practice points carry the wording of “Clinicians should . . .” Recommendation ratings were decided by consensus among the GDG	 Table 1.1 Levels of evidence for intervention studies[10] Level — Source of evidence 1++ High-quality meta-analyses, systematic reviews of randomised controlled trials (RCT RCTs with a very low risk of bias 1+ Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk 1− Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias 2++ High-quality systematic reviews of case-control or cohort studies; high-quality case- or cohort studies with a very low risk of confounding, bias or chance and a high pro that the relationship is causal 2+ Well-conducted case-control or cohort studies with a low risk of confounding, bias chance and a moderate probability that the relationship is causal 2− Case-control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal 3 Non-analytical studies (for example, case reports, case series) 4 Expert opinion, formal consensus	 Table 3. Strength of recommendations Strength of recommendations Level A — recommendations are based on evidence obtained from randomized, controlled trials Level B — recommendations are based on evidence obtained from controlled trials without randomization Level C — recommendations are based on evidence obtained from cohort or case-control analytic studies and from multiple time series with or without the intervention Level D — recommendations are based on expert committee reports or opinions or clinical experience of respected authorities

	OHSU 2018
Evidence Evaluation	The decision to initiate an induction or augmentation of labor is made by providers based on agreed upon standards. Risks and benefits to both mother and fetus must be considered. Several safe methods exist, and decisions about the choice of methods will include both patient safety and patient preference. The management of cervical ripening and induction is a collaborative process which requires regular team communication.

Evaluating the Quality of Evidence

The GRADE criteria were used to evaluate the quality of evidence presented in research articles reviewed during the development of this guideline. The table below defines how the quality of the evidence is rated and how a strong versus weak recommendation is established. For more detailed information, see Appendix A.

Recommendation	
STRONG	Desirable effects clearly outweigh undesirable effects or vice versa
WEAK	Desirable effects closely balanced with undesirable effects
Quality	**Type of Evidence**
High	Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies
Moderate	Evidence from RCTs with important limitations (e.g., inconsistent results, methodological flaws, indirect evidence, or imprecise results) or unusually strong evidence from unbiased observational studies
Low	Evidence for at least 1 critical outcome from observational studies, from RCTs with serious flaws or indirect evidence
Very Low	Evidence for at least 1 critical outcome from unsystematic clinical observations or very indirect evidence

Guideline Recommendations:

*In **2009, the American College of Obstetricians and Gynecologists** released the Clinical Management Guideline for the Induction of Labor with the following recommendations:*

The following recommendations and conclusions are based on good and consistent scientific evidence (Level A):

- Prostaglandin E analogues are effective for cervical ripening and inducing labor.
- Low- or high-dose oxytocin regimens are appropriate for women in whom induction of labor is indicated.
- Before 28 weeks of gestation, vaginal misoprostol appears to be the most efficient method of labor induction regardless of Bishop Score, although high-dose oxytocin infusion also is an acceptable choice.
- Approximately 25 mcg of misoprostol should be considered as the initial dose for cervical ripening and labor induction. The frequency of administration should not be more than every 3–6 hours.
- Intravaginal PGE2 for induction of labor in women with premature rupture of membranes appears to be safe and effective.
- The use of misoprostol in women with prior cesarean delivery or major uterine surgery has been associated with an increase in uterine rupture and, therefore, should be avoided in the third trimester.
- The Foley catheter is a reasonable and effective alternative for cervical ripening and inducing labor.

The following recommendation is based on evidence that may be limited or inconsistent (Level B):

- Misoprostol (50 mcg every 6 hours) to induce labor may be appropriate in some situations, although higher doses are associated with an increased risk of complications, including uterine tachysystole with FHR decelerations.

American Society of Anesthesiologists Task Force on Obstetric Anesthesia and
The Society for Obstetric Anesthesia and Perinatology

***The American Society of Anesthesiologists** updated in 2015 their Practice Guidelines for Obstetric Anesthesia with the following recommendations:*

- Fetal heart rate patterns should be monitored by a qualified individual before and after administration of neuraxial analgesia for labor.
- Continuous electronic recording of fetal heart rate patterns may not be necessary in every clinical setting and may not be possible during placement of a neuraxial catheter.
- The ASA members agree and the consultants strongly agree that (1) oral intake of moderate amounts of clear liquids may be allowed for uncomplicated laboring patients and (2) the uncomplicated patient undergoing elective surgery (e.g., scheduled cesarean delivery or postpartum tubal ligation) may have moderate amounts of clear liquids up to 2 h before induction of anesthesia.
- The oral intake of moderate amounts of clear liquids may be allowed for uncomplicated laboring patients.
- Laboring patients with additional risk factors for aspiration (e.g., morbid obesity, diabetes mellitus, and difficult airway or patients at increased risk for operative delivery (e.g., nonreassuring fetal heart rate pattern) may have further restrictions of oral intake, determined on a case-by-case basis.

- Provide patients in early labor (i.e., less than 5 cm dilation) the option of neuraxial analgesia when this service is available.
- Offer neuraxial analgesia on an individualized basis regardless of cervical dilation.
- Reassure patients that the use of neuraxial analgesia does not increase the incidence of cesarean delivery.
- Offer neuraxial techniques to patients attempting vaginal birth after previous cesarean delivery.
- For these patients, consider early placement of a neuraxial catheter that can be used later for labor analgesia or for anesthesia in the event of operative delivery.
- Continuous epidural infusion may be used for effective analgesia for labor and delivery.

The American Academy of Family Physicians

The American Academy of Family Physicians *released their 2014 Clinical Practice Guideline: Planning for Labor and Vaginal Birth After Cesarean with the following recommendations:*

- RECOMMENDATION 5: The AAFP recommends that induction of labor after cesarean is appropriate for women who have a medical indication for induction of labor and who are planning a vaginal birth after cesarean. The risk of uterine rupture varies by method of induction. Misoprostol should not be used for cervical preparation or induction of labor after cesarean in the third trimester of pregnancy for women with a prior cesarean birth. (Quality of Evidence: Low to Moderate)

National Institute for Health and Clinical Excellence

The 2013 National Institute for Health and Clinical Excellence *Guideline on Induction of Labor recommended:*

Information and decision making

- Women should be informed that most women will go into labour spontaneously by 42 weeks. At the 38 week antenatal visit, all women should be offered information about the risks associated with pregnancies that last longer than 42 weeks, and their options. The information should cover:
    - membrane sweeping:
        - that membrane sweeping makes spontaneous labour more likely, and so reduces the need for formal induction of labour to prevent prolonged pregnancy
        - what a membrane sweep is
        - that discomfort and vaginal bleeding are possible from the procedure

Preterm pre labour rupture of membranes

- If a woman has preterm pre labour rupture of membranes after 34 weeks, the maternity team should discuss the following factors with her before a decision is made about whether to induce labour, using vaginal prostaglandin E2 (PGE2):

- risks to the woman (for example, sepsis, possible need for caesarean section)
- risks to the baby (for example, sepsis, problems relating to preterm birth)
- local availability of neonatal intensive care facilities.

Vaginal PGE2

- Vaginal prostaglandin E2 (PGE2) is the preferred method of induction of labour, unless there are specific clinical reasons for not using it (in particular, the risk of uterine hyperstimulation). It should be administered as a gel, tablet or controlled release pessary. Costs may vary over time and trusts/units should take this into consideration when prescribing PGE2. For doses, refer to the SPCs. The recommended regimens are:
  - one cycle of vaginal PGE2 tablets or gel: one dose, followed by a second dose after 6 hours if labour is not established (up to a maximum of two doses)
  - one cycle of vaginal PGE2 controlled release pessary: one dose over 24 hours.
- When offering PGE2 for induction of labour, healthcare professionals should inform women about the associated risks of uterine hyperstimulation.

Failed induction

- If induction fails, healthcare professionals should discuss this with the woman and provide support. The woman's condition and the pregnancy in general should be fully reassessed, and fetal wellbeing should be assessed using electronic fetal monitoring.
- If induction fails, the subsequent management options include:
  - a further attempt to induce labour (the timing should depend on the clinical situation and the woman's wishes)

Recommended methods of induction of labour

- Membrane sweeping
  - Prior to formal induction of labour, women should be offered a vaginal examination for membrane sweeping.
  - At the 40 and 41 week antenatal visits, nulliparous women should be offered a vaginal examination for membrane sweeping.
  - At the 41 week antenatal visit, parous women should be offered a vaginal examination for membrane sweeping.
  - When a vaginal examination is carried out to assess the cervix, the opportunity should be taken to offer the woman a membrane sweep.
  - Additional membrane sweeping may be offered if labour does not start spontaneously.
- Pharmacological methods
  - Vaginal prostaglandin E2 (PGE2) is the preferred method of induction of labour, unless there are specific clinical reasons for not using it (in particular, the risk of uterine hyperstimulation). It should be administered as a gel, tablet or controlled release pessary. Costs may vary over time and trusts/units should take this into consideration when prescribing PGE2. For doses, refer to the SPCs. The recommended regimens are:
    - one cycle of vaginal PGE2 tablets or gel: one dose, followed by a second dose after 6 hours if labour is not established (up to a maximum of two doses)
    - one cycle of vaginal PGE2 controlled release pessary: one dose over 24 hours
- When offering PGE2 for induction of labour, healthcare professionals should inform women about the associated risks of uterine hyperstimulation.
- Misoprostol should only be offered as a method of induction of labour to women who have intrauterine fetal death or in the context of a clinical trial.
- Mifepristone should only be offered as a method of induction of labour to women who have intrauterine fetal death.

Methods that are not recommended for induction of labour

Pharmacological methods

- The following should not be used for induction of labour:
  - oral PGE2
  - intravenous PGE2
  - extra-amniotic PGE2
  - intracervical PGE2
  - intravenous oxytocin alone
  - hyaluronidase
  - corticosteroids
  - estrogen
  - vaginal nitric oxide donors.

Non-pharmacological methods

- Healthcare professionals should inform women that the available evidence does not support the following methods for induction of labour:
  - herbal supplements
  - acupuncture
  - homeopathy
  - castor oil
  - hot baths
  - enemas
  - sexual intercourse

Surgical methods

- Amniotomy, alone or with oxytocin, should not be used as a primary method of induction of labour unless there are specific clinical reasons for not using vaginal PGE2, in particular the risk of uterine hyperstimulation.

Mechanical methods

- Mechanical procedures (balloon catheters and laminaria tents) should not be used routinely for induction of labour.

Setting and timing for induction of labour

- In the outpatient setting, induction of labour should only be carried out if safety and support procedures are in place.
- The practice of induction of labour in an outpatient setting should be audited continuously

- In the inpatient setting, induction of labour using vaginal PGE2 should be carried out in the morning because of higher maternal satisfaction.

Monitoring and pain relief for induction of labour

- Wherever induction of labour is carried out, facilities should be available for continuous electronic fetal heart rate and uterine contraction monitoring
- Before induction of labour is carried out, Bishop score should be assessed and recorded, and a normal fetal heart rate pattern should be confirmed using electronic fetal monitoring
- After administration of vaginal PGE2, when contractions begin, fetal wellbeing should be assessed with continuous electronic fetal monitoring. Once the cardiotocogram is confirmed as normal, intermittent auscultation should be used unless there are clear indications for continuous electronic fetal monitoring
- Bishop score should be reassessed 6 hours after vaginal PGE2 tablet or gel insertion, or 24 hours after vaginal PGE2 controlled release pessary insertion, to monitor progress
- If a woman returns home after insertion of vaginal PGE2 tablet or gel, she should be asked to contact her obstetrician/midwife:
    - when contractions begin, or
    - if she has had no contractions after 6 hours.

Pain relief

- Women being offered induction of labour should be informed that induced labour is likely to be more painful than spontaneous labour.
- Women should be informed of the availability of pain relief options in different settings
- During induction of labour, healthcare professionals should provide women with the pain relief appropriate for them and their pain. This can range from simple analgesics to epidural analgesia.
- Birth attendants (carers and healthcare professionals) should offer women support and analgesia as required, and should encourage women to use their own coping strategies for pain relief.
- The opportunity to labour in water is recommended for pain relief.

Failed induction

- If induction fails, healthcare professionals should discuss this with the woman and provide support. The woman's condition and the pregnancy in general should be fully reassessed, and fetal wellbeing should be assessed using electronic fetal monitoring.
- If induction fails, decisions about further management should be made in accordance with the woman's wishes, and should take into account the clinical circumstances.
- If induction fails, the subsequent management options include:
    - a further attempt to induce labour (the timing should depend on the clinical situation and the woman's wishes)

Care pathway

All stages
Provide information and support, invite questions, and allow women time for discussion with partners and for making decisions. See also key priorities on page 3 and guidelines on intrapartum and antenatal care[3,4].

Before induction

Uncomplicated pregnancy
- Give women every opportunity to go into labour spontaneously.
- Offer membrane sweeps:
  - to nulliparous women at 40 week antenatal visit
  - to all women at 41 week antenatal visit
  - if assessing the cervix.
- Offer additional membrane sweeps if labour does not start spontaneously.
- Offer induction between 41 and 42 weeks, depending on woman's preferences.

Discuss pain relief (see box 1).

Induction may be offered if there is:
- Breech presentation: only if caesarean declined, and external cephalic version failed, declined or contraindicated. Fully discuss risks.
- Previous caesarean section: offer induction, caesarean section or expectant management on individual basis. Explain increased risk of caesarean section and uterine rupture with induction.
- Intrauterine fetal death (see page 5).
- Maternal request alone: only in exceptional circumstances, at or after 40 weeks.

Discuss pain relief (see box 1).

Induction may be offered if there is prelabour rupture of membranes:
- Before 34 weeks: only if there are other obstetric indications.
- Between 34 and 37 weeks: discuss with woman the risks to her and her baby, and neonatal intensive care facilities available.
- At or over 37 weeks: choice of induction or expectant management (induction appropriate after 24 hours).

Discuss pain relief (see box 1).

Avoid induction:
- if there is severe fetal growth restriction with confirmed fetal compromise.
- if there is suspected fetal macrosomia with no other indication.
- to avoid unattended birth if there is a history of precipitate labour.

Induction declined
- Respect the woman's decision and discuss further care with her.
- From 42 weeks, at least twice-weekly cardiotocography and ultrasound estimation of maximum amniotic pool depth.

Induction chosen
Offer membrane sweep (check for low-lying placental site first).

If labour does not start

Induction chosen

Assess Bishop score and confirm normal fetal heart rate pattern with electronic fetal monitoring.

Abnormal fetal heart rate → Refer to 'Intrapartum care'[3].

Normal fetal heart rate

Formal induction with vaginal PGE_2[6]:
- Inform women about the risks of uterine hyperstimulation.
- Induce in the morning.
- Check for low-lying placental site before induction.
- Offer vaginal PGE_2 as tablet, gel or controlled-release pessary:
  - tablet or gel: one dose, followed by a second dose after 6 hours if labour does not start (maximum two doses)
  - pessary: one dose over 24 hours.
- Reassess Bishop score 6 hours after each tablet or gel, or 24 hours after controlled-release pessary.
- If woman goes home after tablet or gel, ask her to contact her obstetrician/midwife:
  - when contractions begin
  - if she has had no contractions after 6 hours.

If specific clinical reasons not to use PGE_2 → **Amniotomy**
- Do not use amniotomy, alone or with oxytocin, as a primary method of induction unless there are specific reasons for not using PGE_2.
- Avoid if baby's head is high.
- To avoid cord prolapse:
  - assess engagement of presenting part before induction
  - palpate for umbilical cord presentation during preliminary vaginal examination (avoid dislodging baby's head).

If no progress

Contractions begin

- Confirm fetal wellbeing with continuous electronic fetal monitoring.
- Intermittent auscultation should then be used unless there are indications for continuous monitoring[2].
- If fetal heart rate is abnormal, refer to 'Intrapartum care'[3].
- When labour is established, monitor according to 'Intrapartum care'[3].
- For pain relief, see box 1.

Failed induction
- Reassess woman's condition and pregnancy in general.
- Assess fetal wellbeing with electronic fetal monitoring.
- Provide support, and make decisions in accordance with woman's wishes and clinical circumstances.
- Management options include:
  - a further attempt to induce labour (timing to depend on clinical situation and woman's wishes)
  - caesarean section[5].

Box 1: Pain relief
- Explain:
  - that induced labour is likely to be more painful than spontaneous labour
  - different pain relief options in different settings.
- Provide support and pain relief appropriate for the woman and her pain, as required[3].
- Encourage women to use their own coping strategies.
- Labouring in water is recommended.

Complications
- Consider tocolysis for uterine hyperstimulation.
- If uterine rupture is suspected, deliver baby by caesarean section[5].

[3] See 'Intrapartum care' (NICE clinical guideline 55).
[4] See 'Antenatal care' (NICE clinical guideline 62).
[5] See 'Caesarean section' (NICE clinical guideline 13).
[6] Vaginal PGE_2 has been used in UK practice for many years in women with ruptured membranes and history of previous caesarean section. However, the SPCs (July 2008) advise that:
- vaginal PGE_2 is either not recommended or should be used with caution in women with ruptured membranes, depending on the preparation (gel, tablet or pessary). Healthcare professionals should refer to the individual SPCs.
- vaginal PGE_2 is not recommended in women with a history of previous caesarean section.

Informed consent on the use of vaginal PGE_2 should be obtained and documented in these situations.

Polish Gynecological Society

The 2017 Polish Gynecological Society recommendations for labor induction include:

- The Bishop score remains the most commonly recommended method for assessing the maturity of the cervix.
- The authors have concluded that the effectiveness of mechanical methods is comparable to that of prostaglandins in inducing labor within 24 hours at a comparable risk of caesarean section and a lower risk of hyperstimulation of the uterus
- Two prostaglandins are accepted for use in pre-induction of labor with a live fetus, as well as in abortion/delivery of a stillbirth fetus and non-viable fetus in Poland. These are PGE2 (dinoprostone — vaginal gel [0.5 mg/3 g] and a vaginal delivery system [0.005 g/12 h]) and PGE1 (misoprostol — a vaginal delivery system comprising 200 μg of misoprostol with a release rate of 7 μg/h).
- When choosing prostaglandin for labor pre-induction, one should remember that these two molecules differ significantly in terms of pharmacokinetics: misoprostol has a much stronger uterotonic effect than dinoprostone and is therefore more effective in less mature cervix, e.g. in primiparous women.
- The indication for oxytocin use is the need for labor induction in mature cervix.
- Membrane stripping is highly efficient and helps avoid labor induction using conventional pharmacological methods and amniotomy. When used as an adjunct to other labor induction techniques, this method allows for decreasing doses of oxytocin and increasing the percentage of vaginal deliveries
- When making a decision to perform amniotomy, one should consider the risks associated with the procedure, such as umbilical cord prolapse, acute fetal hypoxia, fetal damage, abnormal engagement of the head, as well as the risk of intrauterine infection in the case of prolonged rupture of membranes.
- Misoprostol must not be used in third-trimester intrauterine fetal death after caesarean section due to a risk of uterine rupture (1.2–10%).
- Using a Foley catheter is a useful method of inducing labor in intrauterine fetal death at > 28 weeks of pregnancy. If administration of oxytocin is necessary, it can be infused intravenously 4 hours after the last dose of misoprostol.

Guideline References:

1. Induction of labor. ACOG Practice Bulletin No. 107. American College of Obstetricians and Gynecologists. Obstet Gynecol 2009; 114:386–97.
2. Practice guidelines for obstetric anesthesia: An updated report by the American Society of Anesthesiologists Task Force on Obstetric Anesthesia. Anesthesiology 2016; 124:270–300.
3. King, Valerie J et al. "Clinical practice guideline executive summary: Labor after cesarean/planned vaginal birth after cesarean" Annals of family medicine vol. 13,1(2015): 80-1.
4. National Institute for Health and Care Excellence (2013). "Induction of labour." Accessed on November 29th, 2018 at https://www.nice.org.uk/guidance/CG70
5. Roberts, K. B. (2011). "Urinary tract infection: clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months." Pediatrics **128**(3): 595-610.
6. Bomba-Opoń et al. (2017). "Polish Gynecological Society recommendations for labor induction." Ginekologia Polska **88**(4): 224–234.

Internal Guideline:

Mechanical Devices Used for Cervical Ripening or Augmentation with Amniotomy*: Only performed/placed by LIP			
	Amniotomy	**Foley Balloon**	**Cook Balloon**
Supplies	Amnihook, fingercot, Consider FSE if concern for high station	18F-26F Foley Catheter with 30-50mL bulb Normal Saline/Sterile Water (60-80mL) Speculum, Bozeman and Ring forceps	Cervical Ripening Balloon Normal saline (max 80 ml per balloon)
Presence of Uterine Scar	Yes	Yes	No
Contraindications		Caution with low lying placenta	Caution with low lying placenta
Oxytocin use	**Yes**	**Yes**	**Yes**
Misoprostol use (Cytotec)	**Yes**	**Yes**	**No**
Dinoprostone use (Cervidil)	**No**	**No**	**No**
Ruptured Membranes	N/A	Yes	No
Monitoring	FHR must be closely monitored prior to and immediately following procedure (risk of umbilical cord prolapse)	EFM as ordered or continuous for at least 30 min post placement	EFM as ordered or continuous for at least 30 min post placement and then between hourly and q 4h depending on maternal symptoms and fetal response.
Removal	N/A	Remove: in 24 hours OR When the patient is in active labor If there is heavy vaginal bleeding	Remove: After 12 hours OR When the patient is in active labor If there is heavy vaginal bleeding

Pharmacologic Agents Used for Cervical Ripening and Labor Induction and Augmentation: Guidelines for Use and Monitoring*			
	Pitocin (oxytocin)	**Cervidil (dinoprostone)**	**Cytotec (misoprostol)**
Storage and Preparation	Room temperature storage. Standardized IV admixture is 30 units of oxytocin to 500 ml of IV Normal Saline resulting in a 1:1 solution (1 mU/min = 1 ml/hr)	Keep frozen or refrigerated until immediately before use. No warming required.	100 mcg tablet is not scored; dose should be prepared by hospital pharmacy.
Titration	See Clinical Consensus Guideline for Oxytocin Induction and Augmentation	N/A	N/A
Contraindications	Caution if patient has prolonged QT syndrome	Multiparas with 6 or more previous term pregnancies. **Uterine scar**	Before dosing- **no more than 3 painful contractions in 10 minutes.** **Uterine scar**
Cook Balloon Use	**Yes**	**No**	**No**
Foley Balloon Use	**Yes**	**No**	**Yes**
Ruptured Membranes	Yes	Caution with ROM. Monitor closely or remove after SROM. Remove before AROM.	Caution with ROM- consider oral route.
Monitoring	Uterine activity and FHR monitored continuously and for at least 15 minutes after stopping infusion.	Uterine activity and FHR monitored continuously while in place and for at least 15 minutes after removal.	Uterine activity and FHR monitored continuously **for at least 3 hours after administration**
Activity	Ambulation is an option if continuous EFM telemetry is available.	Remain in bed for 2 hours following vaginal administration. Ambulation is an option if continuous EFM telemetry is available.	Ambulation is an option if continuous EFM telemetry is available.
Oxytocin Use		Oxytocin should be **delayed for 30 to 60 minutes** after removal of insert.	Oxytocin should be **delayed until at least 4 hours** after last dose.

Health System Guideline References:

1. OHSU (2017). “OB Cervical Ripening and Induction/ Augmentation of Labor”, 05.08.18 update.

Primary Literature:

In patients undergoing cervical ripening before the induction of labor:

Question 1: What are the harms and benefits of pharmacological-based methods (e.g. misoprostol, oxytocin)?

Treatments NOT Included in Evidence Summary:
-hyaluronidase
-corticosteroids
-estrogen
-vaginal nitric oxide donors

Oxytocin versus Oral Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus Oral Misoprostol
Outcome: Delivery within 24 h (efficacy)

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) **N/A** ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Wing Da, F., et al. Year Published: 2004 Location: US Journal: *American journal of obstetrics and gynecology*	To compare orally administered misoprostol with intravenous oxytocin infusion for labor induction in women with favorable cervical examinations (defined as a Bishop score of 6 or more).	**Size:** 198 women **Inclusion Criteria**: (1) singleton gestation, (2) Bishop score of 6 or more, (3) uterine contractions of 12 or less per hour, (4) cephalic presentation, and (5) reactive fetal heart rate (FHR) pattern. **Exclusion Criteria:** (I) estimated fetal weight (EFW) of more than 4.5 kg or less than 2.0 kg; (2) ruptured membranes more than 24 hours; (3) placenta previa or unexplained vaginal bleeding; (4) active genital herpes infection; (5) previous cesarean delivery or other uterine surgery; (6) evidence of chorioamnionitis; (7) significant maternal medical complication; (8) parity of 6 or more; and (9) maternal age of less than 18 years	**Type:** RCT **Intervention**: Women with indications for labor induction and favorable cervical examinations were assigned randomly to receive oral misoprostol or oxytocin induction. Misoprostol, 100 mg, was administered every 4 hours up to 6 doses, or intravenous oxytocin was administered by standardized protocol	**Results:** There was no statistically significant difference between the oxytocin and misoprostol group for Delivery within 12 h and 24h.	**Study Limitations:** ☐ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Wing Da. (2004)"A comparison of orally administered misoprostol to intravenous oxytocin for labor induction in women with favorable cervical examinations." American journal of obstetrics and gynecology 190(6): 1689-1694; discussion 1694-1686.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus Oral Misoprostol
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) **N/A** ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Wing Da, F., et al. Year Published: 2004 Location: US Journal: *American journal of obstetrics and gynecology*	To compare orally administered misoprostol with intravenous oxytocin infusion for labor induction in women with favorable cervical examinations (defined as a Bishop score of 6 or more).	**Size:** 198 women **Inclusion Criteria**: (1) singleton gestation, (2) Bishop score of 6 or more, (3) uterine contractions of 12 or less per hour, (4) cephalic presentation, and (5) reactive fetal heart rate (FHR) pattern. **Exclusion Criteria:** (I) estimated fetal weight (EFW) of more than 4.5 kg or less than 2.0 kg; (2) ruptured membranes more than 24 hours; (3) placenta previa or unexplained vaginal bleeding; (4) active genital herpes infection; (5) previous cesarean delivery or other uterine surgery; (6) evidence of chorioamnionitis; (7) significant maternal medical complication; (8) parity of 6 or more; and (9) maternal age of less than 18 years	**Type:** RCT **Intervention**: Women with indications for labor induction and favorable cervical examinations were assigned randomly to receive oral misoprostol or oxytocin induction. Misoprostol, 100 mg, was administered every 4 hours up to 6 doses, or intravenous oxytocin was administered by standardized protocol	**Results:** The route of delivery did not differ significantly between the 2 treatment groups. Nine (8.2%) of the misoprostol-treated subjects underwent cesarean delivery versus 8 (9.1 %) of the oxytocin-treated subjects (P = .82, RR 0.90, 95% CI 0.36-2.24).	**Study Limitations:** ☐ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Wing Da. (2004)"A comparison of orally administered misoprostol to intravenous oxytocin for labor induction in women with favorable cervical examinations." American journal of obstetrics and gynecology 190(6): 1689-1694; discussion 1694-1686.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus Oral Misoprostol
Outcome: Adverse Neonatal Events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*
☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Wing Da, F., et al. Year Published: 2004 Location: US Journal: *American journal of obstetrics and gynecology*	To compare orally administered misoprostol with intravenous oxytocin infusion for labor induction in women with favorable cervical examinations (defined as a Bishop score of 6 or more).	**Size:** 198 women **Inclusion Criteria**: (1) singleton gestation, (2) Bishop score of 6 or more, (3) uterine contractions of 12 or less per hour, (4) cephalic presentation, and (5) reactive fetal heart rate (FHR) pattern. **Exclusion Criteria:** (I) estimated fetal weight (EFW) of more than 4.5 kg or less than 2.0 kg; (2) ruptured membranes more than 24 hours; (3) placenta previa or unexplained vaginal bleeding; (4) active genital herpes infection; (5) previous cesarean	**Type:** RCT **Intervention**: Women with indications for labor induction and favorable cervical examinations were assigned randomly to receive oral misoprostol or oxytocin induction. Misoprostol, 100 mg, was administered every 4 hours up to 6 doses, or intravenous oxytocin was administered by standardized protocol	**Results:** Abnormal FHR were found in 18 (16.4%) misoprostol-treated subjects and 11 (12.5%) of oxytocin treated subjects (P = .45, RR 1.30, 95% CI 0.65-2.63). Almost all the abnormal FRH patterns were characterized as moderate-to-severe variable decelerations. Not a significant difference in chorioamnionitis between the 2 groups, occurring in 10/110 (9.1 %) of misoprostol-treated women and 7 /88 (8.0%) of oxytocin-treated women (P = .78).	**Study Limitations:** ☐ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		delivery or other uterine surgery; (6) evidence of chorioamnionitis; (7) significant maternal medical complication; (8) parity of 6 or more; and (9) maternal age of less than 18 years			

References:
Wing Da. (2004)"A comparison of orally administered misoprostol to intravenous oxytocin for labor induction in women with favorable cervical examinations." American journal of obstetrics and gynecology 190(6): 1689-1694; discussion 1694-1686.

Vaginal Misoprostol versus Vaginal Dinoprostone

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus Vaginal Dinoprostone
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 8 trials (771 vaginal misoprostol, 1322 vaginal dinopsotone)	**Type:** Systematic Review	**Results:** Vaginal misoprostol showed a significant difference in	**Study Limitations:** ☒ None ***Systematic Review***

Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*		**Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	reducing the number of vaginal deliveries not achieved in 24 hours, compared with vaginal dinoprostone (RR 0.62, 95% CI 0.49-0.79) P=0.88 I^2=62%	☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 22 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Failure to achieve vaginal delivery within 24 hours (22 trials, average RR 0.77, 95% CI 0.66 to 0.89) was reduced overall by misoprostol.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Austin, S. C., et al. Year Published: 2010 Location: University of Florida Journal: *American Journal of Obstetrics & Gynecology*	The purpose of this study was to review randomized trials that compared the efficacy of the dinoprostone 10-mg controlled-release vaginal insert with that of vaginally administered misoprostol	**Size:** 11 studies, 1572 women **Inclusion Criteria:** Clinical trials comparing 10-mg dinoprostone vaginal inserts with misoprostol for cervical ripening and labor induction	**Type:** Systematic Review **Intervention**: Proportion of women who delivered vaginally within 12 and 24 hours of drug application, the need for oxytocin augmentation, the incidence of hyperstimulation,	**Results:** Among women who were assigned randomly to dinoprostone, the likelihood of vaginal delivery within 12 hours was lower (RR, 0.65; 95% CI, 0.44- 0.96). The likelihood of vaginal delivery within 24 hours was also	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

	tablets in cervical ripening and labor induction.		and the proportion of women who delivered by cesarean section.	lower (RR, 0.83; 95% CI, 0.74-0.94)	☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.
Austin, S. C., et al. (2010). "Labor induction with intravaginal misoprostol compared with the dinoprostone vaginal insert: a systematic review and metaanalysis." American Journal of Obstetrics & Gynecology 202(6): 624.e621-629.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus Vaginal Dinoprostone
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 16 trials (930 vaginal misoprostol, 1108 vaginal dinopsotone)	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol,	**Results:** Vaginal misoprostol showed no significant difference in reducing the number of cesarean deliveries, compared with vaginal dinoprostone	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

		Inclusion Criteria: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Published RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	(RR 0.87, 95% CI 0.76-1.00) P=0.54, I^2= 1%	☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 34 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Caesarean sections were variable between trials, with a trend to be reduced with vaginal misoprostol (RR 0.95, 95%CI 0.87-1.03)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Austin, S. C., et al. Year Published: 2010 Location: University of Florida Journal: *American Journal of Obstetrics & Gynecology*	The purpose of this study was to review randomized trials that compared the efficacy of the dinoprostone 10-mg controlled-release vaginal insert with that of vaginally administered misoprostol tablets in cervical ripening and labor induction.	**Size:** 11 studies, 1572 women **Inclusion Criteria:** Clinical trials comparing 10-mg dinoprostone vaginal inserts with misoprostol for cervical ripening and labor induction	**Type:** Systematic Review **Intervention**: Proportion of women who delivered vaginally within 12 and 24 hours of drug application, the need for oxytocin augmentation, the incidence of hyperstimulation, and the proportion of women	**Results:** No statistical differences between the 2 groups were noted with respect to rates of cesarean delivery (RR, 1.01; 95% CI, 0.85-1.19)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			who delivered by cesarean section.		

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus Vaginal Dinoprostone
Outcome: Uterine hyper stimulation with Fetal Heart Rate Changes (infant morbidity)

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 14 trials (3172 vaginal misoprostol, 3020vaginal dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within	**Results:** Vaginal dinoprostone revealed a reduction in uterine hyperstimulation with FHR changes compared to vaginal misoprostol (RR 0.57, 95% CI 0.36-0.88) P=0.42 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Published RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as excessive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Austin, S. C., et al. Year Published: 2010 Location: University of Florida Journal: *American Journal of Obstetrics & Gynecology*	The purpose of this study was to review randomized trials that compared the efficacy of the dinoprostone 10-mg controlled-release vaginal insert with that of vaginally administered misoprostol tablets in cervical ripening and labor induction.	**Size:** 11 studies, 1572 women **Inclusion Criteria:** Clinical trials comparing 10-mg dinoprostone vaginal inserts with misoprostol for cervical ripening and labor induction	**Type:** Systematic Review **Intervention**: Proportion of women who delivered vaginally within 12 and 24 hours of drug application, the need for oxytocin augmentation, the incidence of hyperstimulation, and the proportion of women who delivered by cesarean section.	**Results:** No statistical differences between the 2 groups were noted with respect to rates of hyperstimulation (RR, 0.86; 95% CI,0.59-1.25)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 37 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Uterine hyperstimulation with FHR changes was variable between trials, but overall tended to be more common with misoprostol (average RR 1.43, 95% CI 0.97 to 2.09)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews (10): CD000941.

Austin, S. C., et al. (2010). "Labor induction with intravaginal misoprostol compared with the dinoprostone vaginal insert: a systematic review and meta-analysis." American Journal of Obstetrics & Gynecology 202(6): 624.e621-629.

Vaginal Misoprostol versus Intracervical Dinoprostone

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus Intracervical dinoprostone
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 8 trials (2557 vaginal misoprostol, 1541 intracervical dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes,	**Results:** Vaginal misoprostol showed a significant difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared with intracervical dinoprostone (RR 0.43, 95% CI 0.34-0.54) P=0.93 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 13 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Failure to achieve vaginal delivery within 24 hours was consistently reduced with misoprostol (RR 0.63, 95% CI 0.56 to 0.71).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus intracervical Dinoprostone
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 21 trials (4144 vaginal misoprostol, 2961 intracervical dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Vaginal misoprostol showed no significant difference in reducing the number of cesarean deliveries, compared with intracervical dinoprostone (RR 0.82, 95% CI 0.70-0.95) P=0.38, I^2= 12%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 27 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Caesarean sections were variable between trials, with no significant differences overall. 0.97 [0.84, 1.11]	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus Intracervical Dinoprostone
Outcome: Uterine hyper stimulation with Fetal Heart Rate Changes (infant morbidity)

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 18 trials (3172 vaginal misoprostol, 1338 intracervical dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** intracervical dinoprostone revealed a reduction in uterine hyperstimulation with FHR changes compared to vaginal misoprostol (RR 0.26, 95% CI 0.15-0.44) P=0.97 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 20 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Uterine hyperstimulation with associated FHR changes was variable between trials, but all were consistent with the pooled result showing an increase with misoprostol (RR 2.32, 95%CI 1.64 to 3.28).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

Oral Misoprostol versus Vaginal Dinoprostone

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Dinoprostone versus oral misoprostol
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 4 trials (2557 vaginal dinoprostone, 1528 oral misoprostol) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within	**Results:** Vaginal dinoprostone showed no significant difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared with oral misoprostol (RR 0.70, 95% CI 0.52-0.95) P=0.43 I^2=30%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Dallenbach P., et al. Year Published: 2003 Location: Switzerland Journal: *American journal of obstetrics and gynecology*	The objective of the study was to compare the effectiveness, safety, and side effects of low-dose oral misoprostol with vaginal dinoprostone for cervical ripening and labor induction	**Size:** 200 patients underwent induction of labor **Inclusion Criteria**: Women with Bishop score 6 or less admitted for labor induction at term **Exclusion Criteria**: Multiple pregnancy, breech, fetal distress, or previous uterine scar	**Type:** RCT **Intervention**: The allocation to the oral misoprostol group (20 microg given every 2 hours increased to 40 microg depending on uterine contractions) or to the vaginal dinoprostone group (2 mg twice, 6 hours apart) was contained in a sealed, opaque, and consecutively numbered envelope.	**Results:** The proportion of vaginal delivery within 24 hours was 56% in the misoprostol group and 62% in the dinoprostone group (relative risk 0.90, 95% CI 0.72-1.14)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Dallenbach P. (2003) "Oral misoprostol or vaginal dinoprostone for labor induction: a randomized controlled trial." American journal of obstetrics and gynecology 188(1): 162-167.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Dinoprostone versus oral misoprostol
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 6 trials (4144 oral misoprostol, 4841 vaginal dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Oral misoprostol showed no significant difference in reducing the number of cesarean deliveries, compared with vaginal dinoprostone (RR 0.79, 95% CI 0.66-0.96) P=0.83, I^2= 0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Guha K., et al. Year Published: 2016 Location: China Journal: *Archives of gynecology and obstetrics*	To evaluate effectiveness and safety of titrated oral misoprostol solution (OMS) in comparison with vaginal dinoprostone for cervix ripening and labor induction in term pregnant women	**Size:** 481 patients underwent induction of labor **Inclusion Criteria**: Singleton pregnancies with occipital presentation, nullipara, gestational age is at least 36 weeks, Bishop score less than six, no vaginal delivery contraindication. **Exclusion Criteria**: Women with any contraindication to induction and vagina delivery, allergic to prostaglandin, and with complication of glaucoma, asthma and allergic colitis, woman with heart, liver, renal and adrenal cortex insufficiency.	**Type:** RCT **Intervention**: Participants were allocated to receive titrated OMS with different doses by hourly administration according to the procedure or insert vaginal dinoprostone for cervix ripening and labor induction to compare maternal outcomes including indication of labor induction, mode of outcome of delivery, maternal morbidity, and neonatal outcomes between two groups for evaluating the efficacy and safety of titrated oral misoprostol induction	**Results:** Proportion of cesarean section in vaginal dinoprostone (36/199, 18.0 %) was a little higher than OMS (30/212, 14.2 %), but statistically no significance,	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Dallenbach P., et al. Year Published: 2003 Location: Switzerland Journal: *American journal of obstetrics and gynecology*	The objective of the study was to compare the effectiveness, safety, and side effects of low-dose oral misoprostol with vaginal dinoprostone for cervical ripening and labor induction	**Size:** 200 patients underwent induction of labor **Inclusion Criteria**: Women with Bishop score 6 or less admitted for labor induction at term **Exclusion Criteria**: Multiple pregnancy, breech, fetal distress, or previous uterine scar	**Type:** RCT **Intervention**: The allocation to the oral misoprostol group (20 microg given every 2 hours increased to 40 microg depending on uterine contractions) or to the vaginal dinoprostone group (2 mg twice, 6 hours apart) was contained in a sealed, opaque, and consecutively numbered envelope.	**Results:** The proportion of cesarean delivery was 18% in the misoprostol group and 19% in the dinoprostone group (relative risk 0.95, 95% CI 0.53-1.70)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Dallenbach P. et al. (2003) "Oral misoprostol or vaginal dinoprostone for labor induction: a randomized controlled trial." American journal of obstetrics and gynecology 188(1): 162-167.
Guha K. et al. (2016). "Comparative study of titrated oral misoprostol solution and vaginal dinoprostone for labor induction at term pregnancy." Archives of gynecology and obstetrics 294(3): 495-503.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Dinoprostone versu oral Misoprostol
Outcome: Uterine hyper stimulation with Fetal Heart Rate Changes (infant morbidity)

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 3 trials (1234 oral misoprostol, 3020 vaginal dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Published RCTs that studied combination therapies and	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive	**Results:** Vaginal dinoprostone revealed no significant reduction in uterine hyperstimulation with FHR changes compared to oral misoprostol (RR 0.78, 95% CI 0.39-1.59) P=0.97 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Guha K., et al. Year Published: 2016 Location: China Journal: *Archives of gynecology and obstetrics*	To evaluate effectiveness and safety of titrated oral misoprostol solution (OMS) in comparison with vaginal dinoprostone for cervix ripening and labor induction in term pregnant women	**Size:** 481 patients underwent induction of labor **Inclusion Criteria**: Singleton pregnancies with occipital presentation, nullipara, gestational age is at least 36 weeks, Bishop score less than six, no vaginal delivery contraindication. **Exclusion Criteria**: Women with any contraindication to induction and vagina delivery, allergic to prostaglandin, and with complication of glaucoma, asthma and allergic colitis, woman with heart, liver, renal and adrenal cortex insufficiency.	**Type:** RCT **Intervention**: Participants were allocated to receive titrated OMS with different doses by hourly administration according to the procedure or insert vaginal dinoprostone for cervix ripening and labor induction to compare maternal outcomes including indication of labor induction, mode of outcome of delivery, maternal morbidity, and neonatal outcomes between two groups for evaluating the efficacy and safety of titrated oral misoprostol induction	**Results:** 5 women in oral misoprostol and 16 women in vaginal dinoprostone presented uterine hypertonus with significantly difference (P = 0.03).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Guha K. et al. (2016). "Comparative study of titrated oral misoprostol solution and vaginal dinoprostone for labor induction at term pregnancy." Archives of gynecology and obstetrics 294(3): 495-503.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Dinoprostone versus oral Misoprostol
Outcome: Neonatal Outcomes

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) **N/A** ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Guha K., et al. Year Published: 2016 Location: China Journal: *Archives of gynecology and obstetrics*	To evaluate effectiveness and safety of titrated oral misoprostol solution (OMS) in comparison with vaginal dinoprostone for cervix ripening and labor induction in term pregnant women	**Size:** 481 patients underwent induction of labor **Inclusion Criteria**: Singleton pregnancies with occipital presentation, nullipara, gestational age is at least 36 weeks, Bishop score less than six, no vaginal delivery contraindication. **Exclusion Criteria**: Women with any contraindication to induction and vagina delivery, allergic to prostaglandin, and with complication of glaucoma, asthma and allergic colitis, woman with heart, liver, renal and adrenal cortex insufficiency.	**Type:** RCT **Intervention**: Participants were allocated to receive titrated OMS with different doses by hourly administration according to the procedure or insert vaginal dinoprostone for cervix ripening and labor induction to compare maternal outcomes including indication of labor induction, mode of outcome of delivery, maternal morbidity, and neonatal outcomes between two groups for evaluating the efficacy and safety of titrated oral misoprostol induction	**Results:** Neonatal outcomes: Apgar scores <7 at the interval of 1, 5 and 10 min were no different, and the proportions of Meconium-stained liquor and neonate NICU admission were also similar	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Guha K. et al. (2016). "Comparative study of titrated oral misoprostol solution and vaginal dinoprostone for labor induction at term pregnancy." Archives of gynecology and obstetrics 294(3): 495-503.

Oral Misoprostol versus Intracervical Dinoprostone

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Dinoprostone versus oral misoprostol
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 3 trials (1541intracervical dinoprostone, 1528 oral misoprostol) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive	**Results:** Oral misoprostol showed no significant difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared with intracervical dinoprostone (RR 0.99, 95% CI 0.73-1.46) P=0.92 I^2=82%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Veena et al. Year Published: 2016 Location: India Journal: *Journal of obstetrics and Gynaecology of India*	To compare the effectiveness of sublingual PGE1 with intracervical PGE2	**Size:** 190 women **Inclusion Criteria**: Women with term gestation with a single live intrauterine fetus with cephalic presentation and unripe cervix (Bishop's score <6) with no other complications were enrolled. **Exclusion Criteria**: Women with obstetric complications such as uterine scar due to previous LSCS, antepartum hemorrhage, fetal anoma-lies, and systemic diseases were excluded from the study	**Type:** RCT **Intervention**: **Group A** Participants were administered 50 mcg of misoprostol sublingually, and repeat doses of 25 mcg was given in the absence of uterine activity (maximum of four doses repeated at intervals of 4h). **Group B** Under aseptic conditions, 0.5 mg of PGE2 gel was instilled intracervically by the labour room doctor and reassessed after 6 h. In both groups, if the Bishop's score remained <5 after the maximum doses of PGEI or PGE2, the hospital pro-tocol was followed. Progress and outcome of labour were recorded by the labour room doctor.	**Results:** No statistical difference in induction to delivery time between the two groups	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Veena B, et al. (2016). "Sublingual Misoprostol (PGE1) Versus Intracervical Dinoprostone (PGE2) Gel for Induction of Labour: A Randomized Control Trail." Journal of obstetrics and gynaecology of India 66: 122-128.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: intracervical Dinoprostone versus oral misoprostol
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 3 trials (4144 oral misoprostol, 2961 intracervical dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Oral misoprostol showed no significant difference in reducing the number of cesarean deliveries, compared with intracervical dinoprostone (RR 0.7, 95% CI 0.60-0.93) P=0.73, I^2= 0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Veena et al. Year Published: 2016 Location: India Journal: *Journal of obstetrics and gynaecology of India*	To compare the effectiveness of sublingual PGE1 with intracervical PGE2	**Size:** 190 women **Inclusion Criteria**: Women with term gestation with a single live intrauterine fetus with cephalic presentation and unripe cervix (Bishop's score <6) with no other complications were enrolled. **Exclusion Criteria**: Women with obstetric complications such as uterine scar due to previous LSCS, antepartum hemorrhage, fetal anoma-lies, and systemic diseases were excluded from the study	**Type:** RCT **Intervention**: **Group A** Participants were administered 50 mcg of misoprostol sublingually, and repeat doses of 25 mcg was given in the absence of uterine activity (maximum of four doses repeated at intervals of 4h). **Group B** Under aseptic conditions, 0.5 mg of PGE2 gel was instilled intracervically by the labour room doctor and reassessed after 6 h. In both groups, if the Bishop's score remained <5 after the maximum doses of PGEI or PGE2, the hospital pro-tocol was followed. Progress and outcome of labour were recorded by the labour room doctor.	**Results:** 32.6 % (31/95) in the PGE2 group underwent CD as compared to 15.8 % (15/95) in PGE I group, and was statistically significant (P<0.05)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Veena B, et al. (2016). "Sublingual Misoprostol (PGE1) Versus Intracervical Dinoprostone (PGE2) Gel for Induction of Labour: A Randomized Control Trail." Journal of obstetrics and gynaecology of India 66: 122-128.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Dinoprostone versus oral Misoprostol
Outcome: Uterine hyper stimulation with Fetal Heart Rate Changes (infant morbidity)

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 2 trials (1234 oral misoprostol, 1338 intracervical dinopsotone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Published RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Intracervical dinoprostone revealed no significant reduction in uterine hyper stimulation with FHR changes compared to oral misoprostol (RR 0.59, 95% CI 0.25-1.30) P=0.80 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.

Misoprostol versus Placebo

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with premature rupture of membranes
Modality: Misoprostol versus Placebo
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Lin, M. G., et al. Year Published: 2005 Location: Journal: *Obstetrics & Gynaecology*	To systematically review published data evaluating the comparative use of misoprostol with placebo/expectant management or oxytocin for labor induction in women with term (> or = 36 weeks of gestation) premature rupture of membranes.	**Size:** 4 RCTs, 254 participants **Inclusion Criteria**: Randomized controlled trials (RCTs) with published results, either as an abstract or complete article, in women at or greater than 36 weeks of gestation (defined for the purposes of this meta-analysis as "term") with PROM who were treated with misoprostol for labor induction compared with either expectant management/ placebo or oxytocin were included in the analysis	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit	**Results:** Misoprostol, when compared with placebo or expectant management, significantly increased vaginal delivery at less than 12 hours (relative risk [RR] 2.71, 95% confidence interval [CI] 1.87–3.92, P < .0001) but not at less than 24 hours (RR 1.54, 95% CI 0.77–3.07, P=.22)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		Exclusion Criteria: 1) evidence of prior uterine surgery, 2) labor, 3) fetal distress, 4) nonvertex, 5) nonsingleton presentation, 6) chorioamnionitis, 7) active vaginal bleeding, 8) maternal contraindication to prostaglandin use, or 9) fetal anomalies at the time of enrollment.	admission, and neonatal sepsis (positive blood cultures).		
Author: Ayaz et al. Year Published: 2008 Location: Saudi Arabia Journal: *Taiwan Journal of Obstetrics and Gynecology*	To compare the safety and efficacy of conservative management of pre-labor rupture of membranes (PROM) at term in patients with an unfavorable cervix, with active treatment using oral misoprostol	**Size:** 84 women multigravida **Inclusion Criteria**: The participants were aged between 25 and 35 years, multigravid (parity, ≤ 5), demonstrated PROM (< 4 hours) at term (≥ 37 weeks), were not in labor, had a single-fetus pregnancy with cephalic presentation, a normal cardiotocogram, and an adequate pelvis on clinical pelvimetry **Exclusion Criteria**: Established labor at the time of presentation, signs and symptoms suggestive of chorioamnionitis, primigravid status, fetal distress, malpresentation, postdate pregnancy, cord prolapse, inadequate pelvis on clinical pelvimetry, previous uterine surgery, sensitivity to misoprostol, and other medical problems	**Type:** RCT **Intervention**: Women were divided equally between group S (study) and group C (conservative). Croup S was given 50 mug of oral misoprostol every 4 hours for a maximum of four doses, while group C was managed conservatively. The intervals between PROM and significant uterine contractions and delivery, the mode of delivery, and maternal and fetal/neonatal complications were the main outcome measures	**Results:** In group S, almost all patients showed significant uterine contractions within 24 hours of PROM, compared with 29 (69%) in group C.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Lin, M. G., et al. (2005). "Misoprostol for labor induction in women with term premature rupture of membranes: a meta-analysis." Obstetrics & Gynecology 106(3): 593-601.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with a BMI ≥ 30
Modality: Misoprostol versus Placebo
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Pevzner et al. Year Published: 2009 Location: US Journal: *Obstetrics and Gynecology*	To estimate the effect of maternal body mass index (BMI) on progress and outcomes of prostaglandin labor induction.	**Size:** 1273 patients were stratified according to BMI categories, with 418 study participants classified as lean (BMI less than 30), 644 as obese (BMI 30-39.9), and 211 as extremely obese (BMI 40 or higher) **Inclusion Criteria**: 18 years, of low parity (three or less) with singleton pregnancies, and at least 36 weeks 0 days of gestation, no conditions requiring urgent delivery and required cervical ripening defined as a baseline modified Bishop score of 4 or less.	**Type:** RCT **Intervention**: This study was a secondary analysis of data collected during the Misoprostol Vaginal Insert Trial, a multisite, double-blind, randomized trial of women requiring cervical ripening before induction of labor. The duration, characteristics, and outcomes of labor were analyzed after stratification by BMI categories. Multivariable regression analysis was performed on all outcomes of interest, adjusting for race, parity,	**Results:** Evaluation of delivery (regardless of route) within 24 hours after initiation of induction demonstrated a significant difference, with 54.6% of lean participants delivering, compared with 47.5% of obese participants (odds ratio [OR] 0.75, 95% confidence interval [CI] 0.59–0.97, P=.025) and 41.7% of extremely obese women(OR 0.60, 95% CI 0.43–0.83, P=.002). Confining the analysis to vaginal delivery participants revealed a similar, albeit not statistically significant, trend, with 58.4% of lean participants delivering within 24 hours, compared with 52.9% of obese participants (OR 0.80, 95% CI 0.60 –1.07, P=.13) and 49.3% of extremely obese women (OR 0.69, 95% CI 0.46 –1.04, P=.07). However, multiple logistic regression analysis adjusting for race, parity, and treatment group allocation demonstrated a significant correlation between maternal obesity and vaginal delivery within 24 hours.	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		Exclusion Criteria: Labor or vaginal delivery was contraindicated, delivery was deemed to be urgent, or there was a known sensitivity to either misoprostol or dinoprostone.	and treatment group allocation.	Table 2. Labor and Delivery Outcomes: Categorical Variables Outcome | BMI Less Than 30 (n=418) | BMI 30–39.9 (n=644) | OR (95%CI)* | Adjusted OR (95%CI)† | BMI 40 or Higher (n=211) | OR (95% CI)‡ | Adjusted OR (95% CI)† Reached active labor | 403 (96.4) | 593 (92.1) | 0.43 (0.24–0.78)§ | 0.42 (0.23–0.75)§ | 193 (91.5) | 0.40 (0.20–0.81)§ | 0.40 (0.20–0.82)§ Oxytocin for induction | 129 (30.9) | 254 (39.4) | 1.46 (1.12–1.89)§ | 1.51 (1.15–1.97)§ | 102 (48.3) | 2.10 (1.49–2.95)§ | 2.24 (1.57–3.18)§ Oxytocin for augmentation | 155 (37.1) | 224 (34.8) | 0.90 (0.70–1.17) | 0.94 (0.73–1.22) | 62 (29.4) | 0.71 (0.49–1.01) | 0.73 (0.51–1.05) Delivery less than 24 h All participants | 228 (54.6) | 306 (47.5) | 0.75 (0.59–0.97)§ | 0.68 (0.52–0.88)§ | 88 (41.7) | 0.60 (0.43–0.83)§ | 0.52 (0.36–0.74)§ Vaginal delivery only (n=915) | 192 (58.4) | 239 (52.9) | 0.80 (0.60–1.07) | 0.66 (0.48–0.91)§ | 66 (49.3) | 0.69 (0.46–1.04) | 0.51 (0.33–0.79)§ Cesarean delivery | 89 (21.3) | 192 (29.8) | 1.57 (1.18–2.10)§ | 1.73 (1.28–2.35)§ | 77 (36.5) | 2.12 (1.47–3.06)§ | 2.32 (1.58–3.42)§ Cesarean delivery in first stage of labor | 55 (61.8) | 142 (74.0) | 1.76 (1.03–3.0)§ | 1.71 (0.99–2.95) | 64 (83.1) | 3.04 (1.46–6.34)§ | 2.87 (1.35–6.10)§ BMI, body mass index; OR, odds ratio; CI, confidence interval. Data are n (%). * Comparison of BMI 30–39.9 with BMI less than 30. † Adjusted for parity, race, and treatment group. ‡ Comparison of BMI 40 or higher with BMI less than 30. § P<.05.	

References:
Pevzner L, et al. (2009) "Effects of maternal obesity on duration and outcomes of prostaglandin cervical ripening and labor induction." Obstetrics and Gynecology 114(6): 1315-1321.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women with a BMI > 30
Modality: Misoprostol versus placebo
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Pevzner et al. Year Published: 2009 Location: US	To estimate the effect of maternal body mass index (BMI) on progress and outcomes of	**Size:** 1273 patients were stratified according to BMI categories, with 418 study participants classified as lean (BMI less than 30), 644	**Type:** RCT **Intervention**: This study was a secondary analysis of data collected during	**Results:** The overall rate of cesarean delivery in the original Misoprostol Vaginal Insert Trial was approximately 28%. While 21.3% of participants in BMI less than 30 group required a cesarean delivery, the incidence increased to 29.8% in the BMI 30–39.9 group	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding

Journal: *Obstetrics and Gynecology*	prostaglandin labor induction.	as obese (BMI 30-39.9), and 211 as extremely obese (BMI 40 or higher) **Inclusion Criteria**: 18 years, of low parity (three or less) with singleton pregnancies, and at least 36 weeks 0 days of gestation, no conditions requiring urgent delivery and required cervical ripening defined as a baseline modified Bishop score of 4 or less. **Exclusion Criteria**: Labor or vaginal delivery was contraindicated, delivery was deemed to be urgent, or there was a known sensitivity to either misoprostol or dinoprostone	the Misoprostol Vaginal Insert Trial, a multisite, double-blind, randomized trial of women requiring cervical ripening before induction of labor. The duration, characteristics, and outcomes of labor were analyzed after stratification by BMI categories. Multivariable regression analysis was performed on all outcomes of interest, adjusting for race, parity, and treatment group allocation	(OR 1.57, 95% CI 1.18 –2.10, P=.002) and 36.5% in the BMI 40 or higher group (OR 2.12, 95% CI 1.47–3.06, P<.001). This difference was amplified in the analysis of proportion of cesarean deliveries performed in the first stage of labor. Nearly 62% of cesarean deliveries occurred in the first stage of labor in the BMI less than 30 group, compared with 74% in the BMI 30–39.9 group (OR 1.76, 95% CI 1.03–3.0, P=.04) and 83% in the BMI 40 or higher group (OR 3.04, 95% CI 1.46–6.34, P=.002). Table 2. Labor and Delivery Outcomes: Categorical Variables | Outcome	BMI Less Than 30 (n=418)	BMI 30–39.9 (n=644)	OR (95%CI)*	Adjusted OR (95%CI)†	BMI 40 or Higher (n=211)	OR (95% CI)‡	Adjusted OR (95% CI)†
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Reached active labor	403 (96.4)	593 (92.1)	0.43 (0.24–0.78)§	0.42 (0.23–0.75)§	193 (91.5)	0.40 (0.20–0.81)§	0.40 (0.20–0.82)§
Oxytocin for induction	129 (30.9)	254 (39.4)	1.46 (1.12–1.89)§	1.51 (1.15–1.97)§	102 (48.3)	2.10 (1.49–2.95)§	2.24 (1.57–3.18)§
Oxytocin for augmentation	155 (37.1)	224 (34.8)	0.90 (0.70–1.17)	0.94 (0.73–1.22)	62 (29.4)	0.71 (0.49–1.01)	0.73 (0.51–1.05)
Delivery less than 24 h							
All participants	228 (54.6)	306 (47.5)	0.75 (0.59–0.97)§	0.68 (0.52–0.88)§	88 (41.7)	0.60 (0.43–0.83)§	0.52 (0.36–0.74)§
Vaginal delivery only (n=915)	192 (58.4)	239 (52.9)	0.80 (0.60–1.07)	0.66 (0.48–0.91)§	66 (49.3)	0.69 (0.46–1.04)	0.51 (0.33–0.79)§
Cesarean delivery	89 (21.3)	192 (29.8)	1.57 (1.18–2.10)§	1.73 (1.28–2.35)§	77 (36.5)	2.12 (1.47–3.06)§	2.32 (1.58–3.42)§
Cesarean delivery in first stage of labor	55 (61.8)	142 (74.0)	1.76 (1.03–3.0)§	1.71 (0.99–2.95)	64 (83.1)	3.04 (1.46–6.34)§	2.87 (1.35–6.10)§	 BMI, body mass index; OR, odds ratio; CI, confidence interval. Data are n (%). * Comparison of BMI 30–39.9 with BMI less than 30. † Adjusted for parity, race, and treatment group. ‡ Comparison of BMI 40 or higher with BMI less than 30. § P<.05.	☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Pevzner L, et al. (2009) "Effects of maternal obesity on duration and outcomes of prostaglandin cervical ripening and labor induction." Obstetrics and Gynecology 114(6): 1315-1321.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with premature rupture of membranes
Modality: Misoprostol versus placebo
Outcome: Uterine hyper stimulation

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Lin, M. G., et al. Year Published: 2005 Location: Journal: *Obstetrics & Gynaecology*	To systematically review published data evaluating the comparative use of misoprostol with placebo/expectant management or oxytocin for labor induction in women with term (> or = 36 weeks of gestation) premature rupture of membranes.	**Size:** 6 RCTs, 453 **Inclusion Criteria**: Randomized controlled trials (RCTs) with published results, either as an abstract or complete article, in women at or greater than 36 weeks of gestation (defined for the purposes of this meta-analysis as "term") with PROM who were treated with misoprostol for labor induction compared with either expectant management/ placebo or oxytocin were included in the analysis **Exclusion Criteria**: 1) evidence of prior uterine surgery, 2) labor, 3) fetal distress, 4) nonvertex, 5) nonsingleton presentation, 6) chorioamnionitis, 7) active vaginal bleeding, 8) maternal contraindication to prostaglandin use, or 9) fetal anomalies at the time of enrollment.	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	**Results:** Misoprostol use was associated with a significantly increased risk of tachysystole when compared with placebo (RR 4.9, 95% CI 1.78–9.38, P< .001) but this did not translate into an increased risk of hyperstimulation syndrome (RR 2.70, 95% CI 0.73–10.03, P = .14)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Lin, M. G., et al. (2005). "Misoprostol for labor induction in women with term premature rupture of membranes: a meta-analysis." Obstetrics & Gynecology 106(3): 593-601.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with premature rupture of membranes
Modality: Misoprostol versus placebo
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Lin, M. G., et al. Year Published: 2005 Location: Journal: *Obstetrics & Gynaecology*	To systematically review published data evaluating the comparative use of misoprostol with placebo/expectant management or oxytocin for labor induction in women with term (> or = 36 weeks of gestation) premature rupture of membranes.	**Size:** 6 RCTs, 453 participants **Inclusion Criteria**: Randomized controlled trials (RCTs) with published results, either as an abstract or complete article, in women at or greater than 36 weeks of gestation (defined for the purposes of this meta-analysis as "term") with PROM who were treated with misoprostol for labor induction compared with either expectant management/ placebo or oxytocin were included in the analysis	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	**Results:** Misoprostol use was not associated with a significantly increased risk of cesarean delivery RR=0.74 (0.47–1.16) P=.19	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		Exclusion Criteria: 1) evidence of prior uterine surgery, 2) labor, 3) fetal distress, 4) nonvertex, 5) nonsingleton presentation, 6) chorioamnionitis, 7) active vaginal bleeding, 8) maternal contraindication to prostaglandin use, or 9) fetal anomalies at the time of enrollment.			
Author: Ayaz et al. Year Published: 2008 Location: Saudi Arabia Journal: *Taiwan Journal of Obstetrics and Gynecology*	To compare the safety and efficacy of conservative management of pre-labor rupture of membranes (PROM) at term in patients with an unfavorable cervix, with active treatment using oral misoprostol	**Size:** 84 women multigravida **Inclusion Criteria**: The participants were aged between 25 and 35 years, multigravid (parity, ≤ 5), demonstrated PROM (< 4 hours) at term (≥ 37 weeks), were not in labor, had a single-fetus pregnancy with cephalic presentation, a normal cardiotocogram, and an adequate pelvis on clinical pelvimetry **Exclusion Criteria**: established labor at the time of presentation, signs and symptoms suggestive of chorioamnionitis, primigravid status, fetal distress, malpresentation, postdate pregnancy, cord prolapse, inadequate pelvis on clinical pelvimetry, previous uterine surgery, sensitivity to misoprostol, and other medical problems.	**Type:** RCT **Intervention**: Women were divided equally between group S (study) and group C (conservative). Croup S was given 50 mug of oral misoprostol every 4 hours for a maximum of four doses, while group C was managed conservatively. The intervals between PROM and significant uterine contractions and delivery, the mode of delivery, and maternal and fetal/neonatal complications were the main outcome measures	**Results:** Regarding the overall mode of delivery, four (10%) delivered abdominally in group S, while 20 (48%) in group C had cesarean sections (0.01 < P < 0.05). In group S, two cesarean sections were performed within 24 hours of PROM, while 10 in group C were performed (0.01 < P < 0.05).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Lin, M. G., et al. (2005). "Misoprostol for labor induction in women with term premature rupture of membranes: a meta-analysis." Obstetrics & Gynecology 106(3): 593-601.
Ayaz A, S.(2008). "Pre-labor rupture of membranes at term in patients with an unfavorable cervix: active versus conservative management." Taiwanese journal of obstetrics & gynecology 47(2): 192-196.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with premature rupture of membranes
Modality: Misoprostol versus Placebo
Outcome: Chorioamnionitis

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Lin, M. G., et al. Year Published: 2005 Location: Journal: *Obstetrics & Gynaecology*	To systematically review published data evaluating the comparative use of misoprostol with placebo/expectant management or oxytocin for labor induction in women with term (> or = 36 weeks of gestation) premature rupture of membranes.	**Size:** 4 RCTs, 277 participants **Inclusion Criteria**: Randomized controlled trials (RCTs) with published results, either as an abstract or complete article, in women at or greater than 36 weeks of gestation (defined for the purposes of this meta-analysis as "term") with PROM who were treated with misoprostol for labor induction compared with either expectant management/ placebo or oxytocin were included in the analysis **Exclusion Criteria**: 1) evidence of prior uterine surgery, 2)	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	**Results:** Misoprostol use was not associated with a significantly increased risk of chorioamnionitis RR=0.63 (0.35–1.12) P=0.11	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		labor, 3) fetal distress, 4) nonvertex, 5) nonsingleton presentation, 6) chorioamnionitis, 7) active vaginal bleeding, 8) maternal contraindication to prostaglandin use, or 9) fetal anomalies at the time of enrollment.			

References:
Lin, M. G., et al. (2005). "Misoprostol for labor induction in women with term premature rupture of membranes: a meta-analysis." Obstetrics & Gynecology 106(3): 593-601.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Misoprostol versus Placebo
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 10 studies (1141 women) **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours;	**Results:** Compared to placebo, misoprostol was associated with reduced failure to achieve vaginal delivery within 24 hours (average relative risk (RR)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

		induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	(2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	0.51, 95% confidence interval (CI) 0.37 to 0.71).	☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Misoprostol versus Placebo
Outcome: Uterine Hyperstimulation with FHR Changes

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 6 studies 794 women **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours;	**Results:** Uterine hyperstimulation without FHR changes was increased with misoprostol RR 3.52, (95% CI 1.78 to 6.99)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

		listed above it on a predefined list of methods of labour induction	(2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death		☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Misoprostol versus Placebo
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 10 studies (1141 women) **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours;	**Results:** Compared to placebo, misoprostol was not associated with reduced delivery by cesarean section 0.81 [0.63, 1.05]	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

		listed above it on a predefined list of methods of labour induction	(2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death		☐ Inappropriate pooled analysis
Author: Beigi A., et al. Year Published: 2003 Location: Iran Journal: *International journal of gynaecology and obstetrics*	To determine the efficacy of 200 microg single dose oral misoprostol as a cervical priming agent at term.	**Size:** 156 pregnant women requiring induction of labor **Inclusion Criteria**: Singleton pregnancy, cephalic presentation, gestational age 37-42 weeks, women not in labor at admission, Bishop score <6, normal fetus with reassuring heart rate **Exclusion Criteria**: Previous uterine scar, meconium stained fluid, placental apbruption, known allergy to prostaglandins, signs of infection or other contraindications to vaginal delivery	**Type:** RCT **Intervention**: Patients were randomized to receive either 200 microg of misoprostol or a placebo, orally. Labor was induced with intravenous oxytocin infusion 12 h after oral medication if the patient did not go into labor. The primary outcome was the change in the Bishop score 12 h after oral medication. The secondary outcomes were the timings starting from the drug administration to the onset of uterine activity, interval between oral medication and delivery, oxytocin need for induction, mode of delivery, frequency of side effects, and neonatal and maternal outcome.	**Results:** The cesarean delivery rate was significantly lower in the misoprostol group (P<0.001)	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.
Beigi A, et al. (2003). "Cervical ripening with oral misoprostol at term." International journal of gynaecology and obstetrics 83(3): 251-255.

Vaginal Misoprostol versus Oxytocin

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal Misoprostol versus Oxytocin
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Hofmeyr, G. J., et al. Year Published: 2010 Location: Europe Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of vaginal misoprostol for third trimester cervical ripening or induction of labour.	**Size:** 10 studies **Inclusion Criteria:** Clinical trials comparing misoprostol administered vaginally for cervical ripening or labour induction, with placebo/no treatment or other methods listed above it on a predefined list of methods of labour induction	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Misoprostol, in the doses used in these trials, was more effective than oxytocin for labour induction (RR of failure to achieve vaginal delivery within 24 hours 0.65, 95% CI 0.47 to 0.90)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Hofmeyr, G. J., et al. (2010). "Vaginal misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(10): CD000941.

Oxytocin vs. Placebo

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus placebo or expectant management
Outcome: Vaginal delivery not achieved in 24 hours

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** Three trials; 399 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Intravenous oxytocin reduced the failure to achieve vaginal delivery within 24 hours when compared with expectant management (8.4% versus 54%, risk ratio (RR) 0.16, 95% confidence interval (CI) 0.10 to 0.25).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus placebo or expectant management
Outcome: Uterine hyperstimulation with fetal heart rate changes

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 1 trial; 100 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** no evidence of a difference between groups (RR 0.16, 95% CI 0.01 to 3.34).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus placebo or expectant management
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 24 trials; 6620 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Small, but statistically significant increase in CD for women in the oxytocin group (10.4% versus 9.0%, RR 1.17, 95% CI 1.01 to 1.35)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus placebo or expectant management
Outcome: Neonatal infection

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 14; 5226 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Neonatal infection was lower with oxytocin induction compared with a policy of expectant management (1.5% versus 2.4%, RR 0.65, 95%CI 0.40 to 0.95)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Oxytocin versus placebo or expectant management
Outcome: Chorioamnionitis

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 14; 5226 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Rates of chorioamnionitis were reduced in the oxytocin group (RR 0.69, 95% CI 0.57 to 0.85) but between-study heterogeneity for this outcome was high (I^2 = 65%). When the analysis was repeated using a random-effects model the difference between groups was no longer significant (RR 0.90, 95% CI 0.58 to 1.39).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

Intravenous Oxytocin alone versus Vaginal Prostaglandins

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous Oxytocin alone versus vaginal prostaglandins
Outcome: Chorioamnionitis

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 4 trials; 2742 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Rates of chorioamnionitis were lower when oxytocin was compared with vaginal PGE2 (3.9% versus 6.0%, RR 0.66, 95% CI 0.47 to 0.92).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous Oxytocin alone versus vaginal prostaglandins
Outcome: Induction to Delivery interval

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen W., et al. Year Published: 2014 Location: China Journal: *Journal of obstetrics and Gynaecology : the journal of the Institute of Obstetrics and Gynaecology*	To investigate the efficiency and safety of a controlled-release hydrogel vaginal pessary containing 10 mg prostaglandin E2 as a methodology for cervical ripening and labour induction in full-term pregnant patients.	**Size:** 169 patients underwent induction of labor **Inclusion Criteria**: Women at term with a Bishop's score of < 6 and without any contraindications, to vaginal delivery, or the use of prostaglandin or oxytocin in induction of labor.	**Type:** RCT **Intervention**: Women were divided into three groups: oxytocin group (n = 59), intact membranes (Propess I group; n = 58) and natural rupture (Propess R group; n = 52) groups. The main outcome measures, including change in Bishop's score, induction to delivery interval, total delivery time, rate of vaginal delivery, fetal outcome and maternal complications during induction, were recorded.	**Results:** Both the induction to delivery interval and total delivery time were significantly shorter in the Propess groups (p< 0.01) The induction to delivery interval and total delivery time were shorter in the Propess R group than in Propess I group. This might be because the amnion had already ruptured in the Propess R group.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Koc, O., et al. Year Published: 2013 Location: Turkey Journal: *Journal of Obstetrics & Gynaecology Research*	To compare the efficacy and safety of high-dose intravenous oxytocin and sustained-release dinoprostone vaginal pessaries for cervical ripening and labor induction in pregnant patients at term with poor Bishop scores.	**Size:** 180 patients underwent induction of labor **Inclusion Criteria**: Singleton live pregnancies with cephalic presentation, gestation between 37 and 42 weeks, indication of labor induction, cervical Bishop score of >4 and <6, intact amniotic membranes, and reassuring fetal heart rate (FHR). **Exclusion Criteria**: Fetal congenital abnormalities, any contraindication for vaginal delivery, previous myomectomy or cesarean delivery, multiple pregnancy, breech presentation, antepartum hemorrhage, cardiopulmonary, renal, or hepatic disease, known hypersensitivity to prostaglandins or uterotonic agents, cephalopelvic disproportion, estimated fetal birth weight over 4500 g, placenta previa, and known or suspected intrauterine infection.	**Type:** RCT **Intervention**: Women at term with a Bishop score >4 and <6 were randomized into two groups to undergo induction of labor with either high-dose oxytocin administered intravenously (n = 90) or dinoprostone-only vaginal pessary without oxytocin augmentation (n = 90). The main outcome measures were rate of cesarean delivery, induction to delivery interval, number of deliveries achieved within 4, 8, 12, and 16 h of labor induction, maternal complications during induction, fetal outcome, and total hospital stay.	**Results:** The induction-delivery intervals (7.9 h vs 12.0 h, P < 0.001; and 5.7 vs 10.4 h, P < 0.001; oxytocin vs dinoprostone-only for primiparous and multiparous patients, respectively) were significantly shorter in oxytocin-induced patients compared to dinoprostone-only. A significantly higher percentage of patients delivered in the oxytocin group compared to the dinoprostone only group in 4, 8, 12, 16, and 20 h.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Koc, O., et al. (2013). "Oxytocin versus sustained-release dinoprostone vaginal pessary for labor induction of unfavorable cervix with Bishop score >= 4 and <= 6: a randomized controlled trial." Journal of Obstetrics & Gynaecology Research 39(4): 790-798.
Chen W, et al. (2014) "Evaluation of Propess outcomes for cervical ripening and induction of labour in full-term pregnancy." Journal of obstetrics and gynaecology : the journal of the Institute of Obstetrics and Gynaecology 34(3): 255-258.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus vaginal prostaglandins
Outcome: Failure to achieve vaginal delivery within 24 hours

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☐ Low ☒ Very Low					
Risk of Bias across studies: ☒ High ☐ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 2 trials; 58 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Oxytocin was associated with more failures to achieve vaginal delivery within 24 hours (70% versus 21%, RR 3.33, 95% CI 1.61 to 6.89	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous Oxytocin alone versus vaginal prostaglandins
Outcome: Caesarean delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☒ High ☐ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 26 trials; 4514 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** There was no significant difference in caesarean section rates for women receiving oxytocin compared with vaginal PGE2 (12.1%vs 10.9%, RR 1.11, 95% CI 0.94 to 1.30)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Antonazzo, P., et al. Year Published: 2016 Location: Italy Journal: *Reproductive sciences*	To evaluate the efficacy of 2 different regimens for labor induction in patients with unfavorable cervix not responsive to a first dose of dinoprostone vaginal insert.	**Size:** 338 patients underwent induction of labor **Inclusion Criteria**: Singleton gestation, vertex presentation, gestation age ≥37 weeks, normal preinduction fetal heart rate tracing, and labor	**Type:** RCT **Intervention**: After standard 24 hours treatment, 94 singleton term pregnancies remained with a Bishop score <=6 and were randomized into 2 different regimens: repeated vaginal dinoprostone (group A, n = 47) or intravenous oxytocin	**Results:** Cesarean section rate was significantly higher in patients treated using oxytocin compared to patients who received a second dose of dinoprostone (group A: 44.7% vs group B: 66%; P < .05)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☒ Stopped early for benefit ☐ Incorrect analysis of ITT

		induction with a Bishop score ≥6 **Exclusion Criteria**: Previous cesarean section or previous uterine surgery, hypersensitivity to dinoprostone or to any of the excipients, fetal malpresentation, placenta previa, estimated fetal weight≥ 4500 g, and any contraindication for vaginal Delivery	(group B, n = 47). Primary outcome was vaginal delivery, and the secondary outcomes were interval between labor induction and delivery and operative delivery rates		☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Chen W., et al. Year Published: 2014 Location: China Journal: *Journal of obstetrics and Gynaecology : the journal of the Institute of Obstetrics and Gynaecology*	To investigate the efficiency and safety of a controlled-release hydrogel vaginal pessary containing 10 mg prostaglandin E2 as a methodology for cervical ripening and labour induction in full-term pregnant patients.	**Size:** 169 patients underwent induction of labor **Inclusion Criteria**: Women at term with a Bishop's score of < 6 and without any contraindications, to vaginal delivery, or the use of prostaglandin or oxytocin in induction of labor.	**Type:** RCT **Intervention**: Women were divided into three groups: oxytocin group (n = 59), intact membranes (Propess I group; n = 58) and natural rupture (Propess R group; n = 52) groups. The main outcome measures, including change in Bishop's score, induction to delivery interval, total delivery time, rate of vaginal delivery, fetal outcome and maternal complications during induction, were recorded.	**Results:** In the Propess groups, 90 (81.8%) women had their baby through the vagina versus only 21 (35.6%) women in the oxytocin group (P < 0 .01).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Koc, O., et al. Year Published: 2013 Location: Turkey Journal: *Journal of Obstetrics & Gynaecology Research*	To compare the efficacy and safety of high-dose intravenous oxytocin and sustained-release dinoprostone vaginal pessaries for cervical ripening and labor induction in pregnant patients at term with poor Bishop scores.	**Size:** 180 patients underwent induction of labor **Inclusion Criteria**: Singleton live pregnancies with cephalic presentation, gestation between 37 and 42 weeks, indication of labor induction, cervical Bishop score of >4 and <6, intact amniotic membranes, and reassuring fetal heart rate (FHR).	**Type:** RCT **Intervention**: Women at term with a Bishop score >4 and <6 were randomized into two groups to undergo induction of labor with either high-dose oxytocin administered intravenously (n = 90) or dinoprostone-only vaginal pessary without oxytocin augmentation (n = 90). The main outcome measures were	**Results:** There were no significant differences in cesarean section rates between the oxytocin and dinoprostone-only groups (5 [10.9%] vs 11 [20.8%], P = 0.183 and 2 [6.1%] vs 3 [8.3%], P = 1.000 for primiparous and multiparous groups, respectively.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		Exclusion Criteria: Fetal congenital abnormalities, any contraindication for vaginal delivery, previous myomectomy or cesarean delivery, multiple pregnancy, breech presentation, antepartum hemorrhage, cardiopulmonary, renal, or hepatic disease, known hypersensitivity to prostaglandins or uterotonic agents, cephalopelvic disproportion, estimated fetal birth weight over 4500 g, placenta previa, and known or suspected intrauterine infection.	rate of cesarean delivery, induction to delivery interval, number of deliveries achieved within 4, 8, 12, and 16 h of labor induction, maternal complications during induction, fetal outcome, and total hospital stay.		☐ Difference in important prognostic factors at baseline

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.
Koc, O., et al. (2013). "Oxytocin versus sustained-release dinoprostone vaginal pessary for labor induction of unfavorable cervix with Bishop score >= 4 and <= 6: a randomized controlled trial." Journal of Obstetrics & Gynaecology Research 39(4): 790-798.
Chen W, et al. (2014) "Evaluation of Propess outcomes for cervical ripening and induction of labour in full-term pregnancy." Journal of obstetrics and gynaecology : the journal of the Institute of Obstetrics and Gynaecology 34(3): 255-258.
Antonazzo, P., et al. (2016). "Vaginal Dinoprostone Versus Intravenous Oxytocin for Labor Induction in Patients Not Responsive to a First Dose of Dinoprostone: A Randomized Prospective Study." Reproductive sciences 23(6): 779-784.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus vaginal prostaglandins
Outcome: Uterine hyperstimulation with fetal heart rate (FHR)

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 843 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** The incidence of uterine hyperstimulation with FHR changes was very low, with only two women of the 843 included in trials experiencing this outcome (RR 0.35, 95% CI 0.04 to 3.28).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus vaginal prostaglandins
Outcome: NICU Admission

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies: ☒ High ☐ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Koc, O., et al. Year Published: 2013 Location: Turkey Journal: *Journal of Obstetrics & Gynaecology Research*	To compare the efficacy and safety of high-dose intravenous oxytocin and sustained-release dinoprostone vaginal pessaries for cervical ripening and labor induction in pregnant patients at term with poor Bishop scores.	**Size:** 180 patients underwent induction of labor **Inclusion Criteria**: Singleton live pregnancies with cephalic presentation, gestation between 37 and 42 weeks, indication of labor induction, cervical Bishop score of >4 and <6, intact amniotic membranes, and reassuring fetal heart rate (FHR). **Exclusion Criteria**: Fetal congenital abnormalities, any contraindication for vaginal delivery, previous myomectomy or cesarean delivery, multiple pregnancy, breech presentation, antepartum hemorrhage, cardiopulmonary, renal, or hepatic disease, known hypersensitivity to prostaglandins or uterotonic agents, cephalopelvic disproportion, estimated fetal birth weight over 4500 g, placenta previa, and known or	**Type:** RCT **Intervention**: Women at term with a Bishop score >4 and <6 were randomized into two groups to undergo induction of labor with either high-dose oxytocin administered intravenously (n = 90) or dinoprostone-only vaginal pessary without oxytocin augmentation (n = 90). The main outcome measures were rate of cesarean delivery, induction to delivery interval, number of deliveries achieved within 4, 8, 12, and 16 h of labor induction, maternal complications during induction, fetal outcome, and total hospital stay.	**Results:** Four of 79 newborns for the oxytocin group and six of 89 newborns for the dinoprostone-only group were admitted to the neonatal intensive care unit without any significant differences between groups. All the babies progressed well and were discharged with their mother.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		suspected intrauterine infection.			

References:
Koc, O., et al. (2013). "Oxytocin versus sustained-release dinoprostone vaginal pessary for labor induction of unfavorable cervix with Bishop score >= 4 and <= 6: a randomized controlled trial." Journal of Obstetrics & Gynaecology Research 39(4): 790-798.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus vaginal prostaglandins
Outcome: Length of stay

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Koc, O., et al. Year Published: 2013 Location: Turkey Journal: *Journal of Obstetrics & Gynaecology Research*	To compare the efficacy and safety of high-dose intravenous oxytocin and sustained-release dinoprostone vaginal pessaries for cervical ripening and labor induction in pregnant patients at term with poor Bishop scores.	**Size:** 180 patients underwent induction of labor **Inclusion Criteria**: Singleton live pregnancies with cephalic presentation, gestation between 37 and 42 weeks, indication of labor induction, cervical Bishop score of >4 and <6, intact amniotic membranes, and reassuring fetal heart rate (FHR).	**Type:** RCT **Intervention**: Women at term with a Bishop score >4 and <6 were randomized into two groups to undergo induction of labor with either high-dose oxytocin administered intravenously (n = 90) or dinoprostone-only vaginal pessary without oxytocin augmentation (n = 90). The main outcome measures were	**Results:** A statistically significantly shorter total hospital stay (days) was found for oxytocin compared to dinoprostone-only groups (1.88 ±0.64 vs 2.19 ± 0.68 P = 0.003).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		Exclusion Criteria: Fetal congenital abnormalities, any contraindication for vaginal delivery, previous myomectomy or cesarean delivery, multiple pregnancy, breech presentation, antepartum hemorrhage, cardiopulmonary, renal, or hepatic disease, known hypersensitivity to prostaglandins or uterotonic agents, cephalopelvic disproportion, estimated fetal birth weight over 4500 g, placenta previa, and known or suspected intrauterine infection.	rate of cesarean delivery, induction to delivery interval, number of deliveries achieved within 4, 8, 12, and 16 h of labor induction, maternal complications during induction, fetal outcome, and total hospital stay.		☐ Difference in important prognostic factors at baseline

References:
Koc, O., et al. (2013). "Oxytocin versus sustained-release dinoprostone vaginal pessary for labor induction of unfavorable cervix with Bishop score >= 4 and <= 6: a randomized controlled trial." Journal of Obstetrics & Gynaecology Research 39(4): 790-798.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus vaginal prostaglandins
Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 3 trials; 2663 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** While oxytocin was perceived less favorably, there was no significant difference between groups when dissatisfaction with the induction process was measured by post-delivery questionnaires (RR 1.30, 95% CI 0.96 to 1.77)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

Intravenous Oxytocin alone vs. Intracervical Prostaglandins

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus intracervical prostaglandins
Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:		**Lower Quality Rating if:**		**Other Considerations:**	
☐ High ☐ Medium ☒ Low		☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 1 trial; 98 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Women in the oxytocin groups were less dissatisfied, but the evidence of a difference between groups was not statistically significant (RR 0.36, 95% CI 0.12 to 1.06).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor

Modality: Intravenous oxytocin alone versus intracervical prostaglandins

Outcome: Failure to achieve vaginal delivery within 24 hours

Quality (certainty) of evidence for: (outcome)

☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:		**Lower Quality Rating if:**		**Other Considerations:**	
☐ High ☐ Medium ☒ Low		☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 2 trials; 258 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Oxytocin was associated with increased unsuccessful vaginal deliveries within 24 hours when compared with intracervical PGE2 (50.4% versus 34.6%, RR 1.47, 95% CI 1.10 to 1.96)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus intracervical prostaglandins
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)

☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 14 trials; 1331 women **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** Results favored intracervical PGE2 with an increased rate of caesarean section in the oxytocin group (19.1% versus 13.7%, RR 1.37, 95% CI 1.08 to 1.74).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Intravenous oxytocin alone versus intracervical prostaglandins
Outcome: Uterine hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Alfirevic, Z., et al. Year Published: 2009 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of oxytocin alone for third trimester cervical ripening and induction of labour in comparison with other methods of induction of labour or placebo/no treatment.	**Size:** 2 trials **Inclusion Criteria**: Randomised and quasi-randomised trials comparing intravenous oxytocin with placebo or no treatment, or with prostaglandins (vaginal or intracervical) for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention**: Outcomes (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with FHR changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death (5) serious maternal morbidity or death	**Results:** There was no significant difference in uterine hyperstimulation with FHR changes (RR 2.02, 95% CI 0.38 to 10.75)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Alfirevic, Z., et al. (2009). "Intravenous oxytocin alone for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD003246.

PGE2 versus Placebo

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: PGE2 versus placebo
Outcome: Delivery not achieved in 24 hours (efficacy)

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Boulvain, M., et al. Year Published: 2008 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of intracervical prostaglandins for third trimester cervical ripening or induction of labour compared with placebo/no treatment and with vaginal prostaglandins (except misoprostol).	**Size:** 4 RCTs **Inclusion Criteria**: Clinical trials comparing intracervical prostaglandins used for third trimester cervical ripening or labour induction with placebo/no treatment or other methods listed above it on a predefined list of labour induction methods (vaginal prostaglandins, except misoprostol).	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	**Results:** A decreased risk with PGE2 (relative risk (RR) 0.61; 95%confidence interval (CI) 0.47 to 0.79).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Gauthier, T., et al. Year Published: 2012 Location: France Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To estimate the impact of obesity on cervical ripening with prostaglandin E2 (PGE2).	**Size:** 95 obese patients were matched according to parity to 190 non-obese patients **Exclusion Criteria**: BMI lower than 20 and between 25 and	**Type:** A retrospective study **Intervention**: Compared the cervical ripening efficiency of prostaglandin on obese patients with a BMI 30 and on	**Results:** Out of 285 patients, 116 (40.7%) experienced failure at the first cervical ripening attempt. There were significantly more cervical ripening failures after an attempt using prostaglandin	**Study Limitations:** ☒ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria

		30, multiple pregnancies, in-utero fetal death, medical terminations of pregnancy, cervical ripening before 37 weeks of gestation, multiple previous caesarean deliveries, non-cephalic presentations, pathologic pelvis, maternal contraindication to vaginal delivery, Bishop score 6, and underage patients at ripening time.	normal weight patients with a BMI in between 20 and 25. Cervical ripening with E2 prostaglandin was performed in case of a Bishop score lower than 6. We defined two groups according to the Bishop score. In case of a Bishop score (<3), a 10 mg dinoprostone tampon was used over 12 h. In case of a Bishop score (>4), a 1 mg dinoprostone gel was used over 6 h.	in obese timing until delivery was 1575 + 1153 min (180–6120) and 1272 + 1031 (60–5640) (P = 0.0258), respectively, for the obese and the non-obese patients.	☐ Flawed measurement of both exposure and outcome ☐ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
Boulvain, M., et al. (2008). "Intracervical prostaglandins for induction of labour." Cochrane Database of Systematic Reviews(1): CD006971.
Gauthier, T., et al. (2012). "Obesity and cervical ripening failure risk." Journal of Maternal-Fetal & Neonatal Medicine25(3): 304-307.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Intracervical PGE2 versus placebo
Outcome: Caesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Boulvain, M., et al. Year Published: 2008	To determine the effects of intracervical prostaglandins for	**Size:** 28 trials, 3764 women	**Type:** Systematic Review	**Results:** There was a small, and statistically non-	**Study Limitations:** ☒ None

Location: Journal: *Cochrane Database of Systematic Reviews*	third trimester cervical ripening or induction of labour compared with placebo/no treatment and with vaginal prostaglandins (except misoprostol).	**Inclusion Criteria**: Clinical trials comparing intracervical prostaglandins used for third trimester cervical ripening or labour induction with placebo/no treatment or other methods listed above it on a predefined list of labour induction methods (vaginal prostaglandins, except misoprostol).	**Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	significant, reduction of the risk of caesarean section when PGE2 was used (RR 0.88; 95% CI 0.77 to 1.00)	***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Gauthier, T., et al. Year Published: 2012 Location: France Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To estimate the impact of obesity on cervical ripening with prostaglandin E2 (PGE2).	**Size:** 95 obese patients were matched according to parity to 190 non-obese patients **Exclusion Criteria**: BMI lower than 20 and between 25 and 30, multiple pregnancies, in-utero fetal death, medical terminations of pregnancy, cervical ripening before 37 weeks of gestation, multiple previous caesarean deliveries, non-cephalic presentations, pathologic pelvis, maternal contraindication to vaginal delivery, Bishop score 6, and underage patients at ripening time.	**Type:** A retrospective study **Intervention**: Compared the cervical ripening efficiency of prostaglandin on obese patients with a BMI 30 and on normal weight patients with a BMI in between 20 and 25. Cervical ripening with E2 prostaglandin was performed in case of a Bishop score lower than 6. We defined two groups according to the Bishop score. In case of a Bishop score (<3), a 10 mg dinoprostone tampon was used over 12 h. In case of a Bishop score (>4), a 1 mg dinoprostone gel was used over 6 h.	**Results:** Out of the 70 obese patients who were administered prostaglandin only once, 20 (28.6%) had a caesarean section versus 31 (19.6%) out of the 158 non-obese women (P =0.13). In case of repeat prostaglandin administrations, the rate of caesarean sections was 56.0% (14/25) among obese women section versus 25.0% among non-obese women (8/32). The difference was significant (P = 0.017).	**Study Limitations:** ☒ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☐ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
Boulvain, M., et al. (2008). "Intracervical prostaglandins for induction of labour." Cochrane Database of Systematic Reviews(1): CD006971.
Gauthier, T., et al. (2012). "Obesity and cervical ripening failure risk." Journal of Maternal-Fetal & Neonatal Medicine25(3): 304-307.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical PGE2 versus placebo
Outcome: Hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Boulvain, M., et al. Year Published: 2008 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of intracervical prostaglandins for third trimester cervical ripening or induction of labour compared with placebo/no treatment and with vaginal prostaglandins (except misoprostol).	**Size:** 12 trials, 2296 women **Inclusion Criteria**: Clinical trials comparing intracervical prostaglandins used for third trimester cervical ripening or labour induction with placebo/no treatment or other methods listed above it on a predefined list of labour induction methods (vaginal prostaglandins, except misoprostol).	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	**Results:** The risk of hyperstimulation with FHR changes not significantly increased (RR 1.21; 95% CI 0.72 to 2.05)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Boulvain, M., et al. (2008). "Intracervical prostaglandins for induction of labour." Cochrane Database of Systematic Reviews(1): CD006971.

Intracervical PGE2 versus Intracervical Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical PGE2 versus Intracervical Misoprostol
Outcome: Delivery within 12 h (efficacy)

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chang Yk ., et al. Year Published: 2002 Location: Taiwan Journal: *International journal of Gynaecology and Obstetrics*	To compare the safety and efficacy of misoprostol with PGE(2) for induction of labor by intracervical administration.	**Size:** 86 women **Inclusion Criteria**: Women with a singleton pregnancy at term, cephalic presentation, and a cervical Bishop score of 4 or less. **Exclusion Criteria:** (I) prior uterine surgery; (2) placenta previa; (3) multiple gestations; (4) malpresentation; (5) estimated fetal weight > 4200 g by sonography; and (6) any contraindication to receiving prostaglandins, including	**Type:** RCT **Intervention**: Patients were randomly assigned to either the misoprostol or prostaglandin E2 (PGE2) group Misoprostol was prepared by cutting 200 µg tablets into quarters. The 50 µg tablet was placed in the intracervical canal. Sub-sequent doses of misoprostol were inserted every 4 h until the patient developed adequate uterine contractions. The protocol allowed a maximum of 4 doses (200 µg) of medication.	**Results:** Delivery within 12 h after the first administration occurred more often in the misoprostol group than in the PGE (2) one (85% vs. 56%, P<0.05). The interval from induction to vaginal delivery was significantly shorter in the misoprostol group (480+/-172 min vs. 657+/-436 min, P<0.01)	**Study Limitations:** ☐ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		history of glaucoma, or cardiac disease or asthma.	For the PGE2 groups, a 0.5 mg PGE2 tablet was administered intracervically. If adequate uterine contractions were not obtained after 4 h, the same dose was repeated every 4 h to a maximum of 1.5 mg of PGE2 until adequate labor was achieved.		

References:
Chang Y., et al. (2014). "Intracervical misoprostol and prostaglandin E2 for labor induction." International journal of gynaecology and obstetrics 80(1): 23-28.

Question 2: In pharmacological-based methods for cervical ripening, what is the optimal route and dosing, and combination of?

Vaginal Misoprostol vs Oral Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal misoprostol versus oral misoprostol
Outcome: Delivery not achieved in 24 h

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations

Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 8 trials (771 vaginal misoprostol, 650 oral misoprostol) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Published RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Vaginal misoprostol showed a significant difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared oral misoprostol (RR 0.44, 95% CI 0.33-0.58) P=0.26 I^2=35%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Shetty A , et al. Year Published: 2003 Location: United Kingdom Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare the efficacy of vaginal misoprostol (**25 microg) to oral misoprostol (100 microg)** in labor induction at term.	**Size:** 234 women **Inclusion Criteria**: Singleton pregnancy in cephalic presentation at a gestation of 37 weeks or more, with a medical or obstetric indication for induction, an unfavorable cervical score (modified Bishop's score of less than 8), and intact membranes **Exclusion Criteria**: previous cesarean section (CS), known hypersensitivity to prostaglandins, or a parity over 5.	**Type:** RCT **Intervention**: Women at term were randomly assigned to receive 100 microg of oral misoprostol or 25 microg vaginal misoprostol after random allocation. This could be repeated every 4 h to a maximum of five doses. The number delivering vaginally within 24 h of the induction was the main outcome measure.	**Results:** Of those who delivered vaginally (74.5% in the oral group vs. 72% in the vaginal group), significantly fewer women delivered within 24 h of induction in the oral group (42.1% vs. 72.2%, RR 0.6, 95% CI 0.4-0.9), with more women receiving more than one dose (45.7% vs. 16.7%, RR 2.7, 95% CI 1.2-6.0). More women in the oral group received oxytocin (68.6% vs. 44%, RR 1.6, 95% CI 1.1-2.2), and the induction to delivery interval was shorter in the vaginal group, although this was not statistically significant [28.9 h (SD 20.2) vs. 20.6 h (SD 16.1),	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

				mean difference - 8.3 h, 95% CI - 16.8 to 0.2].	
Author: Cheng et al. Year Published: 2008 Location: Taiwan Journal: *obstetrics and gynecology*	To compare the efficacy and safety of titrated oral misoprostol and vaginal misoprostol for labor induction.	**Size:** 204 women **Inclusion Criteria**: Women between 34 and 42 weeks of gestation with an unfavorable cervix (Bishop score less than or equal to 6) and an indication for labor induction **Exclusion Criteria**: nonreassuring fetal heart rate pattern; parity more than five; any contra indication to labor and/or vaginal delivery; uterine scar; suspected placental abruption with abnormal FHR pattern; vaginal bleeding; cervical dilatation greater than or equal to 4 cm; uterine contractions greater than or equal to three in 10 minutes; significant maternal cardiac, renal, or hepatic disease; and hypersensitivity to misoprostol or prostaglandin analogues	**Type:** RCT **Intervention**: **The titrated oral misoprostol group received a basal unit of 20 mL misoprostol solution (1 mcg/mL) every 1 hour for four doses and then were titrated against individual uterine response. The vaginal group received 25 mcg every 4 hours until attaining a more favorable cervix.** Vaginal delivery within 12 hours was the primary outcome. The data were analyzed by intention-to-treat.	**Results:** Completed vaginal delivery occurred within 12 hours in 75 (74.3%) women in the titrated oral group and 27 (25.5%) women in the vaginal group (relative risk [RR] 8.44, 95% confidence interval [CI] 4.52-15.76). Vaginal delivery in 24 h 95 (94.1) Oral and 57 vaginal (53.8) P <0.01 RR 13.61 (5.49–33.78)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Shetty A, et al. (2003) "Oral misoprostol (100 microg) versus vaginal misoprostol (25 microg) in term labor induction: a randomized comparison." Acta Obstetricia et Gynecologica Scandinavica 82(12): 1103-1106.
Cheng S, et al. (2008) "Titrated oral compared with vaginal misoprostol for labor induction: a randomized controlled trial." Obstetrics and Gynecology 111(1): 119-125.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal misoprostol versus oral misoprostol
Outcome: Induction to delivery timing

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Shetty A, et al. Year Published: 2003 Location: United Kingdom Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare the efficacy of vaginal misoprostol (**25 microg) to oral misoprostol (100 microg)** in labor induction at term.	**Size:** 234 women **Inclusion Criteria**: Singleton pregnancy in cephalic presentation at a gestation of 37 weeks or more, with a medical or obstetric indication for induction, an unfavorable cervical score (modified Bishop's score of less than 8), and intact membranes **Exclusion Criteria**: Previous cesarean section (CS), known hypersensitivity to prostaglandins, or a parity over 5.	**Type:** RCT **Intervention**: Women at term were randomly assigned to receive 100 microg of oral misoprostol or 25 microg vaginal misoprostol after random allocation. This could be repeated every 4 h to a maximum of five doses. The number delivering vaginally within 24 h of the induction was the main outcome measure.	**Results:** Of those who delivered vaginally (74.5% in the oral group vs. 72% in the vaginal group), significantly fewer women delivered within 24 h of induction in the oral group (42.1% vs. 72.2%, RR 0.6, 95% CI 0.4-0.9), with more women receiving more than one dose (45.7% vs. 16.7%, RR 2.7, 95% CI 1.2-6.0). More women in the oral group received oxytocin (68.6% vs. 44%, RR 1.6, 95% CI 1.1-2.2), and **the induction to delivery interval was shorter in the vaginal group, although this was not statistically significant [28.9 h (SD 20.2) vs. 20.6 h (SD 16.1),**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

				mean difference - 8.3 h, 95% CI - 16.8 to 0.2].	
Author: Komala K., et al. Year Published: 2013 Location: India Journal: *Journal of clinical and diagnostic research*	To **compare 50mug of oral misoprostol versus 25mug of intravaginal** misoprostol for induction of labour at term and maternal, foetal outcomes.	**Size:** 200 women **Inclusion Criteria**: Singleton pregnancies with vertex presentation, gravida (1 to 4), clinically adequate pelvis, Bishop's score of less than six, pregnancy induced hypertension, pre-eclampsia, antepartum, eclampsia, prolonged pregnancy, oligohydramnios, and premature rupture of membranes. **Exclusion Criteria**: Patients with severe systemic illnesses or contraindication to vaginal delivery or induction	**Type:** RCT **Intervention**: Women who were at term, with indication for induction of labour were randomly assigned to receive misoprostol 50mug or 25mug intravaginal, every 4-6 hours, for a maximum of 5 doses. In either group, pregnant females with inadequate uterine contractions despite being given maximum 5 doses of misoprostol, were augmented using oxytocin. The primary outcome measure was time-interval from induction to vaginal delivery and vaginal delivery rate within 24 hours.	**Results:** The median induction to vaginal delivery time in oral group (12.92h) and vaginal group (14.04 h) was not significant.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline
Author: Hall R., et al. Year Published: 2002 Location: USA Journal: *Obstetrics and Gynecology*	To compare the safety and effectiveness of vaginal with oral misoprostol for induction of labor.	**Size:** 107 women **Inclusion Criteria**: indications for induction and a single live fetus older than 37 weeks' gestation in cephalic presentation and no contraindication to vaginal delivery. **Exclusion Criteria**: Patients with previ-ous uterine surgery, known prostaglandin hypersensitivity, 3 or more contractions/10 minutes, no reassuring fetal heart tracings,	**Type:** RCT **Intervention**: Women with clinical indication for induction were randomly assigned to receive oral or vaginal misoprostol. **Doses of 100 microg of oral or 25 microg of vaginal misoprostol** were given every 3-4 hours. If cervical ripening or active labor did not occur, repeated doses of oral (100-200 microg) or vaginal (25-50	**Results:** Delivery time was similar for the vaginal and oral arms (1074 +/- 488 minutes versus 930 +/- 454 minutes, P =.11)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

		and those with vaginal birth contraindications were excluded from participation.	microg) were given until labor was established.		
Author: Fisher Sa., et al. Year Published: 2002 Location: Canada Journal: *American journal of obstetrics and gynecology*	To determine the efficacy of **oral misoprostol (50 microg) administered every 3 hours compared to vaginal misoprostol (50 microg)** administered every 6 hours for induction of labor.	**Size:** 126 women **Inclusion Criteria**: All women who required induction **Exclusion Criteria**: Oligohydramnios intrauterine growth restriction, abruptio placenta, premature rupture of the membranes, previous uterine scar, prior PG use for cervical ripening/labor induction, and any contraindication to vaginal delivery	**Type:** RCT **Intervention**: Women received misoprostol (50 microg) either orally every 3 hours or vaginally every 6 hours for induction of labor. Outcomes included time from induction to delivery, oxytocin augmentation, incidence of hyperstimulation and tachysystole, mode of delivery, and neonatal outcomes.	**Results:** Median time to delivery was shorter in those women who were receiving vaginal misoprostol (vaginal 14.3 hours vs oral 23.1 hours; P =.0004) and more women in the oral group required oxytocin augmentation of labor (73% vs 42%) (RR, 1.98; 95% CI, 1.29 to 3.06).)	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Colon I., et al. Year Published: 2004 Location: USA Journal: *American journal of obstetrics and gynecology*	The purpose of this study was to compare the efficacy and safety of stepwise oral misoprostol vs. vaginal misoprostol for cervical ripening before induction of labor.	**Size:** 204 women **Inclusion Criteria**: Women between 32 to 42 weeks of gestation with an unfavorable cervix (Bishop score < or = 6) and an indication for labor induction. **Exclusion Criteria**: Nonreassuring fetal heart rate pattern, any contraindication to labor and/or vaginal delivery, uterine scar, suspected placental abruption with abnormal FHR pattern, vaginal bleeding, significant maternal cardiac, renal or hepatic disease, maternal glaucoma, or hypersensitivity to misoprostol or prostaglandin analogs.	**Type:** RCT **Intervention**: **Oral misoprostol (50 microg) administered every 3 hours compared to vaginal misoprostol (50 microg)** The primary outcome was the interval from first misoprostol dose to delivery. Patient satisfaction and side effects were assessed by surveys completed after delivery.	**Results:** There was no difference in the average interval from the first dose of misoprostol to delivery in the oral (21.1 + 7.9 hrs) and vaginal (21.5 + 11.0 hrs, P = NS) misoprostol groups.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

References:
Shetty A, et al. (2003) "Oral misoprostol (100 microg) versus vaginal misoprostol (25 microg) in term labor induction: a randomized comparison." Acta Obstetricia et Gynecologica Scandinavica 82(12): 1103-1106.
Komala K.,et al. (2013) . "Comparative study of oral and vaginal misoprostol for induction of labour, maternal and foetal outcome." Journal of clinical and diagnostic research 7(12): 2866-2869.
Hall R, et al. (2002) "Oral versus vaginal misoprostol for labor induction." Obstetrics and Gynecology 99(6): 1044-1048.
Fisher S. et al. (2002) . "Oral versus vaginal misoprostol for induction of labor: a double-blind randomized controlled trial." American journal of obstetrics and gynecology 185(4): 906-910.
Colon I, C. et al. (2004) "Prospective randomized clinical trial of inpatient cervical ripening with stepwise oral misoprostol vs vaginal misoprostol." American journal of obstetrics and gynecology 192(3): 747-752.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Vaginal misoprostol versus oral misoprostol
Outcome: Uterine hyperstimulation with or without FHR changes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 7 trials (771 vaginal misoprostol, 650 oral misoprostol) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within	**Results:** Compared with vaginal misoprostol, oral misoprostol revealed a reduction in uterine hyperstimulation with FHR changes (RR 0.44, 95% CI 0.23-0.88) P=0.97 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Shetty A , et al. Year Published: 2003 Location: United Kingdom Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare the efficacy of vaginal misoprostol (25 microg) to oral misoprostol (100 microg) in labor induction at term.	**Size:** 234 women **Inclusion Criteria**: Singleton pregnancy in cephalic presentation at a gestation of 37 weeks or more, with a medical or obstetric indication for induction, an unfavorable cervical score (modified Bishop's score of less than 8), and intact membranes. **Exclusion Criteria**: Previous cesarean section (CS), known hypersensitivity to prostaglandins, or a parity over 5.	**Type:** RCT **Intervention**: Women at term were randomly assigned to receive 100 microg of oral misoprostol or 25 microg vaginal misoprostol after random allocation. This could be repeated every 4 h to a maximum of five doses. The number delivering vaginally within 24 h of the induction was the main outcome measure.	**Results:** In the oral group, 1 woman had tachysystole with fetal heart changes 8 h after a single dose of oral misoprostol.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Komala K., et al. Year Published: 2013 Location: India Journal: *Journal of clinical and diagnostic research*	To **compare 50mug of oral misoprostol versus 25mug of intravaginal** misoprostol for induction of labour at term and maternal, foetal outcomes.	**Size:** 200 women **Inclusion Criteria**: Singleton pregnancies with vertex presentation, gravida (1 to 4), clinically adequate pelvis, Bishop's score of less than six, pregnancy induced hypertension, pre-eclampsia, antepartum, eclampsia, prolonged pregnancy, oligohydramnios, and	**Type:** RCT **Intervention**: Women who were at term, with indication for induction of labour were randomly assigned to receive misoprostol 50mug or 25mug intravaginal, every 4-6 hours, for a maximum of 5 doses. In either group, pregnant females with inadequate uterine contractions despite being given maximum 5 doses	**Results:** The rate of hyperstimulation in vaginal group was only 1 %, where caesarean section was done immediately and it was nil in oral group.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		premature rupture of membranes. **Exclusion Criteria**: Patients with severe systemic illnesses or contraindication to vaginal delivery or induction	of misoprostol, were augmented using oxytocin. The primary outcome measure was time-interval from induction to vaginal delivery and vaginal delivery rate within 24 hours.		☒ Difference in important prognostic factors at baseline
Author: Hall R., et al. Year Published: 2002 Location: USA Journal: *Obstetrics and Gynecology*	To compare the safety and effectiveness of vaginal with oral misoprostol for induction of labor.	**Size:** 107 women **Inclusion Criteria**: Indications for induction and a single live fetus older than 37 weeks' gestation in cephalic presentation and no contraindication to vaginal delivery. **Exclusion Criteria**: Patients with previ-ous uterine surgery, known prostaglandin hypersensitivity, 3 or more contractions/10 minutes, no reassuring fetal heart tracings, and those with vaginal birth contraindications were excluded from participation	**Type:** RCT **Intervention**: Women with clinical indication for induction were randomly assigned to receive oral or vaginal misoprostol. **Doses of 100 microg of oral or 25 microg of vaginal misoprostol** were given every 3-4 hours. If cervical ripening or active labor did not occur, repeated doses of oral (100-200 microg) or vaginal (25-50 microg) were given until labor was established.	**Results:** Tachysystole was similar in both groups.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline
Author: Fisher Sa., et al. Year Published: 2002 Location: Canada Journal: *American journal of obstetrics and gynecology*	To determine the efficacy of **oral misoprostol (50 microg) administered every 3 hours compared to vaginal misoprostol (50 microg)** administered every 6 hours for induction of labor.	**Size:** 126 women **Inclusion Criteria**: All women who required induction. **Exclusion Criteria**: Oligohydramnios intrauterine growth restriction, abruptio placenta, premature rupture of the membranes, previous uterine scar, prior PG use for cervical ripening/labor induction, and any	**Type:** RCT **Intervention**: Women received misoprostol (50 microg) either orally every 3 hours or vaginally every 6 hours for induction of labor. Outcomes included time from induction to delivery, oxytocin augmentation, incidence of hyperstimulation and tachysystole, mode of delivery, and neonatal outcomes.	**Results:** The incidence of hyperstimulation was similar between the groups, but there was an increased incidence of tachysystole in the vaginal group (26.5% vs 9.7%)(RR, 2.74; 95% CI, 1.16 to 6.51).	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		contraindication to vaginal delivery.			
Author: Colon I., et al. Year Published: 2004 Location: USA Journal: *American journal of obstetrics and gynecology*	The purpose of this study was to compare the efficacy and safety of stepwise oral misoprostol vs vaginal misoprostol for cervical ripening before induction of labor.	**Size:** 204 women **Inclusion Criteria**: Women between 32 to 42 weeks of gestation with an unfavorable cervix (Bishop score < or = 6) and an indication for labor induction. **Exclusion Criteria**: Nonreassuring fetal heart rate pattern, any contraindication to labor and/or vaginal delivery, uterine scar, suspected placental abruption with abnormal FHR pattern, vaginal bleeding, significant maternal cardiac, renal or hepatic disease, maternal glaucoma, or hypersensitivity to misoprostol or prostaglandin analogs.	**Type:** RCT **Intervention**: **The oral misoprostol group received 50 microg initially followed by 100 microg in each subsequent dose. The vaginal group received 25 microg in each dose.** The primary outcome was the interval from first misoprostol dose to delivery. Patient satisfaction and side effects were assessed by surveys completed after delivery.	**Results:** The incidence of hyperstimulation in the oral group was 2.2% vs 5.4% in the vaginal group, P = NS.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline
Author: Cheng et al. Year Published: 2008 Location: Taiwan Journal: *obstetrics and gynecology*	To compare the efficacy and safety of titrated oral misoprostol and vaginal misoprostol for labor induction.	**Size:** 204 women **Inclusion Criteria**: Women between 34 and 42 weeks of gestation with an unfavorable cervix (Bishop score less than or equal to 6) and an indication for labor induction. **Exclusion Criteria**: Nonreassuring fetal heart rate pattern; parity more than five; any contra indication to labor and/or vaginal delivery; uterine scar; suspected placental abruption with abnormal FHR pattern; vaginal bleeding; cervical dilatation greater than or equal to 4 cm; uterine contractions greater than or	**Type:** RCT **Intervention**: **The titrated oral misoprostol group received a basal unit of 20 mL misoprostol solution (1 mcg/mL) every 1 hour for four doses and then were titrated against individual uterine response. The vaginal group received 25 mcg every 4 hours until attaining a more favorable cervix.** Vaginal delivery within 12 hours was the primary outcome. The data were analyzed by intention-to-treat.	**Results:** The incidence of hyperstimulation was 0.0% in the titrated oral group compared with 11.3% in the vaginal group (RR 0.08, 95% CI 0.01-0.61). There were no significant differences in the occurrence of tachysystole, hypertonus, and nonreassuring FHR between the two groups. Tachysystole developed in 7 (6.9%) women in the titrated oral group and 16 (15.1%) women in the vaginal group (RR 0.42, 95% CI 0.16 –1.07)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

		equal to three in 10 minutes; significant maternal cardiac, renal, or hepatic disease; and hypersensitivity to misoprostol or prostaglandin analogues.			

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Shetty A, et al. (2003) "Oral misoprostol (100 microg) versus vaginal misoprostol (25 microg) in term labor induction: a randomized comparison." Acta Obstetricia et Gynecologica Scandinavica 82(12): 1103-1106.
Komala K.,et al. (2013) . "Comparative study of oral and vaginal misoprostol for induction of labour, maternal and foetal outcome." Journal of clinical and diagnostic research 7(12): 2866-2869.
Hall R, et al. (2002) "Oral versus vaginal misoprostol for labor induction." Obstetrics and Gynecology 99(6): 1044-1048.
Fisher S. et al. (2002) . "Oral versus vaginal misoprostol for induction of labor: a double-blind randomized controlled trial." American journal of obstetrics and gynecology 185(4): 906-910.
Colon I, C. et al. (2004) "Prospective randomized clinical trial of inpatient cervical ripening with stepwise oral misoprostol vs vaginal misoprostol." American journal of obstetrics and gynecology 192(3): 747-752.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Vaginal misoprostol versus oral misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 9 trials (930 vaginal misoprostol, 350 oral misoprostol)	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter,	**Results:** There was no difference in between oral and vaginal misoprostol for the reduction of cesarean delivery	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question

Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*		**Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	(RR 0.91, 95% CI 0.74-1.11) P=0.99 I^2=0%	☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Shetty A , et al. Year Published: 2003 Location: United Kingdom Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare the efficacy of vaginal misoprostol (25 microg) to oral misoprostol (100 microg) in labor induction at term.	**Size:** 234 women **Inclusion Criteria**: Singleton pregnancy in cephalic presentation at a gestation of 37 weeks or more, with a medical or obstetric indication for induction, an unfavorable cervical score (modified Bishop's score of less than 8), and intact membranes. **Exclusion Criteria**: Previous cesarean section (CS), known hypersensitivity to prostaglandins, or a parity over 5.	**Type:** RCT **Intervention**: Women at term were randomly assigned to receive 100 microg of oral misoprostol or 25 microg vaginal misoprostol after random allocation. This could be repeated every 4 h to a maximum of five doses. The number delivering vaginally within 24 h of the induction was the main outcome measure.	**Results:** The CS rates between the two groups were similar.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Komala K., et al. Year Published: 2013 Location: India Journal: *Journal of clinical and diagnostic research*	To **compare 50mug of oral misoprostol versus 25mug of intravaginal** misoprostol for induction of labour at term and maternal, foetal outcomes.	**Size:** 200 women **Inclusion Criteria**: Singleton pregnancies with vertex presentation, gravida (1 to 4), clinically adequate pelvis, Bishop's score of less than six,	**Type:** RCT **Intervention**: Women who were at term, with indication for induction of labour were randomly assigned to receive misoprostol 50mug or 25mug	**Results:** In this study, caesarean rate in oral group was 6% and in vaginal group, it was 14%, not significant. Oral misoprostol resulted in more number of vaginal	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Unclear allocation concealment

		pregnancy induced hypertension, pre-eclampsia, antepartum, eclampsia, prolonged pregnancy, oligohydramnios, and premature rupture of membranes. **Exclusion Criteria**: Patients with severe systemic illnesses or contraindication to vaginal delivery or induction .	intravaginal, every 4-6 hours, for a maximum of 5 doses. In either group, pregnant females with inadequate uterine contractions despite being given maximum 5 doses of misoprostol, were augmented using oxytocin. The primary outcome measure was time-interval from induction to vaginal delivery and vaginal delivery rate within 24 hours.	deliveries as compared to vaginal misoprostol (94% as compared to 86%), which was not significant.	☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline
Author: Hall R., et al. Year Published: 2002 Location: USA Journal: *Obstetrics and Gynecology*	To compare the safety and effectiveness of vaginal with oral misoprostol for induction of labor.	**Size:** 107 women **Inclusion Criteria**: Indications for induction and a single live fetus older than 37 weeks' gestation in cephalic presentation and no contraindication to vaginal delivery. **Exclusion Criteria**: Patients with previ-ous uterine surgery, known prostaglandin hypersensitivity, 3 or more contractions/10 minutes, no reassuring fetal heart tracings, and those with vaginal birth contraindications were excluded from participation.	**Type:** RCT **Intervention**: Women with clinical indication for induction were randomly assigned to receive oral or vaginal misoprostol. **Doses of 100 microg of oral or 25 microg of vaginal misoprostol** were given every 3-4 hours. If cervical ripening or active labor did not occur, repeated doses of oral (100-200 microg) or vaginal (25-50 microg) were given until labor was established.	**Results:** The cesarean delivery rate for the vaginal and oral arms. (17% versus 15%, P = 0. 72)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline
Author: Fisher Sa., et al. Year Published: 2002 Location: Canada Journal: *American journal of obstetrics and gynecology*	To determine the efficacy of **oral misoprostol (50 microg) administered every 3 hours compared to vaginal misoprostol (50 microg)** administered every 6 hours for induction of labor.	**Size:** 126 women **Inclusion Criteria**: All women who required induction. **Exclusion Criteria**: oligohydramnios intrauterine growth restriction, abruptio	**Type:** RCT **Intervention**: Women received misoprostol (50 microg) either orally every 3 hours or vaginally every 6 hours for induction of labor. Outcomes included time from induction to delivery, oxytocin augmentation, incidence of	**Results:** Modes of delivery were similar between the 2 groups. 14 women in the vaginal group (21.9%) and 12 women in the oral group (19.4%) delivered by cesarean section	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		placenta, premature rupture of the membranes, previous uterine scar, prior PG use for cervical ripening/labor induction, and any contraindication to vaginal delivery.	hyperstimulation and tachysystole, mode of delivery, and neonatal outcomes.	(RR, 1.13; 95% CI, 0.57 to 2.25).	☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Colon I., et al. Year Published: 2004 Location: USA Journal: *American journal of obstetrics and gynecology*	The purpose of this study was to compare the efficacy and safety of stepwise oral misoprostol vs vaginal misoprostol for cervical ripening before induction of labor.	**Size:** 204 women **Inclusion Criteria**: Women between 32 to 42 weeks of gestation with an unfavorable cervix (Bishop score < or = 6) and an indication for labor induction. **Exclusion Criteria**: Nonreassuring fetal heart rate pattern, any contraindication to labor and/or vaginal delivery, uterine scar, suspected placental abruption with abnormal FHR pattern, vaginal bleeding, significant maternal cardiac, renal or hepatic disease, maternal glaucoma, or hypersensitivity to misoprostol or prostaglandin analogs.	**Type:** RCT **Intervention**: **The oral misoprostol group received 50 microg initially followed by 100 microg in each subsequent dose. The vaginal group received 25 microg in each dose.** The primary outcome was the interval from first misoprostol dose to delivery. Patient satisfaction and side effects were assessed by surveys completed after delivery.	**Results:** Eighteen patients in the oral group (19.4%) and 36 (32.4%) in the vaginal group underwent cesarean section (P < .05) This difference was attributed to better tolerance of more doses of misoprostol by the women in the oral group.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline
Author: Cheng et al. Year Published: 2008 Location: Taiwan Journal: *obstetrics and gynecology*	To compare the efficacy and safety of titrated oral misoprostol and vaginal misoprostol for labor induction.	**Size:** 204 women **Inclusion Criteria**: Women between 34 and 42 weeks of gestation with an unfavorable cervix (Bishop score less than or equal to 6) and an indication for labor induction. **Exclusion Criteria**: Nonreassuring fetal heart rate pattern; parity more than five; any contra indication to labor and/or vaginal delivery; uterine scar; suspected placental	**Type:** RCT **Intervention**: **The titrated oral misoprostol group received a basal unit of 20 mL misoprostol solution (1 mcg/mL) every 1 hour for four doses and then were titrated against individual uterine response. The vaginal group received 25 mcg every 4 hours until attaining a more favorable cervix.** Vaginal delivery within 12 hours was the primary outcome. The data	**Results:** The mode of delivery differed significantly between the two groups. Eighteen (17.0%) patients in the vaginal group underwent cesarean delivery compared with only four (4.0%) patients in the titrated oral group (RR 0.20, 95% CI 0.07– 0.62)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

		abruption with abnormal FHR pattern; vaginal bleeding; cervical dilatation greater than or equal to 4 cm; uterine contractions greater than or equal to three in 10 minutes; significant maternal cardiac, renal, or hepatic disease; and hypersensitivity to misoprostol or prostaglandin analogues.	were analyzed by intention-to-treat.		

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Shetty A, et al. (2003) "Oral misoprostol (100 microg) versus vaginal misoprostol (25 microg) in term labor induction: a randomized comparison." Acta Obstetricia et Gynecologica Scandinavica 82(12): 1103-1106.
Komala K.,et al. (2013) . "Comparative study of oral and vaginal misoprostol for induction of labour, maternal and foetal outcome." Journal of clinical and diagnostic research 7(12): 2866-2869.
Hall R, et al. (2002) "Oral versus vaginal misoprostol for labor induction." Obstetrics and Gynecology 99(6): 1044-1048.
Fisher S. et al. (2002) . "Oral versus vaginal misoprostol for induction of labor: a double-blind randomized controlled trial." American journal of obstetrics and gynecology 185(4): 906-910.
Colon I, C. et al. (2004) "Prospective randomized clinical trial of inpatient cervical ripening with stepwise oral misoprostol vs vaginal misoprostol." American journal of obstetrics and gynecology 192(3): 747-752.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal misoprostol versus oral misoprostol
Outcome: Chorioamnionitis

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Hall R., et al. Year Published: 2002 Location: USA Journal: *Obstetrics and Gynecology*	To compare the safety and effectiveness of vaginal with oral misoprostol for induction of labor.	**Size:** 107 women **Inclusion Criteria**: Indications for induction and a single live fetus older than 37 weeks' gestation in cephalic presentation and no contraindication to vaginal delivery. **Exclusion Criteria**: Patients with previous uterine surgery, known prostaglandin hypersensitivity, 3 or more contractions/10 minutes, no reassuring fetal heart tracings, and those with vaginal birth contraindications were excluded from participation.	**Type:** RCT **Intervention**: Women with clinical indication for induction were randomly assigned to receive oral or vaginal misoprostol. **Doses of 100 microg of oral or 25 microg of vaginal misoprostol** were given every 3-4 hours. If cervical ripening or active labor did not occur, repeated doses of oral (100-200 microg) or vaginal (25-50 microg) were given until labor was established.	**Results:** The chorio rate for the vaginal and oral arms was similar. (8% versus 5%, P = 0. 66)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

References:
Hall R, et al. (2002) "Oral versus vaginal misoprostol for labor induction." Obstetrics and Gynecology 99(6): 1044-1048.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal misoprostol versus oral misoprostol
Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)		
☐ High ☐ Moderate ☐ Low ☒ Very Low		
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

		☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*			
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Colon I., et al. Year Published: 2004 Location: USA Journal: *American journal of obstetrics and gynecology*	The purpose of this study was to compare the efficacy and safety of stepwise oral misoprostol vs vaginal misoprostol for cervical ripening before induction of labor.	**Size:** 204 women **Inclusion Criteria**: Women between 32 to 42 weeks of gestation with an unfavorable cervix (Bishop score < or = 6) and an indication for labor induction **Exclusion Criteria**: Nonreassuring fetal heart rate pattern, any contraindication to labor and/or vaginal delivery, uterine scar, suspected placental abruption with abnormal FHR pattern, vaginal bleeding, significant maternal cardiac, renal or hepatic disease, maternal glaucoma, or hypersensitivity to misoprostol or prostaglandin analogs.	**Type:** RCT **Intervention**: **The oral misoprostol group received 50 microg initially followed by 100 microg in each subsequent dose. The vaginal group received 25 microg in each dose.** The primary outcome was the interval from first misoprostol dose to delivery. Patient satisfaction and side effects were assessed by surveys completed after delivery.	**Results:** Fourteen percent of women in the vaginal group versus 7.5% in the oral group were dissatisfied with the use of misoprostol (P = NS).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☒ Difference in important prognostic factors at baseline

References:
Colon I, C. et al. (2004) "Prospective randomized clinical trial of inpatient cervical ripening with stepwise oral misoprostol vs vaginal misoprostol." American journal of obstetrics and gynecology 192(3): 747-752

Vaginal Dinoprostone versus Intracervical Dinoprostone

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal dinoprostone versus intracervical dinoprostone
Outcome: Delivery not achieved in 24 h

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 8 trials (1322 vaginal dinoprostone, 622 intracervical dinoprostone) **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Vaginal dinoprostone showed a difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared intracervical dinoprostone. (RR 0.69, 95% CI 0.53-0.89) P=0.62 I^2=31%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Zeng, X., et al. Year Published: 2015 Location: China Journal: *Drug Discoveries & Therapeutics*	To evaluate the efficiency of dinoprostone insert, compared with dinoprostone gel, for cervical ripening and induction of labor in women at term.	**Size:** 15 RCTs involving 1779 women **Inclusion Criteria**: Full term pregnancy (not less than 37 weeks of gestation), with intact membrane and unfavorable cervix. Simultaneously, their Bishop's score was less than 7. Dinoprostone insert and gel were given separately to women in treatment group and matched group. **Exclusion Criteria:** Studies were surely ineligible if there was no information provided on any of the outcomes of focus, if data were not reported regarding the intention to deal with it or if more than 20% of women in either group were lost to follow up.	**Type:** Systematic Review **Intervention:** The two reviewers extracted data for outcomes independently. The primary outcomes were the rates of vaginal delivery (VD) and caesarean section (CS). While VD within 24 h, artificial assisted vaginal delivery, as well as reasons for CS, such as fetal distress, abnormal labor and failure of induction were considered as the secondary outcomes. A subgroup analysis for nulliparous and multiparous women was also conducted. Usage of oxytocin, hospital stay and uterine hyperstimulation were analyzed if data were provided. Baseline data were depicted explicitly if possible.	**Results:** Dinoprostone insert could greatly contribute to vaginal delivery (VD) within 24 h compared with dinoprostone gel (OR = 2.35, 95% CI = 1.34- 4.13)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Zeng, X., et al. (2015). "Efficiency of dinoprostone insert for cervical ripening and induction of labor in women of full-term pregnancy compared with dinoprostone gel: A meta-analysis." Drug Discoveries & Therapeutics 9(3): 165-172.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal dinoprostone versus intracervical dinoprostone
Outcome: Uterine hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 7 trials, 4358 women **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters, communications, or supplements.	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.	**Results:** Intracervical dinoprostone had a lower risk of uterine hyperstimulation with FHR changes than vaginal dinoprostone (RR 0.46, 95% CI 0.25-0.87) P=0.61 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal dinoprostone versus intracervical dinoprostone
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: China Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 20 trials; 7802 women **Inclusion Criteria**: Women with an unfavourable cervix, and with intact membranes. **Exclusion Criteria**: Women whose pregnancies were not more than 28 weeks of gestational age; non-cephalic presentations; multiple preg-nancies; and women with previous caesarean sections. Pub-lished RCTs that studied combination therapies and those that reported non-relevant outcomes were also excluded, as were conference papers, abstracts, letters,	**Type:** Systematic Review **Intervention**: The interventions included in this review were Foley catheter, vaginal misoprostol, oral misoprostol, vaginal dinoprostone, and intracervical dinoprostone. The outcomes focused on were failure to achieve vaginal delivery within 24 hours, uterine hyper stimulation with fetal heart rate (FHR) changes, and caesarean section. Hyper stimulation with FHR changes was defined as exces-sive uterine activity (tachysystole or hypersystole) with a non-	**Results:** There was no difference in between intracervical and vaginal dinoprostone for the reduction of cesarean delivery (RR 0.94, 95% CI 0.81-1.10) P=0.46 I^2=0%	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		communications, or supplements.	reassuring FHR pattern, including tachycardia, persis-tent decelerations, and decreased short-term variability.		
Author: Zeng, X., et al. Year Published: 2015 Location: China Journal: *Drug Discoveries & Therapeutics*	To evaluate the efficiency of dinoprostone insert, compared with dinoprostone gel, for cervical ripening and induction of labor in women at term.	**Size:** 15 RCTs involving 1779 women. **Inclusion Criteria**: Full term pregnancy (not less than 37 weeks of gestation), with intact membrane and unfavorable cervix. Simultaneously, their Bishop's score was less than 7. Dinoprostone insert and gel were given separately to women in treatment group and matched group. **Exclusion Criteria:** Studies were surely ineligible if there was no information provided on any of the outcomes of focus, if data were not reported regarding the intention to deal with it or if more than 20% of women in either group were lost to follow up.	**Type:** Systematic Review **Intervention:** The two reviewers extracted data for outcomes independently. The primary outcomes were the rates of vaginal delivery (VD) and caesarean section (CS). While VD within 24 h, artificial assisted vaginal delivery, as well as reasons for CS, such as fetal distress, abnormal labor and failure of induction were considered as the secondary outcomes. A subgroup analysis for nulliparous and multiparous women was also conducted. Usage of oxytocin, hospital stay and uterine hyperstimulation were analyzed if data were provided. Baseline data were depicted explicitly if possible.	**Results:** In contrast to dinoprostone gel, dinoprostone insert cannot decrease the rate of CS (OR= 0.89; 95% CI = 0.71-1.12)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 123(3): 346-354.
Zeng, X., et al. (2015). "Efficiency of dinoprostone insert for cervical ripening and induction of labor in women of full-term pregnancy compared with dinoprostone gel: A meta-analysis." Drug Discoveries & Therapeutics 9(3): 165-172.

Lower Dose Intracervical PGE2 with Higher Dose PGE2

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Lower dose intracervical PGE2 with higher dose
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Boulvain, M., et al. Year Published: 2008 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of intracervical prostaglandins for third trimester cervical ripening or induction of labour compared with placebo/no treatment and with vaginal prostaglandins (except misoprostol).	**Size:** 2 RCTs **Inclusion Criteria**: Clinical trials comparing intracervical prostaglandins used for third trimester cervical ripening or labour induction with placebo/no treatment or other methods listed above it on a predefined list of labour induction methods (vaginal prostaglandins, except misoprostol).	**Type:** Systematic Review **Intervention**: The primary study outcome for the meta-analysis was vaginal delivery less than 12 hours. Secondary study outcomes evaluated included vaginal delivery less than 24 hours, overall cesarean delivery rate, cesarean delivery for fetal distress, incidence of meconium passage, tachysystole, hypertonus, hyper stimulation syndrome, Chorioamnionitis, endometritis, neonatal intensive care unit admission, and neonatal sepsis (positive blood cultures).	**Results:** The first study, involving 28 women, compared 0.2 mg to 0.5 mg of intracervical PGE2 gel. The trial only reported on caesarean section rates and there was no significant difference between the groups (40% versus 30.8%; RR 1.30, 95% CI 0.47 to 3.62). The second study, involving 84 women, compared 0.25 mg intracervical PGE2 gel administered daily with 0.5mg intracervical PGE2 gel given twice 12 hours apart. caesarean section rates (19% versus 31%; RR 0.62; 95% CI 0.28 to 1.33)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Boulvain, M., et al. (2008). "Intracervical prostaglandins for induction of labour." Cochrane Database of Systematic Reviews(1): CD006971.

Vaginal Dinoprostone Insert versus Repeated Prostaglandin Administration (Gel or Tablet)

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal dinoprostone insert versus repeated prostaglandin administration (gel or tablet)
Outcome: Delivery not achieved in 24 h

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Facchinetti, F., et al. Year Published: 2012 Location: Italy Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To assess the efficacy and safety of the dinoprostone vaginal insert compared to repeated prostaglandin administration (including dinoprostone and misoprostol) in women at term.	**Size:** 7 studies were included (911 patients) **Inclusion Criteria**: (i) data reported separately according to parity (nulliparous and/or multiparous); (ii) women with unfavourable cervix (Bishop <5); (iii) women with intact membranes.	**Type:** Systematic Review **Intervention:** The primary efficacy outcome was caesarean section (CS) rate. The secondary efficacy outcomes were: vaginal delivery, vaginal delivery within 12 or 24h, oxytocin augmentation, instrumental vaginal delivery, induction to delivery interval (expressed in hours), hospitalization length (measured in days). Primary safety outcome was uterine hyperstimulation requiring immediate delivery.	**Results:** Vaginal dinoprostone showed a difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared to repeated prostaglandin administration (gel or tablet) (RR 0.91, 95% CI 0.64-1.30)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Facchinetti, F., et al. (2012). "Pre-induction of labour: comparing dinoprostone vaginal insert to repeated prostaglandin administration: a systematic review and meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 25(10): 1965-1969.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal dinoprostone insert versus repeated prostaglandin administration (gel or tablet)
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Facchinetti, F., et al. Year Published: 2012 Location: Italy Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To assess the efficacy and safety of the dinoprostone vaginal insert compared to repeated prostaglandin administration (including dinoprostone and misoprostol) in women at term.	**Size:** 7 studies were included (911 patients). **Inclusion Criteria**: (i) data reported separately according to parity (nulliparous and/or multiparous); (ii) women with unfavourable cervix (Bishop <5); (iii) women with intact membranes.	**Type:** Systematic Review **Intervention:** The primary efficacy outcome was caesarean section (CS) rate. The secondary efficacy outcomes were: vaginal delivery, vaginal delivery within 12 or 24h, oxytocin augmentation, instrumental vaginal delivery, induction to delivery interval (expressed in hours), hospitalization length (measured in days). Primary	**Results:** The dinoprostone vaginal insert reduces CS rate in nulliparous women of 24% compared to the other ways of administration (RR = 0.76, 95% CI = 0.59, 0.98)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			safety outcome was uterine hyperstimulation requiring immediate delivery.		

References:
Facchinetti, F., et al. (2012). "Pre-induction of labour: comparing dinoprostone vaginal insert to repeated prostaglandin administration: a systematic review and meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 25(10): 1965-1969.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal dinoprostone insert versus repeated prostaglandin administration (gel or tablet)
Outcome: Uterine hyperstimulation

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Facchinetti, F., et al. Year Published: 2012 Location: Italy Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To assess the efficacy and safety of the dinoprostone vaginal insert compared to repeated prostaglandin administration (including dinoprostone and misoprostol) in women at term.	**Size:** 7 studies were included (911 patients) **Inclusion Criteria**: (i) data reported separately according to parity (nulliparous and/or multiparous); (ii) women with unfavourable cervix (Bishop <5); (iii) women with intact membranes.	**Type:** Systematic Review **Intervention:** The primary efficacy outcome was caesarean section (CS) rate. The secondary efficacy outcomes were: vaginal delivery, vaginal delivery within 12 or 24h, oxytocin augmentation, instrumental vaginal delivery, induction to	**Results:** The risk of hyperstimulation is statistically higher in nulliparous women using vaginal insert than the other ways of administration with RR = 2.17, 95% CI = 1.08-4.33.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			delivery interval (expressed in hours), hospitalization length (measured in days). Primary safety outcome was uterine hyperstimulation requiring immediate delivery.		

References:
Facchinetti, F., et al. (2012). "Pre-induction of labour: comparing dinoprostone vaginal insert to repeated prostaglandin administration: a systematic review and meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 25(10): 1965-1969.

Vaginal Misoprostol Dose Response

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravaginal misoprostol dose response
Outcome: Delivery not achieved in 24 h

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: McMaster, K., et al. Year Published: 2015 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	**To compare the efficacy and safety of** of intravaginal misoprostol tablets for the induction of labour and cervical ripening.	**Size:** Thirteen studies (1945 women) **Inclusion Criteria**: All studies included were required to have participants randomly assigned to either the 25- or	**Type:** Systematic Review **Intervention:** The efficacy outcomes assessed were rates of vaginal delivery within 24 hours, delivery within one dose, and oxytocin	**Results: 25 micrograms was less efficacious,** with lower rates of delivery after one dose (RR 0.59; 95% CI 0.39-0.88) and **vaginal delivery within 24 hours (RR 0.88; 95% CI 0.79-0.96),**	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

		50-micrograms group, and to have direct comparisons to evaluate the efficacy and safety of 25- versus 50-microgram doses of vaginally administered misoprostol tablets used for cervical ripening and labour induction.	augmentation, and interval to delivery. The safety outcomes assessed were incidences of tachysystole, hyperstimulation, caesarean delivery, cesarean delivery for non-reassuring fetal heart rate (FHR), operative vaginal delivery, abnormal 5-minute Apgar score, abnormal cord gas values, admission to a neonatal intensive care unit (NICU), and meconium passage.		☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Wing Da., et al Year Published: 2011 Location: USA Journal: *Obstetrics and Gynecology*	To compare three doses of misoprostol vaginal insert for successful labor induction measured by the proportion of vaginal deliveries within 24 hours.	**Size:** 374 women **Inclusion Criteria**: At least 18 years of age, of low parity (three or lower) with singleton pregnancies, and at least 36 0/7 weeks of gestation. They had no conditions requiring urgent delivery. The participants required cervical ripening defined as a baseline modified Bishop score of 4 or lower. **Exclusion Criteria:** active labor; presence of uterine or cervical scar or uterine abnormality; receipt of oxytocin or any cervical ripening or labor inducing agents or a tocolytic drug within 7 days before enrollment; suspected or confirmed cephalopelvic disproportion or fetal malpresentation or both; diagnosed fetal abnormalities; any evidence of fetal compromise, receipt of a nonsteroidal anti-inflammatory drug within 4 hours of study	**Type:** RCT **Intervention:** Women were randomly assigned to receive misoprostol vaginal insert **(MVI) 100 (n=118), MVI 150 (n=125), or MVI 200 (n=131) micrograms**. The insert was removed for onset of active labor or adverse event. The primary outcome was proportion of vaginal deliveries within 24 hours. **The comparison group was MVI 100.** Safety was assessed by comparing rates of cesarean deliveries and adverse events.	**Results: Vaginal delivery within 24 hours was achieved for 63.8%, 66.7%, and 76.0% of participants exposed to MVI 100, MVI 150, and MVI 200, respectively (P=0.54 for MVI 100 compared with MVI 150, and P=0.057 for MVI 100 compared with MVI 200)** 24% of women receiving MVI 200 failed to achieve vaginal delivery within 24 hours compared with 36.3% of those receiving MVI 100 (P=0.057, relative risk [RR] 0.66, 95% confidence interval [CI] 0.42–1.04). For nulliparous women, 67.3% treated with MVI 200 had vaginal delivery within 24 hours compared with 52.4% treated with MVI 100 (P=0.14). Approximately 75% (99/136) of parous individuals delivered vaginally within 24 hours.	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		treatment; ruptured membranes 48 hours or more before the start of treatment or suspected chorioamnionitis; fever higher than 37.5°C; any condition in which vaginal delivery was contraindicated, known or suspected allergy to prostaglandins; or inability to comply with the protocol.		**A significantly higher proportion of MVI 200 participants delivered by any mode within 24 hours (72.5%) compared with 52.14% of MVI 100 participants (P<0.001); this finding was also true for MVI 200 nulliparous and parous women separately as well as for the combined group (P=0.012 and P=0.016, respectively, by parity).**	
Author: Berkley, E., et al. Year Published: 2007 Location: USA Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To assess the efficiency of labor induction using **low dose misoprostol for cervical ripening among nulliparous patients with severe preeclampsia**	**Size:** 145 **Inclusion Criteria**: (1) diagnosis of severe preeclampsia, (2) singleton gestation, (3) nulliparity, and (4) an unfavorable cervix (Bishop score ≤4). **Exclusion Criteria:** Cases in which a cesarean delivery was necessary before labor: fetal malpresentation, placenta previa, active genital herpes, infection, scarred uterus, rapidly worsening maternal condition, non-reassuring fetal heart rate (FHR) pattern before induction of labor, other active medical or obstetrical complications, and the presence of fetal anomalies.	**Type:** Retrospective cohort study **Intervention:** Cases gathered from perinatal database for nulliparous women with severe preeclampsia delivering singleton gestations. Only those cases (N = 145) that were eligible for a trial of labor and **were administered intravaginal misoprostol (25 mcg every 3 to 6 h) for an unfavorable cervix.** Primary outcomes related to the success and timing of vaginal deliveries. Secondary outcomes involved maternal and neonatal morbidity rates.	**Results: Most of those who delivered vaginally did so within 24 h (82 of 95 cases, 86.3%), regardless of gestational age.**	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
McMaster, K., et al. (2015). "Balancing the efficacy and safety of misoprostol: a meta-analysis comparing 25 versus 50 micrograms of intravaginal misoprostol for the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 122(4): 468-476.
Wing Da,et al. (2011). "Misoprostol vaginal insert for successful labor induction: a randomized controlled trial." Obstetrics and Gynecology 117(3): 533-541.
Berkley, E., et al. (2007). "Success rates with low dose misoprostol before induction of labor for nulliparas with severe preeclampsia at various gestational ages." Journal of Maternal-Fetal & Neonatal Medicine 20(11): 825-831.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravaginal misoprostol dose response
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: McMaster, K., et al. Year Published: 2015 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of 25 versus 50 micrograms of intravaginal misoprostol tablets for the induction of labour and cervical ripening.	**Size:** Thirteen studies (1945 women) **Inclusion Criteria:** All studies included were required to have participants randomly assigned to either the 25- or 50-micrograms group, and to have direct comparisons to evaluate the efficacy and safety of 25- versus 50-microgram doses of vaginally administered misoprostol tablets used for cervical ripening and labour induction.	**Type:** Systematic Review **Intervention:** The efficacy outcomes assessed were rates of vaginal delivery within 24 hours, delivery within one dose, and oxytocin augmentation, and interval to delivery. The safety outcomes assessed were incidences of tachysystole, hyperstimulation, caesarean delivery, cesarean delivery for non-reassuring fetal heart rate (FHR), operative vaginal delivery, abnormal 5-minute Apgar score, abnormal cord gas values, admission to a neonatal	**Results:** There was not a significant decrease in caesarean deliveries overall, the authors did note a significant decrease in the rates of caesarean deliveries performed for non-reassuring fetal heart tracings in the 25-micrograms group (RR 0.67; 95% CI 0.52-0.87)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			intensive care unit (NICU), and meconium passage.		
Author: Wing Da., et al Year Published: 2011 Location: USA Journal: *Obstetrics and Gynecology*	To compare three doses of misoprostol vaginal insert for successful labor induction measured by the proportion of vaginal deliveries within 24 hours.	**Size:** 374 women **Inclusion Criteria**: At least 18 years of age, of low parity (three or lower) with singleton pregnancies, and at least 36 0/7 weeks of gestation. They had no conditions requiring urgent delivery. The participants required cervical ripening defined as a baseline modified Bishop score of 4 or lower. **Exclusion Criteria:** Active labor; presence of uterine or cervical scar or uterine abnormality; receipt of oxytocin or any cervical ripening or labor inducing agents or a tocolytic drug within 7 days before enrollment; suspected or confirmed cephalopelvic disproportion or fetal malpresentation or both; diagnosed fetal abnormalities; any evidence of fetal compromise, receipt of a nonsteroidal anti-inflammatory drug within 4 hours of study treatment; ruptured membranes 48 hours or more before the start of treatment or suspected chorioamnionitis; fever higher than 37.5°C; any condition in which vaginal delivery was contraindicated,	**Type:** RCT **Intervention:** Women were randomly assigned to receive misoprostol vaginal insert **(MVI) 100 (n=118), MVI 150 (n=125), or MVI 200 (n=131) micrograms**. The insert was removed for onset of active labor or adverse event. The primary outcome was proportion of vaginal deliveries within 24 hours. **The comparison group was MVI 100.** Safety was assessed by comparing rates of cesarean deliveries and adverse events.	**Results: Cesareans were performed in 28.1% of participants overall, with 31.4%, 30.4%, and 22.9% of individuals undergoing cesarean delivery in the MVI 100, 150, and 200 groups, respectively (P=0.15, RR 0.73, 95% CI 0.48 –1.10 for MVI 100 compared with MVI 200).**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		known or suspected allergy to prostaglandins; or inability to comply with the protocol.			
Author: Berkley, E., et al. Year Published: 2007 Location: USA Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To assess the efficiency of labor induction using **low dose misoprostol for cervical ripening among nulliparous patients with severe preeclampsia**	**Size:** 145 **Inclusion Criteria**: (1) diagnosis of severe preeclampsia, (2) singleton gestation, (3) nulliparity, and (4) an unfavorable cervix (Bishop score ≤4). **Exclusion Criteria:** Cases in which a cesarean delivery was necessary before labor: fetal malpresentation, placenta previa, active genital herpes, infection, scarred uterus, rapidly worsening maternal condition, non-reassuring fetal heart rate (FHR) pattern before induction of labor, other active medical or obstetrical complications, and the presence of fetal anomalies.	**Type:** Retrospective cohort study. **Intervention:** Cases gathered from perinatal database for nulliparous women with severe preeclampsia delivering singleton gestations. Only those cases (N = 145) that were eligible for a trial of labor and **were administered intravaginal misoprostol (25 mcg every 3 to 6 h) for an unfavorable cervix.** Primary outcomes related to the success and timing of vaginal deliveries. Secondary outcomes involved maternal and neonatal morbidity rates.	**Results:** Vaginal delivery was successful in 95 cases (65.5%). This rate increased from 55.1% in cases at <34 weeks to 68.9% in cases at between 34 and 36 weeks, and to 72.5% in those at >or=37 weeks.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
McMaster, K., et al. (2015). "Balancing the efficacy and safety of misoprostol: a meta-analysis comparing 25 versus 50 micrograms of intravaginal misoprostol for the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 122(4): 468-476.
Wing Da,et al. (2011). "Misoprostol vaginal insert for successful labor induction: a randomized controlled trial." Obstetrics and Gynecology 117(3): 533-541.
Berkley, E., et al. (2007). "Success rates with low dose misoprostol before induction of labor for nulliparas with severe preeclampsia at various gestational ages." Journal of Maternal-Fetal & Neonatal Medicine 20(11): 825-831.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intravaginal misoprostol dose response
Outcome: Neonatal outcomes

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: McMaster, K., et al. Year Published: 2015 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of 25 versus 50 micrograms of intravaginal misoprostol tablets for the induction of labour and cervical ripening.	**Size:** Thirteen studies (1945 women) **Inclusion Criteria**: All studies included were required to have participants randomly assigned to either the 25- or 50-micrograms group, and to have direct comparisons to evaluate the efficacy and safety of 25- versus 50-microgram doses of vaginally administered misoprostol tablets used for cervical ripening and labour induction.	**Type:** Systematic Review **Intervention:** The efficacy outcomes assessed were rates of vaginal delivery within 24 hours, delivery within one dose, and oxytocin augmentation, and interval to delivery. The safety outcomes assessed were incidences of tachysystole, hyperstimulation, caesarean delivery, cesarean delivery for non-reassuring fetal heart rate (FHR), operative vaginal delivery, abnormal 5-minute Apgar score, abnormal cord gas values, admission to a neonatal intensive care unit (NICU), and meconium passage.	**Results:** A significant decrease in the rates of caesarean deliveries performed for non-reassuring fetal heart tracings in the 25-micrograms group (RR 0.67; 95% CI 0.52-0.87) With lower doses of misoprostol, significantly lower rates of NICU admissions (RR 0.63; 95% CI 0.4-0.98) and meconium passage (RR 0.67; 95% CI 0.47-0.96).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Wing Da., et al Year Published: 2011 Location: USA Journal: *Obstetrics and Gynecology*	To compare three doses of misoprostol vaginal insert for successful labor induction measured by the proportion of vaginal deliveries within 24 hours.	**Size:** 374 women **Inclusion Criteria**: At least 18 years of age, of low parity (three or lower) with singleton pregnancies, and at least 36 0/7 weeks of gestation. They had no conditions requiring urgent delivery. The participants required cervical ripening defined as a baseline modified Bishop score of 4 or lower. **Exclusion Criteria:** Active labor; presence of uterine or cervical scar or uterine abnormality; receipt of oxytocin or any cervical ripening or labor inducing agents or a tocolytic drug within 7 days before enrollment; suspected or confirmed cephalopelvic disproportion or fetal malpresentation or both; diagnosed fetal abnormalities; any evidence of fetal compromise, receipt of a nonsteroidal anti-inflammatory drug within 4 hours of study treatment; ruptured membranes 48 hours or more before the start of treatment or suspected chorioamnionitis; fever higher than 37.5°C; any condition in which vaginal delivery was contraindicated, known or suspected allergy to prostaglandins; or inability to comply with the protocol.	**Type:** RCT **Intervention:** Women were randomly assigned to receive misoprostol vaginal insert **(MVI) 100 (n=118), MVI 150 (n=125), or MVI 200 (n=131) micrograms**. The insert was removed for onset of active labor or adverse event. The primary outcome was proportion of vaginal deliveries within 24 hours. **The comparison group was MVI 100.** Safety was assessed by comparing rates of cesarean deliveries and adverse events.	**Results:** MVI 200 was associated with an increased rate of tachysystole (54/131, 41.2%) compared with MVI 100 (23/118, 19.5%) (P<0.001, RR 2.11, 95% CI 1.39–3.22), and MVI 150 (32/135, 25.6%) (P=0.26, RR 1.31, 95% CI 0.82–2.11). **Category II or III FHR patterns were encountered after tachysystole had occurred in nine (7.6%) and 26 (19.8%) women in the MVI 100 and 200 groups, respectively (P=0.006).** No maternal or neonatal deaths occurred during the study and no adverse events led to premature withdrawal of any participants. Systemic adverse events such as nausea, vomiting, and diarrhea in mother or neonate occurred with less than 1% incidence in any treatment group. **There were no differences in other neonatal outcomes between groups**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Berkley, E., et al. Year Published: 2007 Location: USA Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To assess the efficiency of labor induction using **low dose misoprostol for cervical ripening among nulliparous patients with severe preeclampsia**	**Size:** 145 **Inclusion Criteria**: (1) diagnosis of severe preeclampsia, (2) singleton gestation, (3) nulliparity, and (4) an unfavorable cervix (Bishop score ≤4). **Exclusion Criteria:** Cases in which a cesarean delivery was necessary before labor: fetal malpresentation, placenta previa, active genital herpes, infection, scarred uterus, rapidly worsening maternal condition, non-reassuring fetal heart rate (FHR) pattern before induction of labor, other active medical or obstetrical complications, and the presence of fetal anomalies.	**Type:** Retrospective cohort study **Intervention:** Cases gathered from perinatal database for nulliparous women with severe preeclampsia delivering singleton gestations. Only those cases (N = 145) that were eligible for a trial of labor and **were administered intravaginal misoprostol (25 mcg every 3 to 6 h) for an unfavorable cervix.** Primary outcomes related to the success and timing of vaginal deliveries. Secondary outcomes involved maternal and neonatal morbidity rates.	**Results:** A 5-min Apgar score ≤6 was seen in nine (6.2%) cases, with eight being preterm. There were no cases with an umbilical artery pH <7.0. None of the infants delivered by cesarean for fetal intolerance to labor had a low 5-min Apgar score and an umbilical artery pH ≤7.10. There was a decreased rate of intensive care nursery admission (NICU) with advancing gestational age. **Term neonates who were delivered by cesarean had a higher need for intensive care admissions compared with those who delivered vaginally (42.9% vs. 2.8%; p = 0.001).** There were no perinatal deaths. **Respiratory distress syndrome was less common after a very preterm (<34 weeks) vaginal than with a cesarean delivery (14.8% vs. 45.5%; p = 0.018).**	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
McMaster, K., et al. (2015). "Balancing the efficacy and safety of misoprostol: a meta-analysis comparing 25 versus 50 micrograms of intravaginal misoprostol for the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 122(4): 468-476.
Wing Da,et al. (2011). "Misoprostol vaginal insert for successful labor induction: a randomized controlled trial." Obstetrics and Gynecology 117(3): 533-541.
Berkley, E., et al. (2007). "Success rates with low dose misoprostol before induction of labor for nulliparas with severe preeclampsia at various gestational ages." Journal of Maternal-Fetal & Neonatal Medicine 20(11): 825-831.

Buccal or Sublingual Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Buccal or sublingual misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Muzonzini, G. and G. J. Hofmeyr Year Published: 2002 Location: South Africa Journal: *Cochrane Database of Systematic Reviews*	To determine the effectiveness and safety of misoprostol administered buccally or sublingually for third trimester cervical ripening and induction of labour	**Size:** Three studies (502 participants) **Inclusion Criteria**: Randomised controlled trials comparing buccal or sublingual misoprostol used for third trimester cervical ripening or labour induction with placebo/no treatment or other methods.	**Type:** Systematic Review **Intervention:** Three studies (502 participants) compared buccal/sublingual misoprostol respectively with a vaginal regimen (200 microg versus 50 microg) and with oral administration (50 versus 50 microg and 50 versus 100microg).	**Results:** The buccal route was associated with a trend to fewer caesarean sections than with the vaginal route (18/73 versus 28/79; relative risk (RR) 0.70; 95% confidence interval (CI) 0.42 to 1.15). There were no significant differences in any other outcomes.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Wolf. S., et al. Year Published: 2005 Location: USA Journal: *Obstetrics and Gynecology*	To compare the effectiveness of 50 microg compared with 100 microg of repetitive misoprostol dosages administered sublingually for labor induction.	**Size:** 212 women **Inclusion Criteria**: Women presenting with obstetric or medical indications for labor induction. Additional requirements for enrollment included absence of active labor, a normal fetal heart rate (FHR) tracing, an unfavorable cervix (Bishop score<6), no prior hysterotomy, a singleton pregnancy in the cephalic	**Type:** RCT **Intervention:** Women were randomly assigned to 50 microg or 100 microg of misoprostol tablets administered sublingually with double masking of treatment group dose allocation. The primary outcome was the interval from start of induction to vaginal delivery.	**Results:** No differences in mode of delivery Cesarean 21 (21) 100 microgram vs 27 (26) 50 microgram	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		presentation, no suspicion of fetal macrosomia, adequate clinical pelvimetry, and no contraindication to vaginal delivery or the use of prostaglandins.			

References:
Muzonzini, G. and G. J. Hofmeyr (2004). "Buccal or sublingual misoprostol for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(4): CD004221.
Wolf S., et al (2004). "Sublingual misoprostol for labor induction: a randomized clinical trial." Obstetrics and Gynecology 105(2): 365-371.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Buccal or sublingual misoprostol
Outcome: Delivery by 24h

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Wolf. S., et al. Year Published: 2005 Location: USA Journal: *Obstetrics and Gynecology*	To compare the effectiveness of 50 microg compared with 100 microg of repetitive misoprostol dosages administered sublingually for labor induction.	**Size:** 212 women **Inclusion Criteria:** Women presenting with obstetric or medical indications for labor induction. Additional requirements for enrollment included absence of active	**Type:** RCT **Intervention:** Women were randomly assigned to 50 microg or 100 microg of misoprostol tablets administered sublingually with double masking of treatment	**Results:** The number of women delivering vaginally in less than 24 hours was significantly higher in the 100-microg group.	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		labor, a normal fetal heart rate (FHR) tracing, an unfavorable cervix (Bishop score<6), no prior hysterotomy, a singleton pregnancy in the cephalic presentation, no suspicion of fetal macrosomia, adequate clinical pelvimetry, and no contraindication to vaginal delivery or the use of prostaglandins.	group dose allocation. The primary outcome was the interval from start of induction to vaginal delivery.	Vaginal delivery within 24 hours 64 (63) 100 microg vs 37 (36) 50 microg P=0 .001.	☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Wolf S., et al (2004). "Sublingual misoprostol for labor induction: a randomized clinical trial." Obstetrics and Gynecology 105(2): 365-371.

Vaginal versus Sublingual Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal versus sublingual misoprostol
Outcome: Infant morbidity (i.e. NICU admissions, meconium)

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Sharami ., et al Year Published: 2014 Location: Iran	To assess the effectiveness and safety of 25-mug sublingual misoprostol with 50-mug intravaginal misoprostol for	**Size:** 131 patients	**Type:** RCT	**Results:** No significant differences between the groups regarding meconium stained amniotic fluid, and	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding

Journal: *Archives of Iranian Medicine*	cervical ripening prior to labor induction in **primiparous women**	**Inclusion Criteria**: Nulliparous presenting with obstetric or medical indications for labor induction, including gestational age> 41 weeks; oligohydramnios, abnormal biophysical profile score, gestational diabetes mellitus, and intrauterine growth restriction. The inclusion criteria were gestational age of 36-42, singleton live pregnancy, vertex presentation, intact membranes, an unfavorable cervix, absence of spontaneous uterine contractions, estimated fetal weight less than 4000 g, and normal fetal heart rate. **Exclusion Criteria:** Cephalopelvic disproportion, previous cesarean delivery or other type of uterine scars, known hypersensitivity to the use of PGs, preeclampsia, the need for immediate birth (such as active uterine bleeding or fetal heart rate (FHR) abnormalities, and any contraindication to vaginal delivery.	**Intervention:** In a double-blind, parallel randomized controlled equivalence trial, primiparous women at 36-42 weeks of gestation requiring labor induction. The women were randomly assigned to receive **25-mug sublingual misoprostol with vaginal placebo (n = 63) or 50-mug intravaginal misoprostol with sublingual placebo (n = 63).** The dose was repeated every 4 h (maximum 4 doses). The primary outcome was the interval from the start of induction to vaginal delivery.	Apgar scores less than 7, the need for admissions to the NICU.	☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Zahran K., et al Year Published: 2009 Location: Egypt Journal: *Journal of obstetrics and gynaecology research*	To assess the effectiveness and safety of sublingual misoprostol (50 microg), compared with the same dose administered vaginally every 6 h for cervical ripening and labor induction in women with a viable fetus in the third trimester of pregnancy.	**Size:** 480 patients **Inclusion Criteria**: 36 weeks pregnancy or more, singleton living fetus, cephalic presentation, amniotic fluid index of more than 5 cm, reactive non-stress test and negative contraction stress test and Bishop Score of 4 or less	**Type:** RCT **Intervention:** This double-blind randomized prospective placebo-controlled trial included 480 women with medical or obstetric indications for labor induction and undilated, uneffaced cervices. The patients were assigned randomly to **receive 50 microg of sublingual or 50 microg of**	**Results:** No significant differences between the groups regarding meconium stained amniotic fluid, and Apgar scores less than 7, the need for admissions to the NICU	**Study Limitations:** ☐ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome)

		Exclusion Criteria: Babies weighing more than 4000 g, fetal anomalies, intrauterine growth restriction (IUGR), previous uterine scars, prelabour premature rupture of fetal membranes (PPROM), cephalopelvic disproportion or any other contraindication to vaginal delivery	**vaginal misoprostol** every 6 h for 24 h. Maternal and neonatal outcome were analyzed.		☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Sharami S. et al (2014) . "Comparison of 25 mug sublingual and 50 mug intravaginal misoprostol for cervical ripening and labor: a randomized controlled equivalence trial." Archives of Iranian Medicine 17(10): 652-656.
Zahran K. et Al (2009) "Sublingual versus vaginal misoprostol for induction of labor at term: a randomized prospective placebo-controlled study." Journal of obstetrics and gynaecology research 35(6): 1054-1060.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal versus sublingual misoprostol
Outcome: Uterine hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Zahran K., et al Year Published: 2009 Location: Egypt Journal: *Journal of obstetrics and gynaecology research*	To assess the effectiveness and safety of sublingual misoprostol (50 microg), compared with the same dose administered vaginally every 6 h for cervical ripening and	**Size:** 480 patients **Inclusion Criteria**: 36 weeks pregnancy or more, singleton living fetus, cephalic	**Type:** RCT **Intervention:** This double-blind randomized prospective placebo-controlled trial	**Results:** The rates of contractility disturbances, such as tachysystole and hypertonus uterus were similar in the two groups, while the rate of	**Study Limitations:** ☐ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment

	labor induction in women with a viable fetus in the third trimester of pregnancy.	presentation, amniotic fluid index of more than 5 cm, reactive non-stress test and negative contraction stress test and Bishop Score of 4 or less. **Exclusion Criteria:** Babies weighing more than 4000 g, fetal anomalies, intrauterine growth restriction (IUGR), previous uterine scars, prelabour premature rupture of fetal membranes (PPROM), cephalopelvic disproportion or any other contraindication to vaginal delivery.	included 480 women with medical or obstetric indications for labor induction and undilated, uneffaced cervices. The patients were assigned randomly to **receive 50 microg of sublingual or 50 microg of vaginal misoprostol** every 6 h for 24 h. Maternal and neonatal outcome were analyzed.	hyperstimulation syndrome was more common in the vaginal than in the sublingual group (25 [10.4%] vs 16 [6.7%], respectively. Not statistically significant.	☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Sharami ., et al Year Published: 2014 Location: Iran Journal: *Archives of Iranian Medicine*	To assess the effectiveness and safety of 25-mug sublingual misoprostol with 50-mug intravaginal misoprostol for cervical ripening prior to labor induction in **primiparous women**	**Size:** 131 patients **Inclusion Criteria**: Nulliparous presenting with obstetric or medical indications for labor induction, including gestational age> 41 weeks; oligohydramnios, abnormal biophysical profile score, gestational diabetes mellitus, and intrauterine growth restriction. The inclusion criteria were gestational age of 36-42, singleton live pregnancy, vertex presentation, intact membranes, an unfavorable cervix, absence of spontaneous uterine contractions, estimated fetal weight less than 4000 g, and normal fetal heart rate. **Exclusion Criteria:** Cephalopelvic disproportion, previous cesarean delivery or other type of uterine scars, known hypersensitivity to the use of PGs, preeclampsia, the	**Type:** RCT **Intervention:** In a double-blind, parallel randomized controlled equivalence trial, primiparous women at 36-42 weeks of gestation requiring labor induction. The women were randomly assigned to receive **25-mug sublingual misoprostol with vaginal placebo (n = 63) or 50-mug intravaginal misoprostol with sublingual placebo (n = 63).** The dose was repeated every 4 h (maximum 4 doses). The primary outcome was the interval from the start of induction to vaginal delivery.	**Results:** The rate of tachysystole and uterine hyperstimulation as well as the need for oxytocin augmentation was similar in the two groups.	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		need for immediate birth (such as active uterine bleeding or fetal heart rate (FHR) abnormalities, and any contraindication to vaginal delivery.			

References:
Sharami S. et al (2014) . "Comparison of 25 mug sublingual and 50 mug intravaginal misoprostol for cervical ripening and labor: a randomized controlled equivalence trial." Archives of Iranian Medicine 17(10): 652-656.
Zahran K. et Al (2009) "Sublingual versus vaginal misoprostol for induction of labor at term: a randomized prospective placebo-controlled study." Journal of obstetrics and gynaecology research 35(6): 1054-1060.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal versus sublingual misoprostol
Outcome: Delivery not achieved by 24h

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Zahran K., et al Year Published: 2009 Location: Egypt Journal: *Journal of obstetrics and gynaecology research*	To assess the effectiveness and safety of sublingual misoprostol (50 microg), compared with the same dose administered vaginally every 6 h for cervical ripening and labor induction in women with a viable fetus in the third trimester of pregnancy.	**Size:** 480 patients **Inclusion Criteria**: 36 weeks pregnancy or more, singleton living fetus, cephalic presentation, amniotic fluid index of more than 5 cm, reactive non-stress test and	**Type:** RCT **Intervention:** This double-blind randomized prospective placebo-controlled trial included 480 women with medical or obstetric indications for labor induction and undilated, uneffaced cervices.	**Results:** More subjects in the sublingual achieved vaginal delivery within 24 h than in the vaginal group (P = 0.70, relative risk was 0.98, 95% confidence limits 0.87-1.10). Not statistically significant.	***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		negative contraction stress test and Bishop Score of 4 or less. **Exclusion Criteria:** Babies weighing more than 4000 g, fetal anomalies, intrauterine growth restriction (IUGR), previous uterine scars, prelabour premature rupture of fetal membranes (PPROM), cephalopelvic disproportion or any other contraindication to vaginal delivery.	The patients were assigned randomly to **receive 50 microg of sublingual or 50 microg of vaginal misoprostol** every 6 h for 24 h. Maternal and neonatal outcome were analyzed.		☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Sharami ., et al Year Published: 2014 Location: Iran Journal: *Archives of Iranian Medicine*	To assess the effectiveness and safety of 25-mug sublingual misoprostol with 50-mug intravaginal misoprostol for cervical ripening prior to labor induction in **primiparous women.**	**Size:** 131 patients **Inclusion Criteria**: Nulliparous presenting with obstetric or medical indications for labor induction, including gestational age> 41 weeks; oligohydramnios, abnormal biophysical profile score, gestational diabetes mellitus, and intrauterine growth restriction. The inclusion criteria were gestational age of 36-42, singleton live pregnancy, vertex presentation, intact membranes, an unfavorable cervix, absence of spontaneous uterine contractions, estimated fetal weight less than 4000 g, and normal fetal heart rate. **Exclusion Criteria:** Cephalopelvic disproportion, previous cesarean delivery or other type of uterine scars, known hypersensitivity to the use of PGs, preeclampsia, the need for immediate birth (such as active uterine bleeding or fetal heart rate (FHR)	**Type:** RCT **Intervention:** In a double-blind, parallel randomized controlled equivalence trial, primiparous women at 36-42 weeks of gestation requiring labor induction. The women were randomly assigned to receive **25-mug sublingual misoprostol with vaginal placebo (n = 63) or 50-mug intravaginal misoprostol with sublingual placebo (n = 63).** The dose was repeated every 4 h (maximum 4 doses). The primary outcome was the interval from the start of induction to vaginal delivery.	**Results:** In both groups, a considerable improvement occurred in Bishop Score 4h after initiation of labor induction. **There were no significant differences in the interval from initiation of induction to the active phase of labor, success of induction rate, changes in cervical dilation after 4h, the rate of vaginal delivery before 12 h, and 24 h.**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		abnormalities, and any contraindication to vaginal delivery.			

References:
Sharami S. et al (2014) . "Comparison of 25 mug sublingual and 50 mug intravaginal misoprostol for cervical ripening and labor: a randomized controlled equivalence trial." Archives of Iranian Medicine 17(10): 652-656.
Zahran K. et Al (2009) "Sublingual versus vaginal misoprostol for induction of labor at term: a randomized prospective placebo-controlled study." Journal of obstetrics and gynaecology research 35(6): 1054-1060.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Vaginal versus sublingual misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Zahran K., et al Year Published: 2009 Location: Egypt Journal: *Journal of obstetrics and gynaecology research*	To assess the effectiveness and safety of sublingual misoprostol (50 microg), compared with the same dose administered vaginally every 6 h for cervical ripening and labor induction in women with a viable fetus in the third trimester of pregnancy.	**Size:** 480 patients **Inclusion Criteria**: 36 weeks pregnancy or more, singleton living fetus, cephalic presentation, amniotic fluid index of more than 5 cm, reactive non-stress test and negative contraction stress test and Bishop Score of 4 or less	**Type:** RCT **Intervention:** This double-blind randomized prospective placebo-controlled trial included 480 women with medical or obstetric indications for labor induction and undilated, uneffaced cervices. The patients were assigned randomly to **receive 50 microg of sublingual or 50 microg of**	**Results:** Women using sublingual misoprostol were less likely to need oxytocin (P = 0.80, relative risk (RR) was 1.01, 95% confidence limits= 0.92-1.11), and had a lower CS rate compared to vaginal group (P = 0.52, relative risk (RR) was 0.98, 95% confidence limits 0.94-1.12) Not statistically significant	***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		Exclusion Criteria: Babies weighing more than 4000 g, fetal anomalies, intrauterine growth restriction (IUGR), previous uterine scars, prelabour premature rupture of fetal membranes (PPROM), cephalopelvic disproportion or any other contraindication to vaginal delivery.	**vaginal misoprostol** every 6 h for 24 h. Maternal and neonatal outcome were analyzed.		☐ Difference in important prognostic factors at baseline
Author: Sharami ., et al Year Published: 2014 Location: Iran Journal: *Archives of Iranian Medicine*	To assess the effectiveness and safety of 25-mug sublingual misoprostol with 50-mug intravaginal misoprostol for cervical ripening prior to labor induction in **primiparous women.**	**Size:** 131 patients **Inclusion Criteria**: Nulliparous presenting with obstetric or medical indications for labor induction, including gestational age> 41 weeks; oligohydramnios, abnormal biophysical profile score, gestational diabetes mellitus, and intrauterine growth restriction. The inclusion criteria were gestational age of 36-42, singleton live pregnancy, vertex presentation, intact membranes, an unfavorable cervix, absence of spontaneous uterine contractions, estimated fetal weight less than 4000 g, and normal fetal heart rate. **Exclusion Criteria:** Cephalopelvic disproportion, previous cesarean delivery or other type of uterine scars, known hypersensitivity to the use of PGs, preeclampsia, the need for immediate birth (such as active uterine bleeding or fetal heart rate (FHR) abnormalities, and any contraindication to vaginal delivery.	**Type:** RCT **Intervention:** In a double-blind, parallel randomized controlled equivalence trial, primiparous women at 36-42 weeks of gestation requiring labor induction. The women were randomly assigned to receive **25-mug sublingual misoprostol with vaginal placebo (n = 63) or 50-mug intravaginal misoprostol with sublingual placebo (n = 63).** The dose was repeated every 4 h (maximum 4 doses). The primary outcome was the interval from the start of induction to vaginal delivery.	**Results: There were no significant differences in the incidence of cesarean delivery, the rate of cesarean for failed induction and fetal distress, between the two groups.**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Sharami S. et al (2014) . "Comparison of 25 mug sublingual and 50 mug intravaginal misoprostol for cervical ripening and labor: a randomized controlled equivalence trial." Archives of Iranian Medicine 17(10): 652-656.
Zahran K. et Al (2009) "Sublingual versus vaginal misoprostol for induction of labor at term: a randomized prospective placebo-controlled study." Journal of obstetrics and gynaecology research 35(6): 1054-1060.

Dosing Regimens of Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Dosing regimens of misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Rouzi AA, Alsahly N, Alamoudi R,et al Year Published: 2016 Location: Saudi Arabia Journal: *American Journal of Obstetrics and Gynecology*	The purpose of this study was to compare efficacy and safety of hourly titrated-dose oral misoprostol solution with static-dose oral misoprostol solution every 2 hours for labor induction	**Size: 146 patients** **Inclusion Criteria**: (1) singleton live pregnancy, (2)>34 weeks gestation, (3)Bishop score<6, (4) intact membranes, (5) cephalic presentation, and (6) reassuring fetal heart rate. **Exclusion Criteria:** 1) hypersensitivity to misoprostol, 2) previous	**Type:** RCT **Intervention:** In this randomized controlled study, **oral misoprostol solution was administered as (1) 20mg hourly (≤4 doses) that was increased in the absence of regular uterine contractions to 40mg hourly (≤4 doses) and then to 60mg hourly (≤16 doses) or (2) 25mg every 2**	**Results:** Cesarean deliveries were per-formed within 24 hours in 9 women who received hourly titrated-dose misoprostol solution and 2 women who received 2-hourly static-dose misoprostol solution (P=0.056).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome)

		cesarean delivery or other uterine surgery, (3) severe pregnancy-induced hypertension),(4) total pregnancies>4, (5) multiple gestations, (6) uterine contractions, and(7) significant maternal cardiac, renal, or liver disease.	**hours until active labor began (<12 doses).**		☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Pimentel VM, Arabkhazaeli M, MoonJ-Y, et al. Year Published: 2018 Location: USA Journal: *American Journal of Obstetrics and Gynecology*	To compare the rate of vaginal delivery within 24 hours between a 1-dose and a multiple-dose regimen of misoprostol for the induction of labor.	**Size:** 250 patients **Inclusion Criteria**: Nulliparous and multiparous English-speaking women, ages 18e50 years, with singleton term pregnancies (>37 weeks gestation), and with a Bishop score of<6 who were admitted for either elective or indicated induction of labor. **Exclusion Criteria:** Contraindication to misoprostol or vaginal delivery, a fetal death, major fetal anomaly, fetal growth restriction, nonreassuring antepartum fetal testing, or premature rupture of membranes.	**Type:** RCT **Intervention:** For all patients who were enrolled, misoprostol 25mg was to be administered vaginally. **For the group who received only 1 dose, oxytocin was started 4-6 hours after the patient received misoprostol to initiate labor if clinically indicated. In the multiple-dose misoprostol group, misoprostol 25mg was administered vaginally every 4-6 hours for a maximum of 4 doses.**	**Results:** Cesarean delivery The cesarean delivery rate was greater in the 1-misoprostol group compared with the multiple-misoprostol group (P=0.034; 35.8% vs 22.8%). When the data were stratified by parity, this difference was noted only for nulliparous women (nulliparous P=0.016; multiparous=1.000). **However, misoprostol group assignment was no longer associated with cesarean delivery rate in a regression analysis that controlled for parity, body mass index, gestational age, estimated fetal weight, Bishop score before starting oxytocin, early artificial rupture of membrane (ie,at<6 cm of dilation), and Foley balloon placement.**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Rouzi A. et al (2016). "Randomized clinical trial between hourly titrated and 2 hourly static oral misoprostol solution for induction of labor." American journal of obstetrics and gynecology 216(4): 405.e401-405.e406.
Pimentel V. et al (2018) "Induction of labor using one dose vs multiple doses of misoprostol: a randomized controlled trial." American journal of obstetrics and gynecology 218(6): 614.e611-614.e618.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Dosing regimens of misoprostol
Outcome: Vaginal delivery in 24h

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Rouzi AA, Alsahly N, Alamoudi R,et al Year Published: 2016 Location: Saudi Arabia Journal: *American Journal of Obstetrics and Gynecology*	The purpose of this study was to compare efficacy and safety of hourly titrated-dose oral misoprostol solution with static-dose oral misoprostol solution every 2 hours for labor induction.	**Size:** 146 patients **Inclusion Criteria**: (1) singleton live pregnancy, (2)>34 weeks gestation, (3)Bishop score<6, (4) intact membranes,(5) cephalic presentation, and (6) reassuring fetal heart rate **Exclusion Criteria:** (1) hypersensitivity to misoprostol, (2) previous cesarean delivery or other uterine surgery, (3) severe pregnancy-induced hypertension), (4) total pregnancies>4, (5) multiplegestations, (6) uterine contractions, and (7) significant maternal cardiac, renal, or liver disease.	**Type:** RCT **Intervention:** In this randomized controlled study, **oral misoprostol solution was administered as (1) 20mg hourly (≤4 doses) that was increased in the absence of regular uterine contractions to 40mg hourly (≤4 doses) and then to 60mg hourly (≤16 doses) or (2) 25mg every2 hours until active labor began (≤12 doses).**	**Results:** Vaginal delivery within 24 hours was achieved in 95 women (65.1%) in the entire cohort, including 47 women (45 normal vaginal deliveries and 2 vacuum extractions) in the hourly titrated-dose group (64.4%) and 48 women (43normal vaginal deliveries and 5 vacuum extractions) in the static dose every2 hours group (65.8%; relative risk, 0.98;95% confidence interval, 0.77-1.24;P=1.00).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Pimentel VM, Arabkhazaeli M, MoonJ-Y, et al. *Year Published: 2018* *Location: USA* *Journal: American Journal of Obstetrics and Gynecology*	To compare the rate of vaginal delivery within 24 hours between a 1-dose and a multiple-dose regimen of misoprostol for the induction of labor.	**Size:** 250 patients **Inclusion Criteria**: Nulliparous and multiparous English-speaking women, ages 18e50 years, with singleton term pregnancies (>37 weeks gestation), and with a Bishop score of<6 who were admitted for either elective or indicated induction of labor. **Exclusion Criteria:** Contraindication to misoprostol or vaginal delivery, a fetal death, major fetal anomaly, fetal growth restriction, nonreassuring antepartum fetal testing, or premature rupture of membranes.	**Type:** RCT **Intervention:** For all patients who were enrolled, misoprostol 25mg was to be administered vaginally. **For the group who received only 1 dose, oxytocin was star-ted 4-6 hours after the patient received misoprostol to initiate labor if clinically indicated. In the multiple-dose misoprostol group, misoprostol 25mg was administered vaginally every 4e6 hours for a maximum of 4 doses.**	**Results:** There was no statistically significant difference in the vaginal delivery rate within 24 hours between the 1-misoprostol group and multiple-dose regimen group (41.7% vs44.7%; P=0.698, respectively). When the data were stratified by parity, there was also no statistically significant difference in the vaginal delivery rate within 24 hours (nulliparous=0.703; multiparous=1.000).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Rouzi A. et al (2016). "Randomized clinical trial between hourly titrated and 2 hourly static oral misoprostol solution for induction of labor." American journal of obstetrics and gynecology 216(4): 405.e401-405.e406.
Pimentel V. et al (2018) "Induction of labor using one dose vs multiple doses of misoprostol: a randomized controlled trial." American journal of obstetrics and gynecology 218(6): 614.e611-614.e618.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Dosing regimens of misoprostol
Outcome: Uterine hyperstimulation or changes

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient

		☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Rouzi AA, Alsahly N, Alamoudi R,et al Year Published: 2016 Location: Saudi Arabia Journal: *American Journal of Obstetrics and Gynecology*	The purpose of this study was to compare efficacy and safety of hourly titrated-dose oral misoprostol solution with static-dose oral misoprostol solution every 2 hours for labor induction	**Size:** 146 patients **Inclusion Criteria**: (1) singleton live pregnancy, (2)>34 weeks gestation, (3) Bishop score<6, (4) intact membranes,(5) cephalic presentation, and (6) reassuring fetal heart rate. **Exclusion Criteria:** (1) hypersensitivity to misoprostol, (2) previous cesarean delivery or other uterine surgery, (3) severe pregnancy-induced hypertension), (4) total pregnancies>4, (5) multiplegestations, (6) uterine contractions, and (7) significant maternal cardiac, renal, or liver disease.	**Type:** RCT **Intervention:** In this randomized controlled study, **oral misoprostol solution was administered as (1) 20mg hourly (≤4 doses) that was increased in the absence of regular uterine contractions to 40mg hourly (≤4 doses) and then to 60mg hourly (≤16 doses) or (2) 25mg every2 hours until active labor began (≤12 doses).**	**Results:** There was no statistically significant difference in tachysystole between the groups (P=1.00)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Pimentel VM, Arabkhazaeli M, MoonJ-Y, et al. Year Published: 2018 Location: USA Journal: *American Journal of Obstetrics and Gynecology*	To compare the rate of vaginal delivery within 24 hours between a 1-dose and a multiple-dose regimen of misoprostol for the induction of labor.	**Size:** 250 patients **Inclusion Criteria**: Nulliparous and multiparous English-speaking women, ages 18e50 years, with singleton term pregnancies (>37 weeks gestation), and with a Bishop score of<6 who were admitted for either elective or indicated induction of labor. **Exclusion Criteria:** Contraindication to	**Type:** RCT **Intervention:** For all patients who were enrolled, misoprostol 25mg was to be administered vaginally. **For the group who received only 1 dose, oxytocin was started 4-6 hours after the patient received misoprostol to initiate labor if clinically indicated. In the multiple-dose misoprostol group, misoprostol 25mg was administered vaginally every**	**Results:** There was no statistically significant difference in uterine hyperstimulation between the groups (P=1.00)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		misoprostol or vaginal delivery, a fetal death, major fetal anomaly, fetal growth restriction, nonreassuring antepartum fetal testing, or premature rupture of membranes.	**4e6 hours for a maximum of 4 doses.**		☐ Difference in important prognostic factors at baseline

References:
Rouzi A. et al (2016). "Randomized clinical trial between hourly titrated and 2 hourly static oral misoprostol solution for induction of labor." American journal of obstetrics and gynecology 216(4): 405.e401-405.e406.
Pimentel V. et al (2018) "Induction of labor using one dose vs multiple doses of misoprostol: a randomized controlled trial." American journal of obstetrics and gynecology 218(6): 614.e611-614.e618.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Dosing regimens of misoprostol
Outcome: Adverse neonatal outcomes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Rouzi AA, Alsahly N, Alamoudi R,et al Year Published: 2016 Location: Saudi Arabia	The purpose of this study was to compare efficacy and safety of hourly titrated-dose oral misoprostol solution with static-dose oral misoprostol	**Size:** 146 patients **Inclusion Criteria**: (1) singleton live pregnancy, (2)>34 weeks gestation, (3) Bishop score<6, (4) intact membranes, (5)	**Type:** RCT **Intervention:** In this randomized controlled study, **oral misoprostol solution was administered as (1) 20mg**	**Results:** There was no statistically significant difference in NICU admission between the groups (P=0.166)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment

Journal: *American Journal of Obstetrics and Gynecology*	solution every 2 hours for labor induction	cephalic presentation, and (6) reassuring fetal heart rate **Exclusion Criteria:** (1) hypersensitivity to misoprostol, 2) previous cesarean delivery or other uterine surgery, (3) severe pregnancy-induced hypertension), (4) total pregnancies>4, (5) multiplegestations, (6) uterine contractions, and (7) significant maternal cardiac, renal, or liver disease.	**hourly (≤4 doses) that was increased in the absence of regular uterine contractions to 40mg hourly (≤4 doses) and then to 60mg hourly (≤16 doses) or (2) 25mg every2 hours until active labor began (≤12 doses).**		☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Pimentel VM, Arabkhazaeli M, MoonJ-Y, et al. Year Published: 2018 Location: USA Journal: *American Journal of Obstetrics and Gynecology*	To compare the rate of vaginal delivery within 24 hours between a 1-dose and a multiple-dose regimen of misoprostol for the induction of labor.	**Size:** 250 patients **Inclusion Criteria**: nulliparous and multiparous English-speaking women, ages 18e50 years, with singleton term pregnancies (>37 weeks gestation), and with a Bishop score of<6 who were admitted for either elective or indicated induction of labor. **Exclusion Criteria:** contraindication to misoprostol or vaginal delivery, a fetal death, major fetal anomaly, fetal growth restriction, nonreassuring antepartum fetal testing, or premature rupture of membranes.	**Type:** RCT **Intervention:** For all patients who were enrolled, misoprostol 25mg was to be administered vaginally. **For the group who received only 1 dose, oxytocin was started 4-6 hours after the patient received misoprostol to initiate labor if clinically indicated. In the multiple-dose misoprostol group, misoprostol 25mg was administered vaginally every 4e6 hours for a maximum of 4 doses.**	**Results:** There was no statistically significant difference in NICU admission between the groups (P=0.68)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Rouzi A. et al (2016). "Randomized clinical trial between hourly titrated and 2 hourly static oral misoprostol solution for induction of labor." American journal of obstetrics and gynecology 216(4): 405.e401-405.e406.
Pimentel V. et al (2018) "Induction of labor using one dose vs multiple doses of misoprostol: a randomized controlled trial." American journal of obstetrics and gynecology 218(6): 614.e611-614.e618.

Question 3: What are the harms and benefits of non-pharmacological (e.g. membrane sweeping, breast stimulation) methods?

Acupuncture or acupressure

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus placebo
Outcome: Cesarean section

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 8 trials (789 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours;	**Results: Overall, there was high-quality evidence of no clear difference in caesarean deliveries between groups** (average risk ratio (RR) 0.80, 95% confidence interval (CI) 0.56 to 1.15).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			(2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.		

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus placebo
Outcome: Neonatal morbidity

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 1 trials (364 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or	**Results:** There was low-quality evidence of no difference in neonatal seizures between groups (RR 1.01, 95% CI 0.06 to 16.04).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

			other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.		☐ Inappropriate pooled analysis

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus placebo
Outcome: Cervical change within 12 to 24 hours

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 1 trial (125 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical	**Results:** Overall, there was evidence of a benefit from acupuncture in increasing cervical maturity within 24 hours (MD 0.40, 95% CI 0.11 to 0.69).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

			ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.		☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus usual care
Outcome: Cesarean Section

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Smith, C. A., et al. Year Published: 2017 Location:	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure	**Size:** 8 trials (760 women)	**Type:** Systematic Review	**Results:** *Manual acupuncture versus usual care* Five trials (433 women) used manual acupuncture. There	**Study Limitations:** ☒ None ***Systematic Review***

Journal: Cochrane Database of Systematic Reviews	for third trimester cervical ripening or induction of labour.	**Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	was no evidence of a difference in caesarean deliveries between groups (average RR 1.10, 95% CI 0.63 to 1.92). *Electro-acupuncture versus usual care* Three trials (327 women) used electro-acupuncture. There was evidence of a benefit for electro acupuncture in reducing caesarean section rate (average RR 0.54, 95% CI 0.37 to 0.80).	☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus usual care
Outcome: Cervical change within 12 to 24 hours

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations

Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 1 trials (67 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** There was an increase in cervical maturation (measured by Bishops score) in the acupuncture group compared with the control (MD 1.30, 95% CI 0.11 to 2.49)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus usual care
Outcome: Neonatal intensive care unit admission

Quality (certainty) of evidence for: (outcome)		
☐ High ☐ Moderate ☒ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 2 trials (249 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** Overall, there was no evidence of a benefit for acupuncture (RR 0.27, 95% CI 0.05 to 1.48).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus usual care
Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:		**Lower Quality Rating if:**		**Other Considerations:**	
☐ High ☒ Medium ☐ Low		☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 1 trials (67 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** There was no evidence of a difference in maternal satisfaction between groups (RR 1.29, 95%CI 0.99 to 1.67).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus sweeping of fetal membranes
Outcome: Caesarean section

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 1 trials (207 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** Moderate-quality evidence of no clear difference in caesarean deliveries between groups (RR 0.64, 95% CI 0.34 to 1.22)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupuncture versus sweeping of fetal membranes
Outcome: Neonatal intensive care unit admission

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 1 trials (207 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death	**Results:** There was no evidence of a difference between groups (RR 0.33, 95% CI 0.03 to 3.12)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupressure versus sham control
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 2 trials (239 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity	**Results:** Moderate-quality evidence of no clear difference in caesarean deliveries between groups (RR, 0.94, 95% CI 0.68 to 1.30)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			or perinatal death; (5) serious maternal morbidity or death.		

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews 10: CD002962.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Acupressure versus usual care
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Smith, C. A., et al. Year Published: 2017 Location: Journal: Cochrane Database of Systematic Reviews	To determine, from the best available evidence, the effectiveness and safety of acupuncture and acupressure for third trimester cervical ripening or induction of labour.	**Size:** 2 trials (151 women) **Inclusion Criteria**: Pregnant women carrying a viable fetus due for third trimester induction of labour.	**Type:** Systematic Review **Intervention**: Randomised controlled trials comparing acupuncture or acupressure, used for third trimester cervical ripening or labour induction, with placebo/no treatment or other methods on a predefined list of labour induction methods. (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR)	**Results:** Moderate-quality evidence of no clear differences between groups (RR 1.02, 95% CI 0.68 to 1.53)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.		

References:
Smith, C. A., et al. (2017). "Acupuncture or acupressure for induction of labour." Cochrane Database of Systematic Reviews **10**: CD002962.

Castor Oil

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Castor oil or enemas
Outcome: Caesarean section

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kelly, A. J., et al. Year Published: 2013 Location Journal: Cochrane Database of Systematic Reviews	To determine the effects of castor oil or enemas for third trimester cervical ripening or induction of labour in comparison with other methods of cervical ripening or induction of labour.	**Size:** 2 trials, 233 women **Inclusion Criteria**: Clinical trials comparing castor oil, bath or enemas used for third trimester cervical ripening or labour induction with placebo/no treatment or other methods listed above it on a	**Type**: Systematic Review **Intervention**: RCTS comparing castor oil, bath or enemas used for third trimester cervical ripening or labour induction with placebo/no treatment (1) vaginal delivery not achieved within 24 hours;	**Results:** There was no evidence of differences in caesarean section rates between the two interventions in the two trials reporting this outcome (risk ratio (RR) 2.04, 95% confidence interval (CI) 0.92 to 4.55).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

		predefined list of labour induction methods.	(2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.		☐ Inappropriate pooled analysis
Author: Neri, I., et al. Year Published: 2018 Location: Italy Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To investigate the safety and efficacy of castor oil to induce labour.	**Size:** 80 women **Inclusion criteria:** Gestational age or aging between 40–41 weeks plus premature rupture of membranes (PROM) between 12 and 18 h or amniotic fluid index <4 or Bishop Score of <4 or in case of absence of spontaneous labour over 41+4 weeks. **Exclusion criteria:** Onset of spontaneous uterine activity or use of other methods such as coitus, nipple stimulation, laxatives, other herbal preparations or acupuncture in last 24 h.	**Type**: Retrospective observational case control study **Intervention**: During the visit at the Birth Centre women were advised to take a single dose of 60 ml castor oil dissolved in 200 ml of warm water at home.	**Results:** The mode of delivery differed significantly between groups: women assuming castor oil showed a higher incidence of vaginal delivery, whereas the incidence of caesarean section was lower in the COG, but no statistical significance was reached.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☒ Flawed measurement of both exposure and outcome ☐ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
Kelly, A. J., et al. (2013). "Castor oil, bath and/or enema for cervical priming and induction of labour." Cochrane Database of Systematic Reviews(7): CD003099
Neri, I., et al. (2018). "Castor oil for induction of labour: a retrospective study." Journal of Maternal-Fetal & Neonatal Medicine31(16): 2105-2108.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Castor oil or enemas
Outcome: Formal induction of labor

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:		**Lower Quality Rating if:**		**Other Considerations:**	
☒ High ☐ Medium ☐ Low		☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Neri, I., et al. Year Published: 2018 Location: Italy Journal: Journal of Maternal-Fetal & Neonatal Medicine	To investigate the safety and efficacy of castor oil to induce labour.	**Size:** 80 women **Inclusion criteria:** Gestational age or aging between 40–41 weeks plus premature rupture of membranes (PROM) between 12 and 18 h or amniotic fluid index <4 or Bishop Score of <4 or in case of absence of spontaneous labour over 41+4 weeks. **Exclusion criteria:** Onset of spontaneous uterine activity or use of other methods such as coitus, nipple stimulation, laxatives, other herbal preparations or acupuncture in last 24 h.	**Type**: Retrospective observational case control study **Intervention**: During the visit at the Birth Centre women were advised to take a single dose of 60 ml castor oil dissolved in 200 ml of warm water at home.	**Results:** Pharmacological induction of labour was required for 18 women in the COG (45%) and 36 in the CG (90%) (P < .001).	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☒ Flawed measurement of both exposure and outcome ☐ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
Neri, I., et al. (2018). "Castor oil for induction of labour: a retrospective study." Journal of Maternal-Fetal & Neonatal Medicine31(16): 2105-2108

Breast Stimulation

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Breast stimulation versus usual care
Outcome: Mode of delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kavanagh, J., et al. Year Published: 2005 Location Journal: Cochrane Database of Systematic Reviews	To determine the effectiveness of clinical trials of breast stimulation for third trimester cervical ripening or labour induction.	**Size:** 1 study, 200 women **Inclusion Criteria:** Clinical trials of breast stimulation for third trimester cervical ripening or labour induction.	**Type:** Systematic Review **Intervention:** RCTS Clinical trials of breast stimulation for third trimester cervical ripening or labour induction (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** Little difference in caesarean section rates (9% versus 10%, relative risk (RR) 0.90, 95% confidence interval (CI) 0.38 to 2.12).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Singh N., et al. Year Published: 2014 Location: India Journal: *BioMed Research International*	To elicit the safety and efficacy of breast stimulation as an intervention to prevent postdatism and as an aid in spontaneous onset of labour.	**Size:** 200 women **Inclusion Criteria:** Primigravidas with cephalic presentation, without any high-risk factor, were recruited between 36 to 38 weeks of gestation.	**Type:** RCT **Intervention:** Breast stimulation was advised to one group but not to the other group. Bishop's scoring was done at 38 weeks and repeated at 39 weeks of gestation.	**Results:** Increased chance of vaginal delivery in the breast stimulation group (P=0.046)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unknown allocation concealment ☐ Stopped early for benefit

			Maternal and fetal outcomes were compared in two groups.		☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References: Kavanagh, J., et al. (2005). "Breast stimulation for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(3): CD003392.
Singh N. (2014). "Breast stimulation in low-risk primigravidas at term: does it aid in spontaneous onset of labour and vaginal delivery? A pilot study." BioMed Research International

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Breast stimulation versus usual care
Outcome: Bishop score after 1 week

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Singh N., et al. Year Published: 2014 Location: India Journal: *BioMed Research International*	To elicit the safety and efficacy of breast stimulation as an intervention to prevent postdatism and as an aid in spontaneous onset of labour.	**Size:** 200 women **Inclusion Criteria**: Primigravidas with cephalic presentation, without any high-risk factor, were recruited between 36 to 38 weeks of gestation.	**Type**: RCT **Intervention**: Breast stimulation was advised to one group but not to the other group. Bishop's scoring was done at 38 weeks and repeated at 39 weeks of gestation.	**Results:** Bishop's score changed from 3.12 (+/-1.01) to 3.9 (+/-1.08) in control group and from 3.02 (+/-0.82) to 6.08 (+/-1.29) in breast stimulation group after one week (P value < 0.0001).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unknown allocation concealment ☐ Stopped early for benefit

			Maternal and fetal outcomes were compared in two groups.		☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Singh N. (2014). "Breast stimulation in low-risk primigravidas at term: does it aid in spontaneous onset of labour and vaginal delivery? A pilot study." BioMed Research International

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Breast stimulation versus usual care
Outcome: Perinatal death

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kavanagh, J., et al. Year Published: 2005 Location Journal: Cochrane Database of Systematic Reviews	To determine the effectiveness of clinical trials of breast stimulation for third trimester cervical ripening or labour induction	**Size:** 3 studies, 337 women **Inclusion Criteria**: Clinical trials of breast stimulation for third trimester cervical ripening or labour induction.	**Type**: Systematic Review **Intervention**: RCTS Clinical trials of breast stimulation for third trimester cervical ripening or labour induction (1) vaginal delivery not achieved within 24 hours; (2) uterine	**Results:** There were three perinatal deaths all of which were in the breast stimulation arm of one trial (1.8% versus 0%, RR 8.17, 95% CI 0.45 to 147.76)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

			hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.		☐ Inappropriate pooled analysis
Author: Singh N., et al. Year Published: 2014 Location: India Journal: *BioMed Research International*	To elicit the safety and efficacy of breast stimulation as an intervention to prevent postdatism and as an aid in spontaneous onset of labour.	**Size:** 200 women **Inclusion Criteria**: Primigravidas with cephalic presentation, without any high-risk factor, were recruited between 36 to 38 weeks of gestation.	**Type**: RCT **Intervention**: Breast stimulation was advised to one group but not to the other group. Bishop's scoring was done at 38 weeks and repeated at 39 weeks of gestation. Maternal and fetal outcomes were compared in two groups.	**Results:** There were 2 perinatal deaths, one in each study arm.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Kavanagh, J., et al. (2005). "Breast stimulation for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(3): CD003392.
Singh N. (2014). "Breast stimulation in low-risk primigravidas at term: does it aid in spontaneous onset of labour and vaginal delivery? A pilot study." BioMed Research International

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Breast stimulation versus usual care
Outcome: Not in labour after 72 hours

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:		**Lower Quality Rating if:**		**Other Considerations:**	
☐ High ☐ Medium ☒ Low		☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kavanagh, J., et al. Year Published: 2005 Location Journal: *Cochrane Database of Systematic Reviews*	To determine the effectiveness of clinical trials of breast stimulation for third trimester cervical ripening or labour induction.	**Size:** 4 studies, 437 women **Inclusion Criteria**: Clinical trials of breast stimulation for third trimester cervical ripening or labour induction.	**Type**: Systematic Review **Intervention**: RCTS Clinical trials of breast stimulation for third trimester cervical ripening or labour induction (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** There was a reduction in the number of women not in labour after 72 hours in women who had used breast stimulation when compared with no treatment (62.7% versus 93.6%, RR 0.67, 95% CI 0.60 to 0.74)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Kavanagh, J., et al. (2005). "Breast stimulation for cervical ripening and induction of labour." Cochrane Database of Systematic Reviews(3): CD003392.

Membrane Sweeping

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Sweeping the membranes versus no treatment
Outcome: Caesarean section

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:		**Lower Quality Rating if:**		**Other Considerations:**	
☐ High ☐ Medium ☒ Low		☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Boulvain, M., et al Year Published: 2005 Location Journal: Cochrane Database of Systematic Reviews	To determine the effects of membrane sweeping for third trimester induction of labour.	**Size:** 19 studies, 2389 women **Inclusion Criteria**: Clinical trials of membrane sweeping for third trimester induction.	**Type**: Systematic Review **Intervention**: RCTS Clinical trials of membrane sweeping for third trimester induction (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** The risk of caesarean section was not modified by the intervention (relative risk (RR): 0.90; 95% confidence interval (CI): 0.70 to 1.15).)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Boulvain, M., et al. (2005). "Membrane sweeping for induction of labour." Cochrane Database of Systematic Reviews(1): CD000451

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Sweeping the membranes versus no treatment
Outcome: Spontaneous labor within 48 hours or one week

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Boulvain, M., et al Year Published: 2005 Location Journal: Cochrane Database of Systematic Reviews	To determine the effects of membrane sweeping for third trimester induction of labour.	**Size:** 19 studies, 2389 women **Inclusion Criteria**: Clinical trials of membrane sweeping for third trimester induction.	**Type**: Systematic Review **Intervention**: RCTS Clinical trials of membrane sweeping for third trimester induction (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** Sweeping the membranes increased the likelihood of either spontaneous labour within 48 hours (RR: 0.77; 95% CI: 0.70 to 0.84) or of delivery within one week (RR: 0.71; 95% CI: 0.65 to 0.78). Sweeping the membranes performed as a general policy from 38 to 40 weeks onwards decreased the frequency of 'post-term' pregnancy defined as pregnancy continuing beyond 42 weeks (RR: 0.28; 95% CI: 0.15 to 0.50; NNT: 11) and beyond 41 weeks (RR: 0.59; 95% CI: 0.46 to 0.74; NNT: 9)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Boulvain, M., et al. (2005). "Membrane sweeping for induction of labour." Cochrane Database of Systematic Reviews(1): CD000451

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Sweeping the membranes versus no treatment
Outcome: Formal induction of labor

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Boulvain, M., et al Year Published: 2005 Location Journal: Cochrane Database of Systematic Reviews	To determine the effects of membrane sweeping for third trimester induction of labour.	**Size:** 19 studies, 2389 women **Inclusion Criteria**: Clinical trials of membrane sweeping for third trimester induction.	**Type**: Systematic Review **Intervention**: RCTS Clinical trials of membrane sweeping for third trimester induction (1) vaginal delivery not achieved within 24 hours; (2) uterine hyperstimulation with fetal heart rate (FHR) changes; (3) caesarean section; (4) serious neonatal morbidity or perinatal death; (5) serious maternal morbidity or death.	**Results:** A reduction in the formal induction of labour in women allocated to sweeping was reported in most trials (RR: 0.60; 95% CI: 0.51 to 0.71). The overall risk reduction in the available trials was 14%. About eight women need to have sweeping of membranes to avoid one formal induction of labour.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Boulvain, M., et al. (2005). "Membrane sweeping for induction of labour." Cochrane Database of Systematic Reviews(1): CD000451

Sexual Intercourse

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Pregnant women
Modality: Sexual intercourse
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☒ High
☐ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Omar N., et al. Year Published: 2013 Location: Malaysia Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To evaluate the effect of suggesting coitus as a safe and effective means to expedite labour on pregnancy duration and requirement for labour induction.	**Size:** 1200 women **Inclusion Criteria**: Gestation of 35-38 weeks, with a straightforward pregnancy (i.e. viable, singleton and cephalic presentation, with no placenta previa, antepartum hemorrhage, ruptured membranes, previous caesarean section, hypertension, diabetes, significant medical history, fetal growth restriction, fetal anomalies or previous stillbirth).	**Type**: RCT **Intervention**: Women assigned to the advise-coitus arm were told that vaginal intercourse at term can be used as a natural method to safely expedite labour, and may hence reduce the need for induction of labour. They were further told that frequent intercourse can be more effective. They were advised to start vaginal intercourse after 36 weeks of gestation. Women who wanted more information were	**Results:** Pregnancy duration, as represented by the gestational age at delivery of 39.4 ± 1.2 versus 39.5 ± 1.2 weeks (P = 0.112), the intervention to delivery interval of 3.2 ± 1.4 versus 3.3 ± 1.3 weeks (P = 0.417) and the labour induction rates of 126/574 (22.0%) versus 120/576 (20.8%) (RR 1.1, 95% CI 0.8-1.4, P = 0.666) did not differ across the advise-coitus versus control trial arms.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

			consistently informed that vaginal intercourse at term is a natural, safe and effective method for initiating labour. For women allocated to the control group, interaction after randomization was kept as short as possible, with the impression given that the women were participating in a diary-based activity study of coitus. The controls were told that sexual intercourse is safe but its effect on labour was uncertain. Controls that wanted additional information were referred to the common information leaflet given to all participants.		
Author: Schaffir, J. Year Published: 2006 Location: USA Journal: *Obstetrics & Gynecology*	To determine whether sexual intercourse at term hastens the onset of labor and to observe its effect on cervical status.	**Size:** 95 women **Inclusion Criteria**: 18 years of age and had low-risk singleton pregnancies. Low risk was defined as being free of any chronic medical conditions that would interfere with sexual activity or fetal issues that would require activity restrictions. **Exclusion Criteria:** Patients were excluded from consideration if they had any contraindication to vaginal delivery, such as active genital herpes, breech presentation, or placenta previa, or if they had a cesarean delivery scheduled.	**Type**: Prospective Cohort **Intervention**: Each participant in the study was enrolled at the next office visit after completing her 37th week of pregnancy. At this visit and each subsequent routine visit, the subject was asked whether she had engaged in penile-vaginal intercourse during the preceding week. If so, the subject was also asked how many episodes of intercourse occurred and whether a condom was used. Women who had intercourse at any time during term were assigned to the sexually active group. Cervical examination was performed at each routine weekly visit, and a Bishop score was assigned.	**Results:** The gestational age at delivery of those women who were sexually active at term was greater than those who were not (39.9 weeks versus 39.3 weeks; P = .001). There was no difference in Bishop score between women who had sex in the previous week and those who had not. After adjusting for the effect of time, those who were sexually active the previous week had Bishop scores that were, on average, lower by 0.26 (95% confidence interval -1.26 to 0.74, P = .61) compared with those who abstained.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

Author: Tan, P. C., et al. Year Published: 2007 Location: Malaysia Journal: *Obstetrics & Gynecology*	To estimate the effect of coitus on the onset of labor.	**Size:** 215 women **Inclusion Criteria**: Induction of labor scheduled at term (37 weeks or later), a viable singleton fetus, intact membranes, and cephalic presentation. **Exclusion Criteria:** Previous cesarean scar and known gross fetal anomaly.	**Type**: RCT **Intervention**: Women randomly assigned to the advised-coitus group were told that sexual intercourse in late pregnancy was safe and could promote onset of labor. They were told that induced labor was associated with operative delivery and a more prolonged process compared with spontaneous labor. They were asked to have sex as frequently as possible before their appointment for labor induction. They were also required until delivery to keep a daily diary on vaginal sexual intercourse and orgasms they achieved during sex. For women randomly assigned to no advice, counseling was kept as short as possible. These women were told that sex was safe but the effect was unclear on promotion of labor onset. They were asked to keep the same diary. To keep the approach to the control group as neutral as possible, women allocated to the no-advice group (control) who wanted additional information were referred to the information leaflet given to all study women.	**Results:** More women advised to have sex reported coital activity: 60.2% compared with 39.6% (relative risk 1.5, 95% confidence interval [CI] 1.1–2.0, P=.004) compared with controls, but spontaneous labor onset was no different: 55.6% compared with 52.0% (relative risk 1.1, 95% CI 0.8 – 1.4, P=.68).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Omar, N. S., et al. (2013). "Coitus to expedite the onset of labour: a randomised trial." BJOG: An International Journal of Obstetrics & Gynaecology 120(3): 338-345.
Schaffir, J. (2006). "Sexual intercourse at term and onset of labor." Obstetrics & Gynecology 107(6): 1310-1314.
Tan, P. C., et al. (2007). "Effect of coital activity on onset of labor in women scheduled for labor induction: a randomized controlled trial." Obstetrics & Gynecology 110(4): 820-826

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Pregnant women
Modality: Sexual intercourse
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Omar N., et al. Year Published: 2013 Location: Malaysia Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To evaluate the effect of suggesting coitus as a safe and effective means to expedite labour on pregnancy duration and requirement for labour induction.	**Size:** 1200 women **Inclusion Criteria**: Gestation of 35-38 weeks, with a straightforward pregnancy (i.e. viable, singleton and cephalic presentation, with no placenta previa, antepartum hemorrhage, ruptured membranes, previous caesarean section, hypertension, diabetes, significant medical history, fetal growth restriction, fetal anomalies or previous stillbirth).	**Type**: RCT **Intervention**: Women assigned to the advise-coitus arm were told that vaginal intercourse at term can be used as a natural method to safely expedite labour, and may hence reduce the need for induction of labour. They were further told that frequent intercourse can be more effective. They were advised to start vaginal intercourse after 36 weeks of gestation. Women who wanted more information were consistently informed that vaginal intercourse at term is a	**Results:** There was no significant difference in postpartum blood loss, umbilical arterial cord pH, Apgar score at 5 minutes, birthweight, perinatal mortality rate or neonatal intensive care admission rate between the trial arms.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

			natural, safe and effective method for initiating labour. For women allocated to the control group, interaction after randomization was kept as short as possible, with the impression given that the women were participating in a diary-based activity study of coitus. The controls were told that sexual intercourse is safe but its effect on labour was uncertain. Controls that wanted additional information were referred to the common information leaflet given to all participants.		
Author: Schaffir, J. Year Published: 2006 Location: USA Journal: *Obstetrics & Gynecology*	To determine whether sexual intercourse at term hastens the onset of labor and to observe its effect on cervical status.	**Size:** 95 women **Inclusion Criteria**: 18 years of age and had low-risk singleton pregnancies. Low risk was defined as being free of any chronic medical conditions that would interfere with sexual activity or fetal issues that would require activity restrictions. **Exclusion Criteria:** Patients were excluded from consideration if they had any contraindication to vaginal delivery, such as active genital herpes, breech presentation, or placenta previa, or if they had a cesarean delivery scheduled.	**Type**: Prospective cohort **Intervention**: Each participant in the study was enrolled at the next office visit after completing her 37th week of pregnancy. At this visit and each subsequent routine visit, the subject was asked whether she had engaged in penile-vaginal intercourse during the preceding week. If so, the subject was also asked how many episodes of intercourse occurred and whether a condom was used. Women who had intercourse at any time during term were assigned to the sexually active group. Cervical examination was performed at each routine weekly visit, and a Bishop score was assigned.	**Results:** Fewer total inductions were performed in the abstinent group, there was only one subject in each group induced for post-due date (past 41 completed weeks of pregnancy). Six inductions in the sexually active group and one in the abstinent group were elective. No significant difference existed between the mode of delivery in the two groups. The presence or absence of sexual activity had no relationship to the infant's birth weight, Apgar scores, or likelihood of being admitted to the NICU.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

Author: Tan, P. C., et al. Year Published: 2007 Location: Malaysia Journal: *Obstetrics & Gynecology*	To estimate the effect of coitus on the onset of labor.	**Size:** 215 women **Inclusion Criteria**: Induction of labor scheduled at term (37 weeks or later), a viable singleton fetus, intact membranes, and cephalic presentation. **Exclusion Criteria:** Previous cesarean scar and known gross fetal anomaly	**Type**: RCT **Intervention**: Women randomly assigned to the advised-coitus group were told that sexual intercourse in late pregnancy was safe and could promote onset of labor. They were told that induced labor was associated with operative delivery and a more prolonged process compared with spontaneous labor. They were asked to have sex as frequently as possible before their appointment for labor induction. They were also required until delivery to keep a daily diary on vaginal sexual intercourse and orgasms they achieved during sex. For women randomly assigned to no advice, counseling was kept as short as possible. These women were told that sex was safe but the effect was unclear on promotion of labor onset. They were asked to keep the same diary. To keep the approach to the control group as neutral as possible, women allocated to the no-advice group (control) who wanted additional information were referred to the information leaflet given to all study women.	**Results:** Adverse neonatal outcomes were uncommon and was no different between the randomized groups.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Omar, N. S., et al. (2013). "Coitus to expedite the onset of labour: a randomised trial." BJOG: An International Journal of Obstetrics & Gynaecology 120(3): 338-345.
Schaffir, J. (2006). "Sexual intercourse at term and onset of labor." Obstetrics & Gynecology 107(6): 1310-1314.
Tan, P. C., et al. (2007). "Effect of coital activity on onset of labor in women scheduled for labor induction: a randomized controlled trial." Obstetrics & Gynecology 110(4): 820-826

Question 4: What are the harms and benefits of mechanical (e.g. Foley catheter) methods?

Double-balloon vs. single balloon catheter

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: Cesarean section

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Yang, F., et al. Year Published: 2018 Location: Journal: *Journal of Obstetrics & Gynaecology*	To compare the use of single-balloon to double-balloon catheters for cervical ripening and labor induction.	**Size:** 4 trials (796 women) **Inclusion Criteria**: RCTs comparing single vs double balloon catheters in women undergoing cervical ripening or induction of labor.	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women.	**Results:** There were no significant differences in the rate of cesarean (RR 1.09, 95% CI 0.86-1.38; P = 0.48)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Yang, F., et al. (2018). "Double-balloon versus single-balloon catheter for cervical ripening and labor induction: A systematic review and meta-analysis." Journal of Obstetrics & Gynaecology Research 44(1): 27-34.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: Vaginal deliveries within 24 h

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Yang, F., et al. Year Published: 2018 Location: Journal: *Journal of Obstetrics & Gynaecology*	To compare the use of single-balloon to double-balloon catheters for cervical ripening and labor induction.	**Size:** 3 trials (608 women) **Inclusion Criteria**: RCTs comparing single vs double balloon catheters in women undergoing cervical ripening or induction of labor.	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women.	**Results:** There were no significant differences in the rate of vaginal deliveries within 24 h (RR 0.94, 95% CI 0.82-1.09; P = 0.42)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Yang, F., et al. (2018). "Double-balloon versus single-balloon catheter for cervical ripening and labor induction: A systematic review and meta-analysis." Journal of Obstetrics & Gynaecology Research 44(1): 27-34.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: Bishop score increment

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Yang, F., et al. Year Published: 2018 Location: Journal: *Journal of Obstetrics & Gynaecology*	To compare the use of single-balloon to double-balloon catheters for cervical ripening and labor induction.	**Size:** 2 trials (391 women) **Inclusion Criteria**: RCTs comparing single vs double balloon catheters in women undergoing cervical ripening or induction of labor .	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women.	**Results:** There were no significant differences in Bishop score improvement (MD 0.62, 95%CI -0.18, 1.42; P = 0.13).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Yang, F., et al. (2018). "Double-balloon versus single-balloon catheter for cervical ripening and labor induction: A systematic review and meta-analysis." Journal of Obstetrics & Gynaecology Research 44(1): 27-34.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: Apgar scores < 7 at 5min

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*
☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Yang, F., et al. Year Published: 2018 Location: Journal: *Journal of Obstetrics & Gynaecology*	To compare the use of single-balloon to double-balloon catheters for cervical ripening and labor induction.	**Size:** 4 trials (796 women) **Inclusion Criteria**: RCTs comparing single vs double balloon catheters in women undergoing cervical ripening or induction of labor.	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women.	**Results:** There were no significant differences in Apgar scores <7 at 5 min (RR 0.56, 95% CI 0.16-1.98; P = 0.42)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Gommers, J. S. M., et al. Year Published: 2017 Location: Journal: *European Journal of Obstetrics, Gynecology, & Reproductive Biology*	To evaluate the safety of labour induction with a transcervical balloon catheter by conducting a literature review with pooled risk assessments of the maternal, fetal and neonatal morbidity.	**Size:** 49 trials (10044 women) **Inclusion Criteria**: RCTs, quasi RCTs, cohort studies and case-controlled studies that compared the use of the balloon catheter. regardless of volume and application of tension, with any other	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women Outcomes: infection, abnormal uterine activity, hemorrhage, major maternal adverse events, minor	**Results:** Overall 200/10044 infants had apgar scores <7 at 5 min (2%) 2.1% in the single balloon and 0.88% in double balloon group .	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

		induction method or spontaneous onset of labour. The balloon catheter could either have a single or double lumen. Studies were eligible if they reported on maternal. fetal or neonatal outcomes as part of the primary or secondary aim and contained original data on the occurrence of adverse events. Both studies on women with intact membranes and premature rupture of membranes (PROM) were included. If an article expressly stated the absence of adverse events in the studied population, it was also included.	maternal adverse events, fetal and neonatal adverse events.		☐ Inappropriate pooled analysis

References:

Yang, F., et al. (2018). "Double-balloon versus single-balloon catheter for cervical ripening and labor induction: A systematic review and meta-analysis." Journal of Obstetrics & Gynaecology Research 44(1): 27-34.

Gommers, J. S. M., et al. (2017). "Risk of maternal, fetal and neonatal complications associated with the use of the transcervical balloon catheter in induction of labour: A systematic review." European Journal of Obstetrics, Gynecology, & Reproductive Biology 218: 73-84

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: NICU admission

Quality (certainty) of evidence for: (outcome)		
☒ High ☐ Moderate ☐ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient

		☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Gommers, J. S. M., et al. Year Published: 2017 Location: Journal: *European Journal of Obstetrics, Gynecology, & Reproductive Biology*	To evaluate the safety of labour induction with a transcervical balloon catheter by conducting a literature review with pooled risk assessments of the maternal, fetal and neonatal morbidity.	**Size:** 39 trials (9065 women) **Inclusion Criteria**: RCTs, quasi RCTs, cohort studies and case-controlled studies that compared the use of the balloon catheter. regardless of volume and application of tension, with any other induction method or spontaneous onset of labour. The balloon catheter could either have a single or double lumen. Studies were eligible if they reported on maternal. fetal or neonatal outcomes as part of the primary or secondary aim and contained original data on the occurrence of adverse events. Both studies on women with intact membranes and premature rupture of membranes (PROM) were included. If an article expressly stated the absence of adverse events in the studied population, it was also included.	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women Outcomes: infection, abnormal uterine activity, hemorrhage, major maternal adverse events, minor maternal adverse events, fetal and neonatal adverse events.	**Results:** Overall 650/9065 infants were admitted into the NICU (7.2%) 6.8% in the single balloon and 12.8% in double balloon group.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Gommers, J. S. M., et al. (2017). "Risk of maternal, fetal and neonatal complications associated with the use of the transcervical balloon catheter in induction of labour: A systematic review." European Journal of Obstetrics, Gynecology, & Reproductive Biology 218: 73-84

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: Abnormal uterine activity

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Gommers, J. S. M., et al. Year Published: 2017 Location: Journal: *European Journal of Obstetrics, Gynecology, & Reproductive Biology*	To evaluate the safety of labour induction with a transcervical balloon catheter by conducting a literature review with pooled risk assessments of the maternal, fetal and neonatal morbidity.	**Size:** 51 trials (5439 women) **Inclusion Criteria**: RCTs, quasi RCTs, cohort studies and case-controlled studies that compared the use of the balloon catheter. regardless of volume and application of tension, with any other induction method or spontaneous onset of labour. The balloon catheter could either have a single or double lumen. Studies were eligible if they reported on maternal. fetal or neonatal outcomes as part of the primary or secondary aim and contained original data on the occurrence of adverse events. Both studies on women with intact membranes and premature rupture of membranes (PROM) were included. If an article expressly stated the absence of	**Type:** Systematic Review **Intervention**: RCTs comparing single vs. double balloon catheters in women Outcomes: infection, abnormal uterine activity, hemorrhage, major maternal adverse events, minor maternal adverse events, fetal and neonatal adverse events.	**Results:** Overall 148/5439 (2.7%) women experiences abnormal uterine activity. 2.9% in the single balloon arm and 0.96% in the double balloon arm.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		adverse events in the studied population, it was also included.			

References:

Gommers, J. S. M., et al. (2017). "Risk of maternal, fetal and neonatal complications associated with the use of the transcervical balloon catheter in induction of labour: A systematic review." European Journal of Obstetrics, Gynecology, & Reproductive Biology 218: 73-84

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double-balloon versus single balloon catheter
Outcome: Chorioamnionitis

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Gommers, J. S. M., et al. Year Published: 2017 Location: Journal: *European Journal of Obstetrics, Gynecology, & Reproductive Biology*	To evaluate the safety of labour induction with a transcervical balloon catheter by conducting a literature review with pooled risk assessments of the maternal, fetal and neonatal morbidity.	**Size:** 15 trials (1807women) **Inclusion Criteria**: RCTs, quasi RCTs, cohort studies and case-controlled studies that compared the use of the balloon catheter. regardless of volume and application of tension, with any other induction method or spontaneous onset of labour.	**Type:** Systematic Review **Intervention**: RCTs comparing single vs double balloon catheters in women Outcomes: infection, abnormal uterine activity, hemorrhage, major maternal adverse events, minor maternal adverse events, fetal and neonatal adverse events.	**Results:** Overall 60/1807 (3.3%) women had chorioamnionitis. All in the single balloon group.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		The balloon catheter could either have a single or double lumen. Studies were eligible if they reported on maternal. fetal or neonatal outcomes as part of the primary or secondary aim and contained original data on the occurrence of adverse events. Both studies on women with intact membranes and premature rupture of membranes (PROM) were included. If an article expressly stated the absence of adverse events in the studied population, it was also included.			

References:

Gommers, J. S. M., et al. (2017). "Risk of maternal, fetal and neonatal complications associated with the use of the transcervical balloon catheter in induction of labour: A systematic review." European Journal of Obstetrics, Gynecology, & Reproductive Biology 218: 73-84

Laminaria tent

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Laminaria tent versus usual care
Outcome: Caesarean section

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** Five studies (372 women) **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject fluids in the extra-amniotic space.	**Results:** There was no evidence of a modification of the risk of caesarean section using laminaria (RR 0.98; 95% CI 0.74-1.30).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Laminaria versus any prostaglandins
Outcome: Caesarean section

Quality (certainty) of evidence for: (outcome)		
☒ High ☐ Moderate ☐ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

		☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*			
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** 11 studies, 1397 women **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject fluids in the extra-amniotic space.	**Results:** The risk of caesarean section is similar between groups (RR 1.11; 95% CI: 0.92-1.32)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Laminaria versus any prostaglandins
Outcome: Hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

		☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** 5 studies, 538 women **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject fluids in the extra-amniotic space.	**Results:** Less hyperstimulation with FHR changes occurred when laminaria were used, compared with any prostaglandins (RR 0.13; 95% CI 0.04- 0.48)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

Foley catheter balloon vs. any prostaglandins

BODY OF EVIDENCE APPRAISAL TABLE FOR: Population: Women undergoing induction of labor Modality: Foley catheter balloon versus any prostaglandins Outcome: Vaginal delivery not achieved in 24h
Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** 7 studies, 1142 women **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject fluids in the extra-amniotic space.	**Results:** Women in the balloon catheter groups had a non-statistically increased risk of not achieving vaginal delivery within 24 hours as women in the prostaglandin group (48% versus 38%) (RR 1.26; 95% CI 0.94 to 1.68;random-effects T^2 0.10, I^2 73%).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Vaknin, Z., et al. Year Published: 2010 Location: Israel Journal: American Journal of Obstetrics & Gynecology	To compare the efficacy and safety of cervical ripening and labor induction by Foley catheter balloon (FCB) vs locally applied prostaglandins (LAPG) in the third trimester of pregnancy.	**Size:** 13 trials, 1779 women **Inclusion Criteria**: Randomized clinical trials that evaluated the use of an extra amniotic catheter balloon, with or without EASI, and/or intravenous oxytocin (IVO) vs LAPG for cervical ripening and labor induction in women with unfavorable cervices during the third trimester of pregnancy.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes that are included in the analysis addressed the efficacy and safety (side-effects) of each method.	**Results:** The pooled statistical estimate for women who delivered vaginally by 24h was not significantly different between subjects who had cervical ripening with FCB and LAPG RR=0.94 (0.79-1.11 P=0.45).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

Vaknin, Z., et al. (2010). "Foley catheter balloon vs locally applied prostaglandins for cervical ripening and labor induction: a systematic review and metaanalysis." American Journal of Obstetrics & Gynecology 203(5): 418-429.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter balloon versus any prostaglandins
Outcome: Caesarean section

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** 21 studies, 3202 women **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject	**Results:** (27%versus 25%) (RR 1.01; 95%CI 0.90 -1.13)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			fluids in the extra-amniotic space.		
Author: Vaknin, Z., et al. Year Published: 2010 Location: Israel Journal: American Journal of Obstetrics & Gynecology	To compare the efficacy and safety of cervical ripening and labor induction by Foley catheter balloon (FCB) vs locally applied prostaglandins (LAPG) in the third trimester of pregnancy.	**Size:** 27 trials 3532 women **Inclusion Criteria**: Randomized clinical trials that evaluated the use of an extra amniotic catheter balloon, with or without EASI, and/or intravenous oxytocin (IVO) vs LAPG for cervical ripening and labor induction in women with unfavorable cervices during the third trimester of pregnancy.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes that are included in the analysis addressed the efficacy and safety (side-effects) of each method.	**Results:** The pooled statistical estimate for cesarean delivery was not significantly different between subjects who had cervical ripening with FCB and LAPG RR=0.97 (0.87-1.10 P=0.67)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

Vaknin, Z., et al. (2010). "Foley catheter balloon vs locally applied prostaglandins for cervical ripening and labor induction: a systematic review and metaanalysis." American Journal of Obstetrics & Gynecology 203(5): 418-429.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter balloon versus any prostaglandins
Outcome: Hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** 9 studies, 1931 **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject fluids in the extra-amniotic space.	**Results:** Less hyperstimulation with FHR changes occurred when balloon catheters were used, compared with any prostaglandins (0.4%versus 3%) (RR 0.19; 95%CI 0.08-0.43)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Vaknin, Z., et al. Year Published: 2010 Location: Israel Journal: American Journal of Obstetrics & Gynecology	To compare the efficacy and safety of cervical ripening and labor induction by Foley catheter balloon (FCB) vs locally applied prostaglandins (LAPG) in the third trimester of pregnancy.	**Size:** 21 trials 2661 women **Inclusion Criteria**: Randomized clinical trials that evaluated the use of an extra amniotic catheter balloon, with or without EASI, and/or intravenous oxytocin (IVO) vs LAPG for cervical ripening and labor induction in women with unfavorable cervices during the third trimester of pregnancy.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes that are included in the analysis addressed the efficacy and safety (side-effects) of each method.	**Results:** Cervical ripening with prostaglandins was associated with a significantly increased risk of excessive uterine activity (tachysystole or hyper-stimulation or hypertonus), compared with FCB ripening (RR, 2.35; 95% confidence interval [CI], 1.41-3.90; P = .001)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

Vaknin, Z., et al. (2010). "Foley catheter balloon vs locally applied prostaglandins for cervical ripening and labor induction: a systematic review and metaanalysis." American Journal of Obstetrics & Gynecology 203(5): 418-429.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor

Modality: Foley catheter balloon versus any prostaglandins

Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)

☐ High
☒ Moderate
☐ Low

☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Jozwiak, M., et al. Year Published: 2012 Location: USA Journal: *Cochrane Database of Systematic Reviews*	To determine the effects of mechanical methods for third trimester cervical ripening or induction of labour in comparison with placebo/no treatment, prostaglandins (vaginal and intracervical prostaglandin E2 (PGE2), misoprostol) and oxytocin.	**Size:** 1 study, 330 **Inclusion Criteria**: Clinical trials comparing mechanical methods used for third trimester cervical ripening or labour induction with methods.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Different types of intervention have been considered as mechanical methods: (1) introduction of laminaria tents, or their synthetic equivalent (Dilapan), into the cervical canal; (2) the introduction of a catheter through the cervix into the extra-amniotic space, with or without traction; (3) use of a catheter to inject fluids in the extra-amniotic space.	**Results:** The outcomes were reported as on a visual analogue scale, showing the least discomfort in the single balloon group with 36% of women reporting a pain score > 4, compared with 63% in the PGE2 group and 55% in the double balloon group (P < 0.001). Overall satisfaction was comparable between groups, with a median score of 8/10 (P = 0.18)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References: Jozwiak, M., et al. (2012). "Mechanical methods for induction of labour." Cochrane Database of Systematic Reviews(3): CD001233.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter balloon versus any prostaglandins
Outcome: Pooled maternal infections

Quality (certainty) of evidence for: (outcome) ☒ High ☐ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: McMaster, K., et al. Year Published: 2015 Location: USA Journal: *Obstetrics & Gynecology*	To evaluate associations between Foley catheter use for cervical ripening and infectious morbidity.	**Size:** 26 trials 5,563 women (2,699 in the Foley arm and 2,864 in the prostaglandin arm) **Inclusion Criteria**: Prospective, RCTs that evaluated maternal or neonatal infection were selected. Selected trials assessed at least one of the following outcomes: chorioamnionitis, endometritis, overall maternal infection, or neonatal infection.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Selected trials assessed at least one of the following outcomes: chorioamnionitis, endometritis, overall maternal infection, or neonatal infection.	**Results:** Compared with vaginal or cervical prostaglandin preparations alone, there was no significant difference for pooled maternal infection (RR 0.95, 95% CI 0.81– 1.12).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Vaknin, Z., et al. Year Published: 2010 Location: Israel Journal: American Journal of Obstetrics & Gynecology	To compare the efficacy and safety of cervical ripening and labor induction by Foley catheter balloon (FCB) vs locally applied prostaglandins (LAPG) in the third trimester of pregnancy.	**Size:** 19 trials 2421 women **Inclusion Criteria**: Randomized clinical trials that evaluated the use of an extra amniotic catheter balloon, with or without EASI, and/or intravenous oxytocin (IVO) vs LAPG for cervical ripening and labor induction in women with unfavorable cervices during the third trimester of pregnancy.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes that are included in the analysis addressed the efficacy and safety (side-effects) of each method.	**Results:** Compared with prostaglandin preparations, there was no significant difference in women with intra and/or post-partum fever (RR 0.93, 95% CI 0.72–1.21).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Heinemann, J., et al Year Published: 2008 Location: USA Journal: American Journal of Obstetrics & Gynecology	The purpose of this study was to review and compare the use of Foley catheter, with or without extraamniotic saline solution infusion, Laminaria, or hygroscopic dilators for cervical ripening or induction with pharmacologic agents or placebo.	**Size:** 11 trials 2367 women **Inclusion Criteria**: RCTs that assessed the safety and efficacy of transcervical Foley catheter (with or without EASI), Laminaria, or hygro-scopic dilators for cervical ripening. Selected trials assessed at least 1 of the following outcomes: chorioamnionitis (intraamniotic infection), endomyometritis, maternal infection, neonatal infection, or sepsis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes: chorioamnionitis (intraamniotic infection), endomyometritis, maternal infection, neonatal infection, or sepsis.	**Results:** A significant increase in maternal infection among patients who underwent cervical ripening with Foley catheter alone vs a pharmacologic agent (OR, 1.50; 95% CI, 1.07-2.09).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

McMaster, K., et al. (2015). "Balancing the efficacy and safety of misoprostol: a meta-analysis comparing 25 versus 50 micrograms of intravaginal misoprostol for the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 122(4): 468-476.

Vaknin, Z., et al. (2010). "Foley catheter balloon vs locally applied prostaglandins for cervical ripening and labor induction: a systematic review and metaanalysis." American Journal of Obstetrics & Gynecology 203(5): 418-429.

Heinemann, J., et al. (2008). "Do mechanical methods of cervical ripening increase infectious morbidity? A systematic review." American Journal of Obstetrics & Gynecology 199(2): 177-187; discussion 187-178.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Foley catheter balloon versus any prostaglandins
Outcome: Chorioamnionitis/Maternal fever rates

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: McMaster, K., et al. Year Published: 2015 Location: USA Journal: *Obstetrics & Gynecology*	To evaluate associations between Foley catheter use for cervical ripening and infectious morbidity.	**Size:** 9 trials 1536 women (782 in the Foley arm and 754 in the prostaglandin arm) **Inclusion Criteria**: Prospective, RCTs that evaluated maternal or neonatal infection were selected. Selected trials assessed at least one of the following outcomes: chorioamnionitis, endometritis, overall maternal infection, or neonatal infection.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Selected trials assessed at least one of the following outcomes: chorioamnionitis, endometritis, overall maternal infection, or neonatal infection.	**Results:** Compared with vaginal or cervical prostaglandin preparations alone, there was no significant difference in chorio rates (RR 0.96, 95% CI 0.66– 1.38)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Heinemann, J., et al Year Published: 2008 Location: USA Journal: American Journal of Obstetrics & Gynecology	The purpose of this study was to review and compare the use of Foley catheter, with or without extraamniotic saline solution infusion, Laminaria, or hygroscopic dilators for cervical ripening or induction with pharmacologic agents or placebo.	**Size:** 11 trials 2367 women **Inclusion Criteria**: RCTs that assessed the safety and efficacy of transcervical Foley catheter (with or without EASI), Laminaria, or hygro-scopic dilators for cervical ripening. Selected trials assessed at least 1 of the following outcomes: chorioamnionitis (intraamniotic infection), endomyometritis, maternal infection, neonatal infection, or sepsis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes: chorioamnionitis (intraamniotic infection), endomyometritis, maternal infection, neonatal infection, or sepsis.	**Results:** The incidence of chorioamnionitis was increased significantly in patients whose pregnancy was ripened with Foley catheter alone (OR, 2.05; 95% CI, 1.22-3.44).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

McMaster, K., et al. (2015). "Balancing the efficacy and safety of misoprostol: a meta-analysis comparing 25 versus 50 micrograms of intravaginal misoprostol for the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology 122(4): 468-476.

Heinemann, J., et al. (2008). "Do mechanical methods of cervical ripening increase infectious morbidity? A systematic review." American Journal of Obstetrics & Gynecology 199(2): 177-187; discussion 187-178.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter balloon versus any prostaglandins
Outcome: Neonatal infection

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Heinemann, J., et al Year Published: 2008 Location: USA Journal: American Journal of Obstetrics & Gynecology	The purpose of this study was to review and compare the use of Foley catheter, with or without extraamniotic saline solution infusion, Laminaria, or hygroscopic dilators for cervical ripening or induction with pharmacologic agents or placebo.	**Size:** 11 trials 2367 women **Inclusion Criteria**: RCTs that assessed the safety and efficacy of transcervical Foley catheter (with or without EASI), Laminaria, or hygro-scopic dilators for cervical ripening. Selected trials assessed at least 1 of the following outcomes: chorioamnionitis (intraamniotic infection), endomyometritis, maternal infection, neonatal infection, or sepsis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes: chorioamnionitis (intraamniotic infection), endomyometritis, maternal infection, neonatal infection, or sepsis.	**Results:** Although elevated, risks of neonatal infection rates in those patients whose pregnancy was ripened with Foley catheter (OR, 1.2; 95% CI, 0.48- 2.97) did not achieve statistical significance .	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Heinemann, J., et al. (2008). "Do mechanical methods of cervical ripening increase infectious morbidity? A systematic review." American Journal of Obstetrics & Gynecology 199(2): 177-187; discussion 187-178.

Population: Women with previous cesarean section Modality: Intracervical Foley catheter balloon versus other methods

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with previous cesarean section
Modality: Intracervical Foley catheter balloon versus other methods

Outcome: Uterine Rupture

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Kehl, S., et al. Year Published: 2016 Location: Germany Journal: *European Journal of Obstetrics, Gynecology, & Reproductive Biology*	To systematically review the application of balloon catheters for cervical ripening and labor induction at term after previous cesarean section.	**Size:** 16 trials (1447 women) **Inclusion Criteria**: All pregnancies at term with previous cesarean section were included (population) when cervical ripening or labor induction was conducted with balloon catheters (e.g., single-balloon, double-balloon, Foley) (interven-tion). Cervical ripening/labor induction with these mechanical devices was compared with any other methods or spontaneous onset of labor (comparison).	**Type:** Systematic Review **Intervention**: See inclusion criteria.	**Results:** Among all women with the balloon catheter (n = 1447) 18 had uterine rupture (1.2%), while the rate of uterine rupture was 0.7% in women with spontaneous onset of labor (45/6364). None happened during cervical ripening.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Kehl, S., et al. (2016). "Balloon catheters for induction of labor at term after previous cesarean section: a systematic review." European Journal of Obstetrics, Gynecology, & Reproductive Biology 204: 44-50.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women with previous cesarean section
Modality: Intracervical Foley catheter balloon versus spontaneous onset of labor
Outcome: Mode of delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Kehl, S., et al. Year Published: 2016 Location: Germany Journal: *European Journal of Obstetrics, Gynecology, & Reproductive Biology*	To systematically review the application of balloon catheters for cervical ripening and labor induction at term after previous cesarean section.	**Size:** 4 trials (362 women) **Inclusion Criteria**: All pregnancies at term with previous cesarean section were included (population) when cervical ripening or labor induction was conducted with balloon catheters (e.g., single-balloon, double-balloon, Foley) (interven-tion). Cervical ripening/labor induction with these mechanical devices was compared with any other methods or spontaneous onset of labor (comparison).	**Type:** Systematic Review **Intervention**: See inclusion criteria.	**Results:** The vaginal delivery rate was 56.4% when labor was induced mechanically and 75.0% after spontaneous of labor. Meta-analysis of these studies found a higher rate for cesarean section when labor was induced (OR 2.63, 95%CI 2.24-3.10, P<0.0001).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References: Kehl, S., et al. (2016). "Balloon catheters for induction of labor at term after previous cesarean section: a systematic review." European Journal of Obstetrics, Gynecology, & Reproductive Biology **204**: 44-50.

Foley catheter balloon versus PGE2

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus PGE2
Outcome: Induction to delivery interval

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*
☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Zhu, L., et al. Year Published: 2018 Location: Journal: *Medicine*	To compare the efficacy and safety of the intracervical Foley catheter and dinoprostone insert for cervical ripening to achieve successful labor induction.	**Size:** 8 trials (2390 women) **Inclusion Criteria**: Only published randomized, controlled trials comparing the dinoprostone insert with the Foley catheter were included.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, induction to delivery interval, maternal and neonatal adverse events .	**Results:** There was no significant difference between the 2 methods regarding the induction to delivery interval (mean difference, 0.71; 95% CI,-2.50-3.91).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Wang, H., et al. Year Published: 2016 Location: China Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To compare the effectiveness and safety of controlled-release dinoprostone insert with Foley catheter balloon for cervical ripening and labor induction.	**Size:** 5 trials (1227 women) **Inclusion Criteria**: (1) RCTs; (2) compared controlled-release dinoprostone vaginal insert with Foley catheter balloon for cervical ripening and labor	**Type:** Systematic Review **Intervention**: The primary outcomes of this meta-analysis were cesarean section rate, vaginal delivery within 24 h, and time from induction to	**Results:** Meta-analysis on random effects model showed that time from induction to delivery was significantly shorter in dinoprostone insert group compared with Foley catheter	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

		induction; and (3) reported on at least one of the outcomes mentioned below.	delivery. The secondary outcomes included other maternal parameters and neonatal outcomes.	group (MD 5.73 h, 95% CI 1.26-10.20, P = 0.0 1)	☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Zhu, L., et al. (2018). "Intracervical Foley catheter balloon versus dinoprostone insert for induction cervical ripening: A systematic review and meta-analysis of randomized controlled trials." Medicine 97(48): e13251.

Wang, H., et al. (2016). "Controlled-release dinoprostone insert versus Foley catheter for labor induction: a meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 29(14): 2382-2388.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus PGE2
Outcome: Apgar scores < 7 at 5min

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Zhu, L., et al. Year Published: 2018 Location: Journal: *Medicine*	To compare the efficacy and safety of the intracervical Foley catheter and dinoprostone insert for cervical ripening to achieve successful labor induction.	**Size:** 5 trials (2321 women) **Inclusion Criteria**: Only published randomized, controlled trials comparing the dinoprostone insert with the Foley catheter were included.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, induction to delivery interval, maternal and neonatal adverse events .	**Results:** There were no significant differences in Apgar scores <7 at 5 min (RR 0.87, 95% CI 0.59-1.29).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Author: Wang, H., et al. Year Published: 2016 Location: China Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To compare the effectiveness and safety of controlled-release dinoprostone insert with Foley catheter balloon for cervical ripening and labor induction.	**Size:** 6 trials (1444 women) **Inclusion Criteria**: (1) RCTs; (2) compared controlled-release dinoprostone vaginal insert with Foley catheter balloon for cervical ripening and labor induction; and (3) reported on at least one of the outcomes mentioned below.	**Type:** Systematic Review **Intervention**: The primary outcomes of this meta-analysis were cesarean section rate, vaginal delivery within 24 h, and time from induction to delivery. The secondary outcomes included other maternal parameters and neonatal outcomes.	**Results:** The meta-analysis showed that there was no significant difference in Apgar Scores <7 at 5min between two groups (RR 0.7, 95% CI 0.31-1.90,P= 0.57).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Wang, H., et al. (2016). "Controlled-release dinoprostone insert versus Foley catheter for labor induction: a meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 29(14): 2382-2388.
Zhu, L., et al. (2018). "Intracervical Foley catheter balloon versus dinoprostone insert for induction cervical ripening: A systematic review and meta-analysis of randomized controlled trials." Medicine 97(48): e13251.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus PGE2
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Zhu, L., et al. Year Published: 2018 Location: Journal: *Medicine*	To compare the efficacy and safety of the intracervical Foley catheter and dinoprostone insert for cervical ripening to achieve successful labor induction.	**Size:** 8 trials (2390 women) **Inclusion Criteria**: Only published randomized, controlled trials comparing the dinoprostone insert with the Foley catheter were included.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, induction to delivery interval, maternal and neonatal adverse events.	**Results:** There was no significant difference between the 2 methods regarding the cesarean delivery rate (relative risk, 0.91; 95% CI, 0.78-1.07).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Chen, W., et al. Year Published: 2016 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 15 trials **Inclusion Criteria**: RCTS comparing vaginal and intracervical dinoprostone to the Foley Catheter	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, hyperstimulation with fetal heart rate changes, vaginal delivery not achieved in 24h.	**Results:** There was no significant difference between the 2 methods regarding the cesarean delivery delivery rate VPGE2v Foley RR 0.96 (0.82-1.13, I2=16%) FCv ICPGE2 RR 0.98 (0.81-1.18, I2=0%)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Wang, H., et al. Year Published: 2016 Location: China Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To compare the effectiveness and safety of controlled-release dinoprostone insert with Foley catheter balloon for cervical ripening and labor induction.	**Size:** 6 trials (1444 women) **Inclusion Criteria**: (1) RCTs; (2) compared controlled-release dinoprostone vaginal insert with Foley catheter balloon for cervical ripening and labor induction; and (3) reported on at least one of the outcomes mentioned below	**Type:** Systematic Review **Intervention**: The primary outcomes of this meta-analysis were cesarean section rate, vaginal delivery within 24 h, and time from induction to delivery. The secondary outcomes included other maternal parameters and neonatal outcomes.	**Results:** The meta-analysis showed that there was no significant difference in cesarean section rate between two groups (RR 0.94, 95% CI 0.80-1.12,P= 0.50).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Wang, H., et al. (2016). "Controlled-release dinoprostone insert versus Foley catheter for labor induction: a meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 29(14): 2382-2388.

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology **123**(3): 346-354.

Zhu, L., et al. (2018). "Intracervical Foley catheter balloon versus dinoprostone insert for induction cervical ripening: A systematic review and meta-analysis of randomized controlled trials." Medicine 97(48): e13251.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus PGE2
Outcome: Vaginal delivery not achieved in 24h

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 8 trials **Inclusion Criteria**: RCTS comparing vaginal and intracervical dinoprostone to the Foley Catheter.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, hyperstimulation with fetal heart rate changes, vaginal delivery not achieved in 24h.	**Results:** There was no significant difference between the 2 methods regarding the number of vaginal deliveries not achieved in 24h VPGE2v Foley RR 0.77 (0.57-1.03, I2=88%). FCv ICPGE2 RR 0.89 (0.63-1.28)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Wang, H., et al. Year Published: 2016 Location: China Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To compare the effectiveness and safety of controlled-release dinoprostone insert with Foley catheter balloon for cervical ripening and labor induction.	**Size:** 5 trials (1227 women) **Inclusion Criteria**: (1) RCTs; (2) compared controlled-release dinoprostone vaginal insert with Foley catheter balloon for cervical ripening and labor induction; and (3)	**Type:** Systematic Review **Intervention**: The primary outcomes of this meta-analysis were cesarean section rate, vaginal delivery within 24 h, and time from induction to delivery. The secondary	**Results:** Overall, 236 (38.4%) women in Foley catheter group and 277 (45.3%) in dinoprostone insert group achieved vaginal delivery within 24 h. The pooling results revealed no significant difference in	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive

		reported on at least one of the outcomes mentioned below.	outcomes included other maternal parameters and neonatal outcomes.	this outcome between two groups (RR 0.75, 95% CI 0.43-1.30, P=0.31).	☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Wang, H., et al. (2016). "Controlled-release dinoprostone insert versus Foley catheter for labor induction: a meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 29(14): 2382-2388.

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology **123**(3): 346-354.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus PGE2
Outcome: Hyperstimulation with FHR changes

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 6 trials **Inclusion Criteria**: RCTS comparing vaginal and intracervical dinoprostone to the Foley Catheter.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, hyperstimulation with fetal heart rate changes, vaginal delivery not achieved in 24h.	**Results:** There was a significant reduction in uterine hyperstimulation with FHR With FC v VPGE2 RR 0.27 (0.12-0.52, I2=23%)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

					☐ Inappropriate pooled analysis
Author: Wang, H., et al. Year Published: 2016 Location: China Journal: *Journal of Maternal-Fetal & Neonatal Medicine*	To compare the effectiveness and safety of controlled-release dinoprostone insert with Foley catheter balloon for cervical ripening and labor induction.	**Size:** 6 trials (1444 women) **Inclusion Criteria**: (1) RCTs; (2) compared controlled-release dinoprostone vaginal insert with Foley catheter balloon for cervical ripening and labor induction; and (3) reported on at least one of the outcomes mentioned below.	**Type:** Systematic Review **Intervention**: The primary outcomes of this meta-analysis were cesarean section rate, vaginal delivery within 24 h, and time from induction to delivery. The secondary outcomes included other maternal parameters and neonatal outcomes.	**Results:** There was a significantly increased risk of excessive uterine activity in dinoprostone insert group (RR 0.07, 95% CI 0.03-0.19, P<0.01).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Wang, H., et al. (2016). "Controlled-release dinoprostone insert versus Foley catheter for labor induction: a meta-analysis." Journal of Maternal-Fetal & Neonatal Medicine 29(14): 2382-2388.

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology **123**(3): 346-354.

Foley catheter balloon vs. Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus misoprostol
Outcome: Hyperstimulation or tachysystole

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen, W., et al. Year Published: 2016 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 8 trials **Inclusion Criteria**: RCTS comparing vaginal and intracervical dinoprostone to the Foley Catheter.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, hyperstimulation with fetal heart rate changes, vaginal delivery not achieved in 24h.	**Results:** There was a significant reduction in uterine hyperstimulation with FHR With FC v VMISO RR 0.15 (0.07-0.29, I2=0%)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Fox, N. S., et al Year Published: 2011 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To review the evidence comparing misoprostol and transcervical Foley catheter placement for induction of labour, and perform a meta-analysis comparing these two induction agents.	**Size:** 9 trials (1603 women) **Inclusion Criteria**: Studies were included if patients undergoing induction of labour were randomly assigned to intravaginal misoprostol or transcervical Foley catheter placement.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. The primary outcomes selected were time to delivery, and the rates of caesarean section, uterine tachysystole, and chorioamnionitis. administration, and indications for caesarean section.	**Results:** Using the random-effects estimate, patients who received misoprostol had significantly higher rates of tachysystole compared with women who received a transcervical Foley catheter (RR 2.844; 95% CI 1.392-5.812). The heterogeneity between studies was not significant, with P = 0.5230. The estimate of I2 was 0%.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology **123**(3): 346-354.

Fox, N. S., et al. (2011). "Intravaginal misoprostol versus Foley catheter for labour induction: a meta-analysis." BJOG: An International Journal of Obstetrics & Gynaecology 118(6): 647-654.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus misoprostol
Outcome: Vaginal delivery not achieved in 24h

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 4 trials **Inclusion Criteria**: RCTS comparing vaginal and intracervical dinoprostone to the Foley Catheter.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, hyperstimulation with fetal heart rate changes, vaginal delivery not achieved in 24h.	**Results:** Vaginal misoprostol showed a significant difference in reducing the number of vaginal deliveries not achieved in 24 hours, compared with Foley catheter (RR 0.48, 95% CI 0.35-0.67, I2=0%).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology **123**(3): 346-354.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Intracervical Foley catheter balloon versus misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen, W., et al. Year Published: 2016 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare treatment techniques for cervical ripening in the induction of labour.	**Size:** 13 trials **Inclusion Criteria**: RCTS comparing vaginal and intracervical dinoprostone to the Foley Catheter.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: cesarean delivery, hyperstimulation with fetal heart rate changes, vaginal delivery not achieved in 24h.	**Results:** Oral Miso V Foley showed no significant decrease in CDs 0.76 (0.61-0.94) Vaginal Miso v FC also showed no significant decrease 0.84 (0.71-0.99)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Fox, N. S., et al Year Published: 2011 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To review the evidence comparing misoprostol and transcervical Foley catheter placement for induction of labour, and perform a meta-analysis comparing these two induction agents.	**Size:** 9 trials (1603 women) **Inclusion Criteria**: Studies were included if patients undergoing induction of labour were randomly assigned to intravaginal misoprostol or transcervical Foley catheter placement.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. The primary outcomes selected were time to delivery, and the rates of caesarean section, uterine tachysystole, and chorioamnionitis. administration, and indications for caesarean section.	**Results:** Using the random-effects estimate, there was no significant difference in the rate of caesarean delivery between women who received misoprostol compared with transcervical Foley catheter (RR 0.991; 95% CI 0.7683-1.278). The heterogeneity between studies was not significant, with P = 0.4840. The estimate of I2 was 0%.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Chen, W., et al. (2016). "A systematic review and network meta-analysis comparing the use of Foley catheters, misoprostol, and dinoprostone for cervical ripening in the induction of labour." BJOG: An International Journal of Obstetrics & Gynaecology **123**(3): 346-354.

Fox, N. S., et al. (2011). "Intravaginal misoprostol versus Foley catheter for labour induction: a meta-analysis." BJOG: An International Journal of Obstetrics & Gynaecology 118(6): 647-654.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter versus vaginal misoprostol
Outcome: Time to delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Fox, N. S., et al Year Published: 2011 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To review the evidence comparing misoprostol and transcervical Foley catheter placement for induction of labour, and perform a meta-analysis comparing these two induction agents.	**Size:** 9 trials (1603 women) **Inclusion Criteria**: Studies were included if patients undergoing induction of labour were randomly assigned to intravaginal misoprostol or transcervical Foley catheter placement.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. The primary outcomes selected were time to delivery, and the rates of caesarean section, uterine tachysystole, and chorioamnionitis. administration, and indications for caesarean section.	**Results:** Using the random-effects estimate, there was no significant difference in the mean time to delivery between women who received misoprostol compared with transcervical Foley catheter (mean difference 1.08 ± 2.19 hours shorter for misoprostol, P = 0.2348). The heterogeneity between studies was significant, with P < 0.0001. The estimate of I2 was 84%.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Fox, N. S., et al. (2011). "Intravaginal misoprostol versus Foley catheter for labour induction: a meta-analysis." BJOG: An International Journal of Obstetrics & Gynaecology 118(6): 647-654.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter versus vaginal misoprostol
Outcome: Rate of Chorioamnionitis

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Fox, N. S., et al Year Published: 2011 Location: USA Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To review the evidence comparing misoprostol and transcervical Foley catheter placement for induction of labour, and perform a meta-analysis comparing these two induction agents.	**Size:** 9 trials (1603 women) **Inclusion Criteria**: Studies were included if patients undergoing induction of labour were randomly assigned to intravaginal misoprostol or transcervical Foley catheter placement.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. The primary outcomes selected were time to delivery, and the rates of caesarean section, uterine tachysystole, and chorioamnionitis. administration, and indications for caesarean section.	**Results:** Using the random-effects estimate, there was no significant difference in the rate of chorio between women who received misoprostol compared with transcervical Foley catheter (RR 1.13, 0.611-2.089). The heterogeneity between studies was not significant, with P = 0.39. The estimate of I2 was 0%.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Fox, N. S., et al. (2011). "Intravaginal misoprostol versus Foley catheter for labour induction: a meta-analysis." BJOG: An International Journal of Obstetrics & Gynaecology 118(6): 647-654.

Double balloon catheter versus PGE2

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double balloon catheter versus PGE2
Outcome: Induction to delivery interval

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Du, Y. M., et al. Year Published: 2017 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of the double-balloon catheter with prostaglandin E2 agents used for labour induction.	**Size:** 9 trials (1591 women) **Inclusion Criteria**: Only randomised controlled trials comparing the PGE2 agents with the double-balloon catheter for cervical ripening and labour induction in women with unfavourable cervices were included in the analysis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: the rate of achieving vaginal delivery within 24 hours after the initiation of ripening and the proportion of patients who underwent caesarean section. secondary outcomes with regard to efficacy of induction methods: ripening-to-delivery interval, interval time between beginning of the ripening and initiation of active labour, rate of vaginal delivery and assisted	**Results:** No statistical differences between the two groups were noted with respect to the interval of time between initiation of induction and delivery (MD 0.03; 95% CI -1.43, 1.50).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			vaginal birth, proportion of patients who went into active labour during ripening process, need for oxytocin administration, and indications for caesarean section.		

References:
Du, Y. M., et al. (2017). "Double-balloon catheter versus prostaglandin E2 for cervical ripening and labour induction: a systematic review and meta-analysis of randomised controlled trials." BJOG: An International Journal of Obstetrics & Gynaecology 124(6): 891-899.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double balloon catheter versus PGE2
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☐ Medium
☒ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Du, Y. M., et al. Year Published: 2017 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of the double-balloon catheter with prostaglandin E2 agents used for labour induction.	**Size:** 9 trials (1708 women) **Inclusion Criteria**: Only randomised controlled trials comparing the PGE2 agents with the double-balloon catheter for cervical ripening and labour induction in women	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: the rate of achieving vaginal delivery within 24 hours after the initiation of ripening and the	**Results:** The pooled data did not demonstrate a difference between the PGE2 agents and double-balloon catheter groups (RR 0.92; 95% CI 0.79, 1.07)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

		with unfavourable cervices were included in the analysis.	proportion of patients who underwent caesarean section. secondary outcomes with regard to efficacy of induction methods: ripening-to-delivery interval, interval time between beginning of the ripening and initiation of active labour, rate of vaginal delivery and assisted vaginal birth, proportion of patients who went into active labour during ripening process, need for oxytocin administration, and indications for caesarean section.		☐ Inappropriate pooled analysis

References:
Du, Y. M., et al. (2017). "Double-balloon catheter versus prostaglandin E2 for cervical ripening and labour induction: a systematic review and meta-analysis of randomised controlled trials." BJOG: An International Journal of Obstetrics & Gynaecology 124(6): 891-899.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double balloon catheter versus PGE2
Outcome: Vaginal delivery within 24 hours

Quality (certainty) of evidence for: (outcome)
☒ High
☐ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Du, Y. M., et al. Year Published: 2017 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of the double-balloon catheter with prostaglandin E2 agents used for labour induction.	**Size:** 7 trials (1591 women) **Inclusion Criteria**: Only randomised controlled trials comparing the PGE2 agents with the double-balloon catheter for cervical ripening and labour induction in women with unfavourable cervices were included in the analysis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: the rate of achieving vaginal delivery within 24 hours after the initiation of ripening and the proportion of patients who underwent caesarean section. secondary outcomes with regard to efficacy of induction methods: ripening-to-delivery interval, interval time between beginning of the ripening and initiation of active labour, rate of vaginal delivery and assisted vaginal birth, proportion of patients who went into active labour during ripening process, need for oxytocin administration, and indications for caesarean section.	**Results:** The meta-analysis yielded a non-significantly decreased proportion of women who achieved vaginal delivery within 24 hours in the locally applied PGE2 arm (RR 0.95; 95% CI 0.78, 1.16)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Du, Y. M., et al. (2017). "Double-balloon catheter versus prostaglandin E2 for cervical ripening and labour induction: a systematic review and meta-analysis of randomised controlled trials." BJOG: An International Journal of Obstetrics & Gynaecology 124(6): 891-899.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double balloon catheter versus PGE2
Outcome: Excessive uterine activity

Quality (certainty) of evidence for: (outcome)		
☐ High ☒ Moderate ☐ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if:

		☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Du, Y. M., et al. Year Published: 2017 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of the double-balloon catheter with prostaglandin E2 agents used for labour induction.	**Size:** 6 trials (809 women) **Inclusion Criteria**: Only randomised controlled trials comparing the PGE2 agents with the double-balloon catheter for cervical ripening and labour induction in women with unfavourable cervices were included in the analysis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: the rate of achieving vaginal delivery within 24 hours after the initiation of ripening and the proportion of patients who underwent caesarean section. secondary outcomes with regard to efficacy of induction methods: ripening-to-delivery interval, interval time between beginning of the ripening and initiation of active labour, rate of vaginal delivery and assisted vaginal birth, proportion of patients who went into active labour during ripening process, need for oxytocin administration, and indications for caesarean section.	**Results:** Compared with mechanical methods, PGE2 agents resulted in a higher risk of excessive uterine activity (uterine hyperstimulation, tachysystole and hypertonus) with or without accompanied non-reassuring fetal heart rate patterns (RR 10.02; 95% CI 3.99, 25.17).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Du, Y. M., et al. (2017). "Double-balloon catheter versus prostaglandin E2 for cervical ripening and labour induction: a systematic review and meta-analysis of randomised controlled trials." BJOG: An International Journal of Obstetrics & Gynaecology 124(6): 891-899.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Double balloon catheter versus PGE2
Outcome: NICU admission

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Du, Y. M., et al. Year Published: 2017 Location: Journal: *BJOG: An International Journal of Obstetrics & Gynaecology*	To compare the efficacy and safety of the double-balloon catheter with prostaglandin E2 agents used for labour induction.	**Size:** 4 trials (1379 women) **Inclusion Criteria**: Only randomised controlled trials comparing the PGE2 agents with the double-balloon catheter for cervical ripening and labour induction in women with unfavourable cervices were included in the analysis.	**Type:** Systematic Review **Intervention**: Systematic review with meta-analysis. Outcomes of interest: the rate of achieving vaginal delivery within 24 hours after the initiation of ripening and the proportion of patients who underwent caesarean section. secondary outcomes with regard to efficacy of induction methods: ripening-to-delivery interval, interval time between beginning of the ripening and initiation of active labour, rate of vaginal delivery and assisted vaginal birth, proportion of patients who went into active labour during ripening process, need for oxytocin administration, and indications for caesarean section.	**Results:** Cervical ripening and labour induction with PGE2 agents increased the risk of needing to be admitted to the neonatal intensive care unit (RR 1.31; 95% CI 1.01-1.69)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Du, Y. M., et al. (2017). "Double-balloon catheter versus prostaglandin E2 for cervical ripening and labour induction: a systematic review and meta-analysis of randomised controlled trials." BJOG: An International Journal of Obstetrics & Gynaecology 124(6): 891-899.

Foley Catheter vs Cook balloon

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor with stillbirth
Modality: Foley catheter versus Cook balloon
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Rab, M., et al Year Published: 2014 Location: Egypt Journal: *Journal of Maternal-Fetal and Neonatal Medicine*	To compare the efficacy and safety of the use of transcervical Foley's catheter versus Cook cervical ripening balloon in pregnant women with stillbirth, unfavorable cervix and scarred uterus.	**Size:** 200 women **Inclusion Criteria**: Stillbirth, unfavorable cervix (Bishop score less than 6) and previous lower-segment CS scar, singleton pregnancy **Exclusion Criteria**: Patients with other uterine scars, history of cervical tear, ruptured membranes, uterine or vaginal anomalies, abnormal placentation, antepartum hemorrhage, absolute	**Type:** RCT **Intervention**: The recruited patients were subjected to history taking, physical examination, ultrasound examination, complete blood count and coagulation profile. Participants were randomly assigned in a 1:1 ratio to either Foley's catheter or cook balloon groups to test their efficacy and safety for cervical ripening in stillbirth of women with scarred uterus. Participants were alternatively	**Results:** There were no statistically significant differences between the two groups regarding the mean Bishop score either before insertion or after spontaneous expulsion or removal of the balloons. Within each group, the mean Bishop score was significantly increased after spontaneous expulsion or removal of the balloons in both groups. Spontaneous expulsion of the balloons was statistically	**Study Limitations:** ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		indications for CS and those with active infection of the lower genital tract	allocated to either procedure till we reached our target number of 100 in each group over the three years period of the study.	higher in the Foley's catheter group (80% versus 45%; P<0.001). Times from balloon insertion to expulsion and from balloon insertion to delivery were significantly shorter in the Foley's catheter group (P<0.001 and P<0.01, respectively).	

References:
Rab, M. T., et al. (2015). "Transcervical Foley's catheter versus Cook balloon for cervical ripening in stillbirth with a scarred uterus: a randomized controlled trial." Journal of Maternal-Fetal & Neonatal Medicine **28**(10): 1181-1185.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor with stillbirth
Modality: Foley catheter versus Cook balloon
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Rab, M., et al Year Published: 2014 Location: Egypt Journal: *Journal of Maternal-Fetal and Neonatal Medicine*	To compare the efficacy and safety of the use of transcervical Foley's catheter versus Cook cervical ripening balloon in pregnant women	**Size:** 200 women **Inclusion Criteria**: Stillbirth, unfavorable cervix (Bishop score less than 6) and previous	**Type:** RCT **Intervention**: The recruited patients were subjected to history taking, physical examination, ultrasound	**Results:** There were no significant differences in the pain score during insertion, need for analgesia, hospital stay, maternal satisfaction or	**Study Limitations:** ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

	with stillbirth, unfavorable cervix and scarred uterus.	lower-segment CS scar, singleton pregnancy. **Exclusion Criteria**: Patients with other uterine scars, history of cervical tear, ruptured membranes, uterine or vaginal anomalies, abnormal placentation, antepartum hemorrhage, absolute indications for CS and those with active infection of the lower genital tract	examination, complete blood count and coagulation profile. Participants were randomly assigned in a 1:1 ratio to either Foley's catheter or cook balloon groups to test their efficacy and safety for cervical ripening in stillbirth of women with scarred uterus. Participants were alternatively allocated to either procedure till we reached our target number of 100 in each group over the three years period of the study.	adverse events between the two groups.	☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Rab, M. T., et al. (2015). "Transcervical Foley's catheter versus Cook balloon for cervical ripening in stillbirth with a scarred uterus: a randomized controlled trial." Journal of Maternal-Fetal & Neonatal Medicine **28**(10): 1181-1185.

Foley Catheter with stylette

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter with stylette
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Forgie M., et al. Year Published: 2016 Location: USA Journal: *Journal of Obstetrics & Gynaecology*	To compare catheter insertion times, patient-assessed pain levels, and insertion failure rates between women who received a digitally placed Foley catheter for cervical ripening with the aid of a stylette and women who received the catheter without a stylette.	**Size:** 134 women **Inclusion Criteria**: Women 18 years or older presenting for the induction of labor cared for by OB/GYn residents post-graduate year 2-4, had a singleton pregnancy, intact membranes and cephalic presentation. **Exclusion Criteria:** PGY 1 residents.	**Type:** RCT **Intervention**: Women received a computer-generated random assignment of a Foley catheter insertion with a stylette (treatment group, n = 62) or without a stylette (control group, n = 61).. Three primary outcomes were of interest, including the following: (1) insertion time (total minutes to successful catheter placement), (2) patient-assessed pain level (0-10), and (3) failure rate of the randomly assigned insertion method. Per outcome, 4 regression models, each including the random effect of physician and fixed effects of stylette use with patient nulliparity, a history of vaginal delivery, cervical dilation at presentation, or postgraduate year of the performing resident physician.	**Results: Regression models revealed that insertion time, patient pain, and insertion failure were unrelated to stylette use, nulliparity, and history of vaginal delivery**. However, overall insertion time and failure were significantly influenced by cervical dilation, with insertion time decreasing by 21% (95% confidence interval [CI], 5-34%) and odds of failure decreasing by 71% (odds ratio, 0.29; 95% CI, 0.10-0.86) per 1 cm dilation. Resident postgraduate year also significantly influenced insertion time, with greater time required of physicians with less experience. Mean insertion time was 51% (95% CI, 23-69%) shorter for fourth-year than second-year residents.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Forgie M. et al. (2016), "Foley catheter placement for induction of labor with or without stylette: a randomized clinical trial." American Journal of Obstetrics and Gynecology. 214(3): 391-397.

Foley Catheter Volume

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter 30 mL versus 60mL or 80mL
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Sandberg E., et al. Year Published: 2017 Location: Netherlands Journal: *European journal of obstetrics, gynecology, and reproductive biology*	The aim of this randomized controlled study was to assess in term pregnant women with an unfavourable cervix, whether there is a difference in efficacy between the two most commonly used insufflation volumes of FC (30mL and 60mL).	**Size:** 174 women **Inclusion Criteria**: Term pregnant women with indication for induction, an unfavorable cervix, singleton vertex pregnancies and intact membranes. **Exclusion Criteria:** Women younger than 18, latex allergy, prior uterine scar.	**Type:** RCT **Intervention**: Women were randomized to induction of labour with a Foley catheter filled with 30mL or with 60mL. Primary outcome was delivery within eight hours after amniotomy. Secondary outcomes included the time interval between placement of the Foley and amniotomy, the mode of delivery, complications and neonatal outcomes.	**Results: The number of deliveries within 8 hours after amniotomy was not significantly different between the two groups (40.7% versus 48.83%, OR=0.71(CI; 0.39-1.3)).** Sub-analysis showed that more multiparous women in the 60mL group delivered within eight hours (93.10% versus 65.22%, OR=7.2 (CI; 1.35-38.37)). For the nulliparous, the 30mL Foley catheter was associated with a higher caesarean section rate (31.75% versus 15.52% (OR 2.53; CI; 1.1-6.2)). **The 60mL Foley catheter was also associated with a higher chance of spontaneous labour after placement (OR 2.35; CI; 1.1-5.1), a shorter time interval for cervical ripening (OR=4.5; CI: 1.2-16.7) and less blood loss. (p=0.002).**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Levy R., et al. Year Published: 2004	The purpose of this study was to compare the efficacy of	**Size:** 203 women	**Type:** RCT	**Results:** Ripening of the cervix with the larger balloon volume was associated with a	**Study Limitations:** ☐ None ***RCTs***

Location: USA Journal: *American journal of obstetrics and gynecology*	cervical ripening with 2 Foley catheter balloon volumes.	**Inclusion Criteria**: Women admitted for induction of labor with term singleton gestation. **Exclusion Criteria:** Women were excluded from the study if they had regular contractions on admission, rupture of the membranes, previous uterine scar, multiparity of more than 5 deliveries, and estimated fetal weight above 4200 g.	**Intervention**: Pregnant women admitted for induction of labor with a term singleton gestation were randomly assigned for cervical ripening by a balloon inflated with 30 mL or 80 mL of sterile saline. The primary outcome measurement was failure of cervical ripening (defined as dilatation of <3 cm). Secondary outcomes included achieving vaginal delivery within 24 hours, time until balloon expulsion, induction to delivery time, cesarean section rate, and immediate fetal and neonatal complications defined by Apgar score below 7 at 5 minutes, or cord pH of less than 7.0.	significantly higher rate of post-ripening dilatation of 3 cm or more (76.0% vs 52.4%, P < .001). In primiparous women, the larger balloon volume resulted in a significantly higher rate of deliveries by 24 hours (71.4% vs 49%, P < .05), and a significantly less requirement of augmentation with oxytocin (69.3% vs 90.4%, P < .05).	☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☒ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Levy R, K., et al. (2004)"A randomized trial comparing a 30-mL and an 80-mL Foley catheter balloon for preinduction cervical ripening." American journal of obstetrics and gynecology 191(5): 1632-1636
Sandberg Em., et al. (2017). "Foley catheter for induction of labour filled with 30mL or 60mL: a randomized controlled trial." European journal of obstetrics, gynecology, and reproductive biology 211: 150-155.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Foley catheter 30 mL versus 60mL or 80mL
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Sandberg E., et al. Year Published: 2017 Location: Netherlands Journal: *European journal of obstetrics, gynecology, and reproductive biology*	The aim of this randomized controlled study was to assess in term pregnant women with an unfavourable cervix, whether there is a difference in efficacy between the two most commonly used insufflation volumes of FC (30mL and 60mL).	**Size:** 174 women **Inclusion Criteria**: Term pregnant women with indication for induction, an unfavorable cervix, singleton vertex pregnancies and intact membranes. **Exclusion Criteria:** Women younger than 18, latex allergy, prior uterine scar.	**Type:** RCT **Intervention**: Women were randomized to induction of labour with a Foley catheter filled with 30mL or with 60mL. Primary outcome was delivery within eight hours after amniotomy. Secondary outcomes included the time interval between placement of the Foley and amniotomy, the mode of delivery, complications and neonatal outcomes.	**Results:** The Foley catheter ruptured twelve times in the 60mL group whereas this did not happen once in the 30mL group. One case of umbilical cord prolapse was observed in the 60mL group. No differences in neonatal outcomes.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Levy R., et al. Year Published: 2004 Location: USA Journal: *American journal of obstetrics and gynecology*	The purpose of this study was to compare the efficacy of cervical ripening with 2 Foley catheter balloon volumes.	**Size:** 203 women **Inclusion Criteria**: Women admitted for induction of labor with term singleton gestation. **Exclusion Criteria:** Women were excluded from the study if they had regular contractions on admission, rupture of the membranes, previous uterine scar, multiparity of more than 5 deliveries, and estimated fetal weight above 4200 g.	**Type:** RCT **Intervention**: Pregnant women admitted for induction of labor with a term singleton gestation were randomly assigned for cervical ripening by a balloon inflated with 30 mL or 80 mL of sterile saline. The primary outcome measurement was failure of cervical ripening (defined as dilatation of <3 cm). Secondary outcomes included achieving vaginal delivery within 24 hours, time until balloon expulsion, induction to delivery time, cesarean section rate, and immediate fetal and neonatal complications defined by Apgar score below 7 at 5 minutes, or cord pH of less than 7.0.	**Results:** All multiparous women had vaginal delivery except one woman of the group, who had ripening of the cervix with balloon inflated to 80 mL of saline whowas delivered by emergency cesarean section for cordprolapse after spontaneous rupture of the membranes. There was no difference in the rate of cesarean section between women induced with balloon inflated to 30 mL compared with 80 mL. However, women that were induced with balloon inflated with 30 mL had a significant higher rate of cesarean section because of nonprogressive labor (9.9% vs 3.0%, P=.047).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☒ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Levy R, K., et al. (2004)"A randomized trial comparing a 30-mL and an 80-mL Foley catheter balloon for preinduction cervical ripening." American journal of obstetrics and gynecology 191(5): 1632-1636
Sandberg Em., et al. (2017). "Foley catheter for induction of labour filled with 30mL or 60mL: a randomized controlled trial." European journal of obstetrics, gynecology, and reproductive biology 211: 150-155.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter 30 mL vs 60mL or 80mL
Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Sandberg E., et al. Year Published: 2017 Location: Netherlands Journal: *European journal of obstetrics, gynecology, and reproductive biology*	The aim of this randomized controlled study was to assess in term pregnant women with an unfavourable cervix, whether there is a difference in efficacy between the two most commonly used insufflation volumes of FC (30mL and 60mL).	**Size:** 174 women **Inclusion Criteria**: Term pregnant women with indication for induction, an unfavorable cervix, singleton vertex pregnancies and intact membranes. **Exclusion Criteria:** Women younger than 18, latex allergy, prior uterine scar.	**Type:** RCT **Intervention**: Women were randomized to induction of labour with a Foley catheter filled with 30mL or with 60mL. Primary outcome was delivery within eight hours after amniotomy. Secondary outcomes included the time interval between placement of the Foley and amniotomy, the mode of delivery, complications and neonatal outcomes.	**Results:** No differences in patient satisfaction were seen.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Sandberg Em., et al. (2017). "Foley catheter for induction of labour filled with 30mL or 60mL: a randomized controlled trial." European journal of obstetrics, gynecology, and reproductive biology 211: 150-155.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter 30 mL versus 60mL or 80mL
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Sandberg E., et al. Year Published: 2017 Location: Netherlands Journal: *European journal of obstetrics, gynecology, and reproductive biology*	The aim of this randomized controlled study was to assess in term pregnant women with an unfavourable cervix, whether there is a difference in efficacy between the two most commonly used insufflation volumes of FC (30mL and 60mL).	**Size:** 174 women **Inclusion Criteria**: Term pregnant women with indication for induction, an unfavorable cervix, singleton vertex pregnancies and intact membranes. **Exclusion Criteria:** Women younger than 18, latex allergy, prior uterine scar.	**Type:** RCT **Intervention**: Women were randomized to induction of labour with a Foley catheter filled with 30mL or with 60mL. Primary outcome was delivery within eight hours after amniotomy. Secondary outcomes included the time interval between placement of the Foley and amniotomy, the mode of delivery, complications and neonatal outcomes.	**Results:** No differences was seen between group for the number of deliveries within 8 hours of amniotomy (OR 0.71 95% CI 0.31-1.3) . In the 30mL group 14% did not have a favorable cervix after 24hrs vs 3.4% in 60mL group (P=0.023) . 27% of women in the 60mL group went into spontaneous labor after placement vs 13.8% in 30 mL group (P=0.03).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Sandberg Em., et al. (2017). "Foley catheter for induction of labour filled with 30mL or 60mL: a randomized controlled trial." European journal of obstetrics, gynecology, and reproductive biology 211: 150-155

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter 30 mL versus 60mL or 80mL
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Sandberg E., et al. Year Published: 2017 Location: Netherlands Journal: *European journal of obstetrics, gynecology, and reproductive biology*	The aim of this randomized controlled study was to assess in term pregnant women with an unfavourable cervix, whether there is a difference in efficacy between the two most commonly used insufflation volumes of FC (30mL and 60mL).	**Size:** 174 women **Inclusion Criteria**: term pregnant women with indication for induction, an unfavorable cervix, singleton vertex pregnancies and intact membranes. **Exclusion Criteria:** women younger than 18, latex allergy, prior uterine scar.	**Type:** RCT **Intervention**: Women were randomized to induction of labour with a Foley catheter filled with 30mL or with 60mL. Primary outcome was delivery within eight hours after amniotomy. Secondary outcomes included the time interval between placement of the Foley and amniotomy, the mode of delivery, complications and neonatal outcomes.	**Results:** 12 balloons ruptured in the 60 mL group vs 0 in the 30 mL group. No difference in rate of cesarean delivery (OR 2.19; 0.99-4.90) The amount of blood loss was lower in 60 mL group vs 30 mL group. (586[471.91] vs 388[251.21] P=0.002) No difference in neonatal outcomes.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Sandberg Em., et al. (2017). "Foley catheter for induction of labour filled with 30mL or 60mL: a randomized controlled trial." European journal of obstetrics, gynecology, and reproductive biology 211: 150-155

Question 5: What are the harms and benefits of the combination of cervical ripening methods?

Foley Catheter plus misoprostol versus misoprostol alone

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus misoprostol versus misoprostol alone
Outcome: Time to delivery

Quality (certainty) of evidence:
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

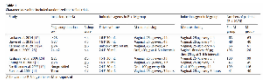
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen et al. Year Published: 2015 Location: Canada Journal: *International Journal of Gynecology and Obstetrics*	To summarize the evidence comparing Foley catheter plus misoprostol versus misoprostol alone for cervical ripening.	**Size:** 8 trials, 1153 patients **Inclusion Criteria**: To be included, studies had to have an RCT design, enroll pregnant women undergoing cervical ripening for the purpose of labor induction for delivery of a viable fetus using a combination of Foley catheter and misoprostol, and have a comparison group receiving misoprostol alone for cervical ripening and labor induction.	**Type:** Systematic Review **Outcomes Assessed**: The primary outcomes were the mean time to delivery and the rates of cesarean delivery, chorioamnionitis (maternal temperature> 38 °C during the course of labor induction), and uterine tachysystole with fetal heart rate (FHR) changes. Secondary outcomes included meconium-stained amniotic fluid, oxytocin augmentation, endomyometritis, and	**Results:** Results from a meta-analysis of the remaining six high-quality studies showed a significant reduction in the mean time-to-delivery in the combination group compared with the misoprostol group (mean difference -2.36 hours. 95% CI -4.07 to -0.66; P = 0.007, I2= 29%) 2 low quality studies with high risk of bias excluded from meta-analysis.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

			admission to the neonatal intensive care unit {NICU). 		☐ Inappropriate pooled analysis
Author: Levine et al. Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate the effectiveness of four commonly used induction methods: misoprostol alone, Foley alone, misoprostol-cervical Foley concurrently, and Foley-oxytocin concurrently.	**Size:** 366 women **Inclusion Criteria**: Women undergoing labor induction with full-term (37 weeks of gestation or greater), singleton, vertex-presenting gestations, with no contraindication to vaginal delivery, intact membranes, Bishop score 6 or less, and cervical dilation 2 cm or less. **Exclusion Criteria:** A contraindication to a vaginal delivery or to misoprostol, fetal demise, or major fetal anomaly. Non-English speaking women, women with HIV, and women with medical conditions requiring an assisted second stage were also excluded.	**Type:** RCT **Intervention**: *Women in the misoprostol only group* received 25 micrograms of misprostol per vagina every 3 hours, repeated up to five additional times for a maximum of 24 hours. *Women in the cervical Foley* only group had a18F Foley catheter with 30cc balloon inserted digitally or by direct visualization with a speculum. The Foley bulb was placed just above the level of the internal os and inflated with 60cc of sterile water. *Women in the misoprostol--cervical Foley group* had both misoprostol and a cervical Foley placed concurrently using the same procedures as noted for the individual group.	**Results: Overall, combination methods achieved a faster median time to delivery than the single agents, P<0.001, (misoprostol-Foley: 13.1 hours,** Foley-oxytocin: 14.5 hours, misoprostol alone: 17.6 hours, Foley alone: 17.7 hours). **Hazard Ratio:** Miso/Foley vs Miso 0.52 (0.39--0.741 P<0.001) Vs Foley 0.53 (0.40--0.72 P<0.001) Among women who have not yet delivered, women 366with misoprostol only or Foley only were almost 50% less likely to deliver before women with misoprostol-Foley concurrently (HR 0.52, HR 0.53, respectively).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Aduloju O. et al. Year Published: 2016 Location: Australia Journal: *Australian & New Zealand Journal of Obstetrics & Gynaecology*	To compare the efficacy of combined Foley's catheter and vaginal misoprostol with Foley's catheter or low-dose vaginal misoprostol alone for cervical ripening.	**Size:** 210 women **Inclusion Criteria**: Women with live singleton fetuses with cephalic presentation, intact membranes, reactive nonstress test and unfavourable cervices (Bishop's score <6) scheduled to undergo IOL at term.	**Type:** RCT **Intervention**: Women admitted for IOL, who met the inclusion criteria, were randomised into three groups, A (16f Foley filled to 30mL) , B (miso 25 microg every 6 hours	**Results:** The time between the start of cervical ripening and delivery (cervical ripening-delivery interval) differed significantly between the three groups (P = 0.001). This cervical ripening-delivery interval was significantly shorter in Group C in	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment

		Exclusion Criteria: Women with pregnancies <37 weeks' gestation, intrauterine fetal death, multiple gestations, previous uterine surgery, prelabour rupture of fetal membranes, abnormal nonstress test and any contraindication to vaginal delivery.	100 microg total) and C (combo A and B). The primary outcome measure was the rate of vaginal delivery. The secondary outcome measures were time interval to achieve a favorable cervix, induction-delivery interval and oxytocin requirements. Other variables assessed include the Apgar scores at 1 and 5 min, admission into special baby care unit (SCBU) and occurrence of complications of IOL such as uterine tachysystole, uterine hypertonus, hyperstimulation (tachysystole or hypertonus associated with fetal heart rate abnormalities), uterine rupture and fetal heart rate abnormalities.	comparison with Group A (P = 0.001) but not significantly with Group B (P = 0.295). There was a significant difference in the induction-vaginal delivery interval among the groups (P = 0.001).	☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Al-Ibraheemi Z. et al. Year Published: 2018 Location: USA Journal: *Obstetrics and Gynecology*	To test the hypothesis that cervical ripening using a combination of misoprostol and a transcervical Foley bulb leads to delivery within a shorter time compared with misoprostol alone.	**Size:** 200 **Inclusion Criteria**: Women admitted for cervical ripening. Inclusion criteria were gestational age 37 weeks or greater with intact membranes, singleton fetus, cephalic presentation, and Bishop score 6 or less. **Exclusion criteria**: Prior uterine surgery, ruptured membranes, and any contraindication to vaginal delivery.	**Type**: RCT **Intervention**: Patients were randomized to cervical ripening using misoprostol and a transcervical Foley bulb simultaneously or misoprostol alone. Primary outcome was time from placement of the misoprostol to delivery. Secondary outcomes included time to active phase, time from active phase to delivery, cesarean delivery rate, uterine tachysystole, estimated blood loss, chorioamnionitis, cord pH, 5-minute Apgar score, and	**Results:** Time to delivery, was significantly shorter in the combined misoprostol–Foley group: 15.0 (11.0–21.8) hours vs 19.0 (14.0–27.3) hours in the misoprostol-only group (P=0.001). This time difference remained significant after sub analysis by parity or after excluding cesarean deliveries.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome)

			neonatal intensive care unit admission. Women who were randomized to the misoprostol only group received 25 micrograms of misoprostol inserted vaginally every 4 hours and repeated up to a maximum of six doses. Women randomized to the combination group received vaginal misoprostol as described previously for the misoprostol-only group and in addition, a Foley catheter with a 30-cc balloon and was filled with 60 cc of normal saline.		☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Osoti A., et al. Year Published: 2018 Location: Kenya Journal: *BMC pregnancy and childbirth*	To evaluate the efficacy of combination of extra-amniotic Foley's catheter and vaginal misoprostol compared to vaginal misoprostol alone for cervical ripening and induction of labor on the incidence of failed induction, induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Size:** 180 women **Inclusion Criteria**: Gestational age of 28 weeks or greater, singleton cephalic pregnancies, intact membranes, Bishop's score less than 6, and no contraindications for vaginal delivery after providing informed consent. **Exclusion Criteria**: Favorable Bishop's score, fetal growth restriction, previous cesarean sections or other uterine surgeries, multiple gestation, contraindication to prostaglandins, fetal anomalies, estimated fetal weight more than 4000 g, placenta previa, non-reassuring fetal status, grand multiparity, HIV	**Type**: RCT **Intervention**: Pregnant women admitted for induction of labor were enrolled then randomized to either a combination of extra-amniotic Foley's catheter inflated by 30 cc of normal saline and 25 micrograms of vaginal misoprostol or 25 micrograms of vaginal misoprostol alone. Women underwent 6 hourly reviews and additional misoprostol inserted if required. The primary outcome was incidence of failed induction. Secondary outcomes were induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Results:** Foley's catheter and misoprostol group had a significantly shorter induction-delivery-time compared to those in the misoprostol only group. The mean induction-to-delivery interval was 4.8 h shorter comparing the combined versus misoprostol alone groups. The mean (standard deviation, (SD)) induction-to-delivery interval was 14.1 (6.9) hours for women in the combination of extra-amniotic Foley's catheter and misoprostol compared to 18.9 (7.2) hours for those in the misoprostol alone (P < 0.001).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		infection and uncertain gestational age.			

References:

Chen, W., et al. (2015). "Meta-analysis of Foley catheter plus misoprostol versus misoprostol alone for cervical ripening." International Journal of Gynaecology & Obstetrics 129(3): 193-198.

Levine et al. (2017) "Mechanical and Pharmacologic Methods of Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 128(6): 1357-1364.

Aduloju et al. (2016) . "Combined Foley's catheter with vaginal misoprostol for pre-induction cervical ripening: a randomised controlled trial." Australian & New Zealand Journal of Obstetrics & Gynaecology 56(6): 578-584.

Al-Ibraheemi et al (2018) "Misoprostol With Foley Bulb Compared With Misoprostol Alone for Cervical Ripening: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 23-29.

Osoti et al. (2018). "Effect of extra-amniotic Foley's catheter and vaginal misoprostol versus vaginal misoprostol alone on cervical ripening and induction of labor in Kenya, a randomized controlled trial." BMC pregnancy and childbirth 18(1).

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley Catheter plus misoprostol versus misoprostol alone
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

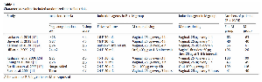
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen et al. Year Published: 2015 Location: Canada Journal: *International Journal of Gynecology and Obstetrics*	To summarize the evidence comparing Foley catheter plus misoprostol versus misoprostol alone for cervical ripening.	**Size:** 8 trials, 1153 patients **Inclusion Criteria**: To be included, studies had to have an RCT design, enroll pregnant women undergoing cervical	**Type:** Systematic Review **Outcomes Assessed**: The primary outcomes were the mean time to delivery and the rates of cesarean delivery,	**Results:** All studies reported the cesarean delivery rate. On the basis of random-effects estimation. The incidence of cesarean delivery was similar between the two groups (RR	**Study Limitations:** ☒ None ***Systematic Review***

		ripening for the purpose of labor induction for delivery of a viable fetus using a combination of Foley catheter and misoprostol, and have a comparison group receiving misoprostol alone for cervical ripening and labor induction.	chorioamnionitis (maternal temperature> 38 °C during the course of labor induction), and uterine tachysystole with fetal heart rate (FHR) changes. Secondary outcomes included meconium-stained amniotic fluid, oxytocin augmentation, endomyometritis, and admission to the neonatal intensive care unit {NICU). 	1.02 [95% CI 0.87-1.21]. P = 0.77; I2 = 0%)	☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Levine et al. Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate the effectiveness of four commonly used induction methods: misoprostol alone, Foley alone, misoprostol-cervical Foley concurrently, and Foley-oxytocin concurrently.	**Size:** 366 women **Inclusion Criteria**: Women undergoing labor induction with full-term (37 weeks of gestation or greater), singleton, vertex-presenting gestations, with no contraindication to vaginal delivery, intact membranes, Bishop score 6 or less, and cervical dilation 2 cm or less. **Exclusion Criteria:** A contraindication to a vaginal delivery or to misoprostol, fetal demise, or major fetal anomaly. Non-English speaking women, women with HIV, and women with medical conditions requiring an assisted second stage were also excluded.	**Type:** RCT **Intervention**: *Women in the misoprostol only group* received 25 micrograms of misprostol per vagina every 3 hours, repeated up to five additional times for a maximum of 24 hours. *Women in the cervical Foley* only group had a18F Foley catheter with 30cc balloon inserted digitally or by direct visualization with a speculum. The Foley bulb was placed just above the level of the internal os and inflated with 60cc of sterile water. *Women in the misoprostol--cervical Foley group* had both misoprostol and a cervical Foley placed concurrently using the same procedures as noted for the individual group	**Results:** There was no statistical difference in the cesarean delivery rate among the groups, both overall and when stratified by parity.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Aduloju O. et al. Year Published: 2016 Location: Australia Journal: *Australian & New Zealand Journal of Obstetrics & Gynaecology*	To compare the efficacy of combined Foley's catheter and vaginal misoprostol with Foley's catheter or low-dose vaginal misoprostol alone for cervical ripening	**Size:** 210 women **Inclusion Criteria**: Women with live singleton fetuses with cephalic presentation, intact membranes, reactive nonstress test and unfavourable cervices (Bishop's score <6) scheduled to undergo IOL at term. **Exclusion Criteria:** Women with pregnancies <37 weeks gestation, intrauterine fetal death, multiple gestations, previous uterine surgery, prelabour rupture of fetal membranes, abnormal nonstress test and any contraindication to vaginal delivery	**Type:** RCT **Intervention**: Women admitted for IOL, who met the inclusion criteria, were randomised into three groups, A (16f Foley filled to 30mL) , B (miso 25 microg every 6 hours 100 microg total) and C (combo A and B) The primary outcome measure was the rate of vaginal delivery. The secondary outcome measures were time interval to achieve a favorable cervix, induction-delivery interval and oxytocin requirements. Other variables assessed include the Apgar scores at 1 and 5 min, admission into special baby care unit (SCBU) and occurrence of complications of IOL such as uterine tachysystole, uterine hypertonus, hyperstimulation (tachysystole or hypertonus associated with fetal heart rate abnormalities), uterine rupture and fetal heart rate abnormalities.	**Results:** There was no significant difference in the route of delivery even though women in Group C (78.6%) achieved more vaginal deliveries than women in Group B (72.9%) and Group A (68.6%), P = 0.406.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Al-Ibraheemi Z. et al. Year Published: 2018 Location: USA Journal: *Obstetrics and Gynecology*	To test the hypothesis that cervical ripening using a combination of misoprostol and a transcervical Foley bulb leads to delivery within a shorter time compared with misoprostol alone.	**Size:** 200 **Inclusion Criteria**: Women admitted for cervical ripening. Inclusion criteria were gestational age 37 weeks or greater with intact membranes, singleton fetus, cephalic	**Type**: RCT **Intervention**: Patients were randomized to cervical ripening using misoprostol and a transcervical Foley bulb simultaneously or misoprostol alone. Primary outcome was time from placement of the	**Results:** There were no differences between groups with respect to the rate or indications for cesarean delivery.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

		presentation, and Bishop score 6 or less. **Exclusion criteria**: Prior uterine surgery, ruptured membranes, and any contraindication to vaginal delivery.	misoprostol to delivery. Secondary outcomes included time to active phase, time from active phase to delivery, cesarean delivery rate, uterine tachysystole, estimated blood loss, chorioamnionitis, cord pH, 5-minute Apgar score, and neonatal intensive care unit admission. Women who were randomized to the misoprostol only group received 25 micrograms of misoprostol inserted vaginally every 4 hours and repeated up to a maximum of six doses. Women randomized to the combination group received vaginal misoprostol as described previously for the misoprostol-only group and in addition, a Foley catheter with a 30-cc balloon and was filled with 60 cc of normal saline.		☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Osoti A., et al. Year Published: 2018 Location: Kenya Journal: *BMC pregnancy and childbirth*	To evaluate the efficacy of combination of extra-amniotic Foley's catheter and vaginal misoprostol compared to vaginal misoprostol alone for cervical ripening and induction of labor on the incidence of failed induction, induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Size:** 180 women **Inclusion Criteria**: Gestational age of 28 weeks or greater, singleton cephalic pregnancies, intact membranes, Bishop's score less than 6, and no contraindications for vaginal delivery after providing informed consent **Exclusion Criteria**: Favorable Bishop's score, fetal growth restriction, previous cesarean	**Type**: RCT **Intervention**: Pregnant women admitted for induction of labor were enrolled then randomized to either a combination of extra-amniotic Foley's catheter inflated by 30 cc of normal saline and 25 micrograms of vaginal misoprostol or 25 micrograms of vaginal misoprostol alone. Women underwent 6 hourly reviews and additional misoprostol inserted if required. The primary outcome	**Results:** There were no differences between groups with respect to the rate of cesarean delivery. RR 1.29 (95% CI 0.68-2.42) P=0.435	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		sections or other uterine surgeries, multiple gestation, contraindication to prostaglandins, fetal anomalies, estimated fetal weight more than 4000 g, placenta previa, non-reassuring fetal status, grand multiparity, HIV infection and uncertain gestational age.	was incidence of failed induction. Secondary outcomes were induction-to-delivery interval and adverse maternal and perinatal outcomes.		☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

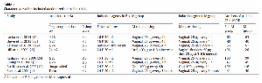
Chen, W., et al. (2015). "Meta-analysis of Foley catheter plus misoprostol versus misoprostol alone for cervical ripening." International Journal of Gynaecology & Obstetrics 129(3): 193-198.
Levine et al. (2017) "Mechanical and Pharmacologic Methods of Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 128(6): 1357-1364.
Aduloju et al. (2016) . "Combined Foley's catheter with vaginal misoprostol for pre-induction cervical ripening: a randomised controlled trial." Australian & New Zealand Journal of Obstetrics & Gynaecology 56(6): 578-584.
Al-Ibraheemi et al (2018) "Misoprostol With Foley Bulb Compared With Misoprostol Alone for Cervical Ripening: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 23-29.
Osoti et al. (2018). "Effect of extra-amniotic Foley's catheter and vaginal misoprostol versus vaginal misoprostol alone on cervical ripening and induction of labor in Kenya, a randomized controlled trial." BMC pregnancy and childbirth 18(1).

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley Catheter plus misoprostol versus misoprostol alone
Outcome: Chorioamnionitis

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low Overall RR is 1.42 (95% CI 0.95-2.14) P=0.08,
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations

Author: Chen et al. Year Published: 2015 Location: Canada Journal: *International Journal of Gynecology and Obstetrics*	To summarize the evidence comparing Foley catheter plus misoprostol versus misoprostol alone for cervical ripening.	**Size:** 4 trials, 666 patients **Inclusion Criteria**: To be included, studies had to have an RCT design, enroll pregnant women undergoing cervical ripening for the purpose of labor induction for delivery of a viable fetus using a combination of Foley catheter and misoprostol, and have a comparison group receiving misoprostol alone for cervical ripening and labor induction.	**Type:** Systematic Review **Outcomes Assessed**: The primary outcomes were the mean time to delivery and the rates of cesarean delivery, chorioamnionitis (maternal temperature> 38 °C during the course of labor induction), and uterine tachysystole with fetal heart rate (FHR) changes. Secondary outcomes included meconium-stained amniotic fluid, oxytocin augmentation, endomyometritis, and admission to the neonatal intensive care unit {NICU). 	**Results:** There was a significant increase in the risk of chorioamnionitis in the combination group (RR 2.07 [95% CI 1.04-4.13], P = 0.04; I2 = 30%) Combo: 34/314 (10.8%) Miso: 18/352 (5.1%)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Levine et al. Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate the effectiveness of four commonly used induction methods: misoprostol alone, Foley alone, misoprostol-cervical Foley concurrently, and Foley-oxytocin concurrently.	**Size:** 366 women **Inclusion Criteria**: Women undergoing labor induction with full-term (37 weeks of gestation or greater), singleton, vertex-presenting gestations, with no contraindication to vaginal delivery, intact membranes, Bishop score 6 or less, and cervical dilation 2 cm or less. **Exclusion Criteria:** A contraindication to a vaginal delivery or to misoprostol, fetal demise, or major fetal anomaly. Non-English speaking women, women with HIV, and women with medical conditions	**Type:** RCT **Intervention**: *Women in the misoprostol only group* received 25 micrograms of misoprostol per vagina every 3 hours, repeated up to five additional times for a maximum of 24 hours. *Women in the cervical Foley* only group had a18F Foley catheter with 30cc balloon inserted digitally or by direct visualization with a speculum. The Foley bulb was placed just above the level of the internal os and inflated with 60cc of sterile water.	**Results:** There was no statistical difference in the chorio rates among the groups. RR 1.626 (95% CI 0.74-3.57) Combo: 15/123 (12.2%) Miso: 9/120 (7.5%)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		requiring an assisted second stage were also excluded.	*Women in the misoprostol--cervical Foley group* had both misoprostol and a cervical Foley placed concurrently using the same procedures as noted for the individual group.		☐ Difference in important prognostic factors at baseline
Author: Al-Ibraheemi Z. et al. Year Published: 2018 Location: USA Journal: *Obstetrics and Gynecology*	To test the hypothesis that cervical ripening using a combination of misoprostol and a transcervical Foley bulb leads to delivery within a shorter time compared with misoprostol alone.	**Size:** 200 **Inclusion Criteria**: Women admitted for cervical ripening. Inclusion criteria were gestational age 37 weeks or greater with intact membranes, singleton fetus, cephalic presentation, and Bishop score 6 or less. **Exclusion criteria**: Prior uterine surgery, ruptured membranes, and any contraindication to vaginal delivery.	**Type**: RCT **Intervention**: Patients were randomized to cervical ripening using misoprostol and a transcervical Foley bulb simultaneously or misoprostol alone. Primary outcome was time from placement of the misoprostol to delivery. Secondary outcomes included time to active phase, time from active phase to delivery, cesarean delivery rate, uterine tachysystole, estimated blood loss, chorioamnionitis, cord pH, 5-minute Apgar score, and neonatal intensive care unit admission. Women who were randomized to the misoprostol only group received 25 micrograms of misoprostol inserted vaginally every 4 hours and repeated up to a maximum of six doses. Women randomized to the combination group received vaginal misoprostol as described previously for the misoprostol-only group and in addition, a Foley catheter with a 30-cc balloon and was filled with 60 cc of normal saline.	**Results:** There were no differences between groups with respect to the rate of chorioamnionitis. RR 0.50 (95% CI 0.15-1.60) Combo: 4/100 (4%) Miso: 8/100 (8%)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

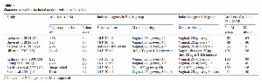
Chen, W., et al. (2015). "Meta-analysis of Foley catheter plus misoprostol versus misoprostol alone for cervical ripening." International Journal of Gynaecology & Obstetrics 129(3): 193-198.
Levine et al. (2017) "Mechanical and Pharmacologic Methods of Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 128(6): 1357-1364.
Al-Ibraheemi et al (2018) "Misoprostol With Foley Bulb Compared With Misoprostol Alone for Cervical Ripening: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 23-29.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley Catheter plus misoprostol versus misoprostol alone
Outcome: Contraction abnormalities

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low For tachysystole the pooled RR is 0.57 (95% CI 0.43-0.75) P=0.0001
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Chen et al. Year Published: 2015 Location: Canada Journal: *International Journal of Gynecology and Obstetrics*	To summarize the evidence comparing Foley catheter plus misoprostol versus misoprostol alone for cervical ripening.	**Size:** 5 trials, 792 patients **Inclusion Criteria**: To be included, studies had to have an RCT design, enroll pregnant women undergoing cervical ripening for the purpose of labor induction for delivery of a viable fetus using a combination of Foley catheter and misoprostol, and have a comparison group receiving	**Type:** Systematic Review **Outcomes Assessed**: The primary outcomes were the mean time to delivery and the rates of cesarean delivery, chorioamnionitis (maternal temperature> 38 °C during the course of labor induction), and uterine tachysystole with fetal heart rate (FHR) changes. Secondary outcomes included meconium-stained amniotic	**Results:** A significant decrease in the risk of tachysystole with FHR changes was observed in the combination group (RR 0.58 [95% CI 0.38-0.91], P = 0.02; I2 = 51 %) The sensitivity analysis showed a dramatic decrease in heterogeneity after omission of the low-quality study (RR 0.71 [95% CI 0.52-0.97], P = 0.03; 12 = 0%).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

		misoprostol alone for cervical ripening and labor induction.	fluid, oxytocin augmentation, endomyometritis, and admission to the neonatal intensive care unit {NICU). 		☐ Inappropriate pooled analysis
Author: Aduloju O. et al. Year Published: 2016 Location: Australia Journal: *Australian & New Zealand Journal of Obstetrics & Gynaecology*	To compare the efficacy of combined Foley's catheter and vaginal misoprostol with Foley's catheter or low-dose vaginal misoprostol alone for cervical ripening	**Size:** 210 women **Inclusion Criteria**: Women with live singleton fetuses with cephalic presentation, intact membranes, reactive nonstress test and unfavourable cervices (Bishop's score <6) scheduled to undergo IOL at term. **Exclusion Criteria:** Women with pregnancies <37 weeks' gestation, intrauterine fetal death, multiple gestations, previous uterine surgery, prelabour rupture of fetal membranes, abnormal nonstress test and any contraindication to vaginal delivery	**Type:** RCT **Intervention**: Women admitted for IOL, who met the inclusion criteria, were randomised into three groups, A (16f Foley filled to 30mL) , B (miso 25 microg every 6 hours 100 microg total) and C (combo A and B) The primary outcome measure was the rate of vaginal delivery. The secondary outcome measures were time interval to achieve a favorable cervix, induction-delivery interval and oxytocin requirements. Other variables assessed include the Apgar scores at 1 and 5 min, admission into special baby care unit (SCBU) and occurrence of complications of IOL such as uterine tachysystole, uterine hypertonus, hyperstimulation (tachysystole or hypertonus associated with fetal heart rate abnormalities), uterine rupture and fetal heart rate abnormalities.	**Results:** There was no case of uterine hyperstimulation, tachysystole or uterine rupture.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Al-Ibraheemi Z. et al. Year Published: 2018 Location: USA Journal: *Obstetrics and Gynecology*	To test the hypothesis that cervical ripening using a combination of misoprostol and a transcervical Foley bulb leads to delivery within a shorter time compared with misoprostol alone.	**Size:** 200 **Inclusion Criteria**: Women admitted for cervical ripening. Inclusion criteria were gestational age 37 weeks or greater with intact membranes, singleton fetus, cephalic presentation, and Bishop score 6 or less. **Exclusion criteria**: Prior uterine surgery, ruptured membranes, and any contraindication to vaginal delivery.	**Type**: RCT **Intervention**: Patients were randomized to cervical ripening using misoprostol and a transcervical Foley bulb simultaneously or misoprostol alone. Primary outcome was time from placement of the misoprostol to delivery. Secondary outcomes included time to active phase, time from active phase to delivery, cesarean delivery rate, uterine tachysystole, estimated blood loss, chorioamnionitis, cord pH, 5-minute Apgar score, and neonatal intensive care unit admission. Women who were randomized to the misoprostol only group received 25 micrograms of misoprostol inserted vaginally every 4 hours and repeated up to a maximum of six doses. Women randomized to the combination group received vaginal misoprostol as described previously for the misoprostol-only group and in addition, a Foley catheter with a 30-cc balloon and was filled with 60 cc of normal saline.	**Results:** There were no differences between groups with respect to the rate of tachysystole. RR=0.5 (0.19-1.28)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

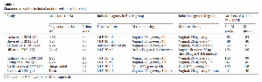
Author: Osoti A., et al. Year Published: 2018 Location: Kenya Journal: *BMC pregnancy and childbirth*	To evaluate the efficacy of combination of extra-amniotic Foley's catheter and vaginal misoprostol compared to vaginal misoprostol alone for cervical ripening and induction of labor on the incidence of failed induction, induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Size:** 180 women **Inclusion Criteria**: Gestational age of 28 weeks or greater, singleton cephalic pregnancies, intact membranes, Bishop's score less than 6, and no contraindications for vaginal delivery after providing informed consent. **Exclusion Criteria**: Favorable Bishop's score, fetal growth restriction, previous cesarean sections or other uterine surgeries, multiple gestation, contraindication to prostaglandins, fetal anomalies, estimated fetal weight more than 4000 g, placenta previa, non-reassuring fetal status, grand multiparity, HIV infection and uncertain gestational age.	**Type**: RCT **Intervention**: Pregnant women admitted for induction of labor were enrolled then randomized to either a combination of extra-amniotic Foley's catheter inflated by 30 cc of normal saline and 25 micrograms of vaginal misoprostol or 25 micrograms of vaginal misoprostol alone. Women underwent 6 hourly reviews and additional misoprostol inserted if required. The primary outcome was incidence of failed induction. Secondary outcomes were induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Results:** There were no differences between groups with respect to the rate of Uterine Hyperstimulation. RR 0.33 (95% CI 0.01-4.16) P=0.315.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Chen, W., et al. (2015). "Meta-analysis of Foley catheter plus misoprostol versus misoprostol alone for cervical ripening." International Journal of Gynaecology & Obstetrics 129(3): 193-198.
Levine et al. (2017) "Mechanical and Pharmacologic Methods of Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 128(6): 1357-1364.
Aduloju et al. (2016) . "Combined Foley's catheter with vaginal misoprostol for pre-induction cervical ripening: a randomised controlled trial." Australian & New Zealand Journal of Obstetrics & Gynaecology 56(6): 578-584.
Al-Ibraheemi et al (2018) "Misoprostol With Foley Bulb Compared With Misoprostol Alone for Cervical Ripening: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 23-29.
Osoti et al. (2018). "Effect of extra-amniotic Foley's catheter and vaginal misoprostol versus vaginal misoprostol alone on cervical ripening and induction of labor in Kenya, a randomized controlled trial." BMC pregnancy and childbirth 18(1).

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley Catheter plus misoprostol versus misoprostol alone
Outcome: Adverse neonatal outcomes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Chen et al. Year Published: 2015 Location: Canada Journal: *International Journal of Gynecology and Obstetrics*	To summarize the evidence comparing Foley catheter plus misoprostol versus misoprostol alone for cervical ripening.	**Size:** 5 trials, 792 patients. **Inclusion Criteria**: To be included, studies had to have an RCT design, enroll pregnant women undergoing cervical ripening for the purpose of labor induction for delivery of a viable fetus using a combination of Foley catheter and misoprostol, and have a comparison group receiving misoprostol alone for cervical ripening and labor induction.	**Type:** Systematic Review **Outcomes Assessed**: The primary outcomes were the mean time to delivery and the rates of cesarean delivery, chorioamnionitis (maternal temperature> 38 °C during the course of labor induction), and uterine tachysystole with fetal heart rate (FHR) changes. Secondary outcomes included meconium-stained amniotic fluid, oxytocin augmentation, endomyometritis, and admission to the neonatal intensive care unit {NICU). 	**Results:** No significant differences between the two groups were recorded for the presence of meconium-stained amniotic fluid or NICU admission.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis
Author: Levine et al. Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate the effectiveness of four commonly used induction methods: misoprostol alone, Foley alone, misoprostol-cervical Foley concurrently, and Foley-oxytocin concurrently.	**Size:** 366 women **Inclusion Criteria**: Women undergoing labor induction with full-term (37 weeks of gestation or greater), singleton, vertex-presenting gestations,	**Type:** RCT **Intervention**: *Women in the misoprostol only group* received 25 micrograms of misprostol per vagina every 3 hours, repeated up to five additional	**Results:** There was no statistical difference in the NICU admission or sepsis rates among the groups	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

		with no contraindication to vaginal delivery, intact membranes, Bishop score 6 or less, and cervical dilation 2 cm or less. **Exclusion Criteria:** A contraindication to a vaginal delivery or to misoprostol, fetal demise, or major fetal anomaly. Non-English speaking women, women with HIV, and women with medical conditions requiring an assisted second stage were also excluded.	times for a maximum of 24 hours. *Women in the cervical Foley* only group had a18F Foley catheter with 30cc balloon inserted digitally or by direct visualization with a speculum. The Foley bulb was placed just above the level of the internal os and inflated with 60cc of sterile water. *Women in the misoprostol--cervical Foley group* had both misoprostol and a cervical Foley placed concurrently using the same procedures as noted for the individual group.		☐ Lack of allocation concealment ☐ Unknown allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Aduloju O. et al. Year Published: 2016 Location: Australia Journal: *Australian & New Zealand Journal of Obstetrics & Gynaecology*	To compare the efficacy of combined Foley's catheter and vaginal misoprostol with Foley's catheter or low-dose vaginal misoprostol alone for cervical ripening	**Size:** 210 women **Inclusion Criteria**: Women with live singleton fetuses with cephalic presentation, intact membranes, reactive nonstress test and unfavourable cervices (Bishop's score <6) scheduled to undergo IOL at term. **Exclusion Criteria:** Women with pregnancies <37 weeks' gestation, intrauterine fetal death, multiple gestations, previous uterine surgery, prelabour rupture of fetal membranes, abnormal nonstress test and any contraindication to vaginal delivery.	**Type:** RCT **Intervention**: Women admitted for IOL, who met the inclusion criteria, were randomised into three groups, A (16f Foley filled to 30mL) , B (miso 25 microg every 6 hours 100 microg total) and C (combo A and B). The primary outcome measure was the rate of vaginal delivery. The secondary outcome measures were time interval to achieve a favorable cervix, induction-delivery interval and oxytocin requirements. Other variables assessed include the Apgar scores at 1 and 5 min,	**Results:** The neonatal outcomes, including, Apgar score, admission into the NICU and indication for admission into NICU, are similar in the 3 groups.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

			admission into special baby care unit (SCBU) and occurrence of complications of IOL such as uterine tachysystole, uterine hypertonus, hyperstimulation (tachysystole or hypertonus associated with fetal heart rate abnormalities), uterine rupture and fetal heart rate abnormalities.		
Author: Al-Ibraheemi Z. et al. Year Published: 2018 Location: USA Journal: *Obstetrics and Gynecology*	To test the hypothesis that cervical ripening using a combination of misoprostol and a transcervical Foley bulb leads to delivery within a shorter time compared with misoprostol alone.	**Size:** 200 **Inclusion Criteria**: Women admitted for cervical ripening. Inclusion criteria were gestational age 37 weeks or greater with intact membranes, singleton fetus, cephalic presentation, and Bishop score 6 or less. **Exclusion criteria**: Prior uterine surgery, ruptured membranes, and any contraindication to vaginal delivery.	**Type**: RCT **Intervention**: Patients were randomized to cervical ripening using misoprostol and a transcervical Foley bulb simultaneously or misoprostol alone. Primary outcome was time from placement of the misoprostol to delivery. Secondary outcomes included time to active phase, time from active phase to delivery, cesarean delivery rate, uterine tachysystole, estimated blood loss, chorioamnionitis, cord pH, 5-minute Apgar score, and neonatal intensive care unit admission. Women who were randomized to the misoprostol only group received 25 micrograms of misoprostol inserted vaginally every 4 hours and repeated up to a maximum of six doses. Women randomized to the combination group received vaginal misoprostol as described previously for the	**Results:** Regarding neonatal outcome, there was no difference between groups with respect to venous cord pH, birth weight, 5-minute Apgar score, and neonatal intensive care unit admission. There was a higher rate of meconium stained amniotic fluid in the misoprostol-only group compared with the combined misoprostol–Foley group (P=0.025)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

			misoprostol-only group and in addition, a Foley catheter with a 30-cc balloon and was filled with 60 cc of normal saline.		
Author: Osoti A., et al. Year Published: 2018 Location: Kenya Journal: *BMC pregnancy and childbirth*	To evaluate the efficacy of combination of extra-amniotic Foley's catheter and vaginal misoprostol compared to vaginal misoprostol alone for cervical ripening and induction of labor on the incidence of failed induction, induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Size:** 180 women **Inclusion Criteria**: Gestational age of 28 weeks or greater, singleton cephalic pregnancies, intact membranes, Bishop's score less than 6, and no contraindications for vaginal delivery after providing informed consent **Exclusion Criteria**: Favorable Bishop's score, fetal growth restriction, previous cesarean sections or other uterine surgeries, multiple gestation, contraindication to prostaglandins, fetal anomalies, estimated fetal weight more than 4000 g, placenta previa, non-reassuring fetal status, grand multiparity, HIV infection and uncertain gestational age.	**Type**: RCT **Intervention**: Pregnant women admitted for induction of labor were enrolled then randomized to either a combination of extra-amniotic Foley's catheter inflated by 30 cc of normal saline and 25 micrograms of vaginal misoprostol or 25 micrograms of vaginal misoprostol alone. Women underwent 6 hourly reviews and additional misoprostol inserted if required. The primary outcome was incidence of failed induction. Secondary outcomes were induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Results:** Similar proportion of neonates in the combined misoprostol and extra-amniotic Foley's catheter group compared to those in the misoprostol alone group were admitted to neonatal intensive care unit due to poor APGAR score (7.8% in combined arm versus 6.7% in misoprostol alone), and prematurity (9.8% in combined versus 12.2% in misoprostol alone)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Chen, W., et al. (2015). "Meta-analysis of Foley catheter plus misoprostol versus misoprostol alone for cervical ripening." International Journal of Gynaecology & Obstetrics 129(3): 193-198.
Levine et al. (2017) "Mechanical and Pharmacologic Methods of Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 128(6): 1357-1364.
Aduloju et al. (2016) . "Combined Foley's catheter with vaginal misoprostol for pre-induction cervical ripening: a randomised controlled trial." Australian & New Zealand Journal of Obstetrics & Gynaecology 56(6): 578-584.
Al-Ibraheemi et al (2018) "Misoprostol With Foley Bulb Compared With Misoprostol Alone for Cervical Ripening: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 23-29.
Osoti et al. (2018). "Effect of extra-amniotic Foley's catheter and vaginal misoprostol versus vaginal misoprostol alone on cervical ripening and induction of labor in Kenya, a randomized controlled trial." BMC pregnancy and childbirth 18(1).

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley Catheter plus misoprostol versus misoprostol alone
Outcome: Failed induction

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Osoti A., et al. Year Published: 2018 Location: Kenya Journal: *BMC pregnancy and childbirth*	To evaluate the efficacy of combination of extra-amniotic Foley's catheter and vaginal misoprostol compared to vaginal misoprostol alone for cervical ripening and induction of labor on the incidence of failed induction, induction-to-delivery interval and adverse maternal and perinatal outcomes.	**Size:** 180 women **Inclusion Criteria**: Gestational age of 28 weeks or greater, singleton cephalic pregnancies, intact membranes, Bishop's score less than 6, and no contraindications for vaginal delivery after providing informed consent. **Exclusion Criteria**: Favorable Bishop's score, fetal growth restriction, previous cesarean sections or other uterine surgeries, multiple gestation, contraindication to prostaglandins, fetal anomalies,	**Type**: RCT **Intervention**: Pregnant women admitted for induction of labor were enrolled then randomized to either a combination of extra-amniotic Foley's catheter inflated by 30 cc of normal saline and 25 micrograms of vaginal misoprostol or 25 micrograms of vaginal misoprostol alone. Women underwent 6 hourly reviews and additional misoprostol inserted if required. The primary outcome was incidence of failed induction. Secondary outcomes	**Results:** Overall, 18(10%) of the participants had failed induction, 10 (8.9%) in the combined extra-amniotic Foley's catheter and misoprostol group and 8 (11.1%) in the misoprostol alone group. There was no statistically significant difference in the risk of failed induction between the two arms.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

		estimated fetal weight more than 4000 g, placenta previa, non-reassuring fetal status, grand multiparity, HIV infection and uncertain gestational age.	were induction-to-delivery interval and adverse maternal and perinatal outcomes.		☐ Difference in important prognostic factors at baseline

Osoti et al. (2018). "Effect of extra-amniotic Foley's catheter and vaginal misoprostol versus vaginal misoprostol alone on cervical ripening and induction of labor in Kenya, a randomized controlled trial." BMC pregnancy and childbirth 18(1).

PGE2 plus oxytocin

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: PGE2 plus oxytocin
Outcome: Vaginal delivery within 24 h

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Gungorduk K. et al Year Published: 2011 Location: Turkey Journal: *Gynecologic and obstetric investigation*	To compare the efficacy and safety of sustained-release dinoprostone vaginal pessary and concurrent high-dose oxytocin infusion with sustained-release dinoprostone vaginal pessary followed 6 h later by high-dose oxytocin	**Size:** 500 **Inclusion Criteria**: A single live fetus in cephalic presentation, gestational age >37 weeks as determined by the last menstrual period or by a first-	**Type:** RCT **Intervention**: Dinoprostone (0.3 mg/h). It remained in the vagina for up to 12 h. At the same time, oxytocin infusion at 4 mU/min was started for all	**Results:** Vaginal delivery within 24 h of labor induction was significantly increased with sustained-release dinoprostone followed 6 h later by high-dose oxytocin infusion (92.8 vs. 82.0%, RR 2.82, 95% CI 1.58-5.04)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

	infusion for cervical ripening and labor induction.	or second-trimester ultrasound scan, and a Bishop score of <4 . **Exclusion Criteria:** Contraindication to vaginal delivery or previous cesarean section; if there was multiple pregnancy, breech presentation, or antepartum hemorrhage; if the estimated fetal weight was >4,500 g, and if there was any evidence of fetal distress	participants. Oxytocin infusion was doubled every 30 min to a maximum of 40 mU/min or until 4 contractions in 10 min were achieved. Women who were assigned randomly to receive the sustained release dinoprostone followed 6 h later by high-dose oxytocin (group B) had a single dose placed high into the vaginal fornix. Standard high-dose intravenous oxytocin was administered 6 h after insertion of the vaginal pessary. An initial dose of 4 mU/min was increased at 30-min intervals by 4 mU/min to a maximum dose 40 mU/min or until 4 contractions in 10 min were achieved.		☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Tan P. et al Year Published: 2007 Location: Malaysia Journal: BJOG: An International Journal of Obstetrics & Gynaecology	To compare concurrent oxytocin with dinoprostone pessary versus dinoprostone pessary in labour induction for nulliparas with an unfavourable cervix.	**Size:** 220 **Inclusion Criteria**: Nulliparous women at term (>36 weeks) with a singleton fetus, intact membranes, cephalic presentation and an unfavourable cervix (defined as a Bishop score< 6). Women with an intrauterine fetal death or known gross fetal anomaly were excluded.	**Type:** RCT **Intervention**: All women received 3 mg dinoprostone pessary for labour induction. Those randomised to the oxytocin arm received oxytocin infusion started at 1 mu/minute and doubled every 30 minutes to a maximum 16 mu/minute. Women assigned to placebo received identical volume of saline infusion. After 6 hours, infusion was stopped and vaginal reassessment performed to guide further management.	**Results:** Concurrent oxytocin infusion with dinoprostone pessary did not significantly increase vaginal delivery rate within 24 hours (48.6 versus 35.9%; P = 0.07, relative risk [RR] 1.4 [95% CI 1.0–1.9]).	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

					☐ Difference in important prognostic factors at baseline

References:

Gungorduk et al (2011) "Sustained-release dinoprostone vaginal pessary with concurrent high-dose oxytocin infusion compared to sustained-release dinoprostone vaginal pessary followed 6 h later by high-dose oxytocin infusion for labor induction in women at term with unfavorable cervix: a randomized controlled trial." Gynecologic and obstetric investigation 71(1): 32-40.
Tan Pc et al (2007). "Concurrent oxytocin with dinoprostone pessary versus dinoprostone pessary in labour induction of nulliparas with an unfavourable cervix: a randomised placebo-controlled trial." BJOG: An International Journal of Obstetrics & Gynaecology 114(7): 824-832.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: PGE2 plus oxytocin versus PGE2
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Gungorduk K. et al Year Published: 2011 Location: Turkey Journal: *Gynecologic and obstetric investigation*	To compare the efficacy and safety of sustained-release dinoprostone vaginal pessary and concurrent high-dose oxytocin infusion with sustained-release dinoprostone vaginal pessary followed 6 h	**Size:** 500 **Inclusion Criteria**: A single live fetus in cephalic presentation, gestational age >37 weeks as determined by the last menstrual period or by a first-	**Type:** RCT **Intervention**: Dinoprostone (0.3 mg/h). It remained in the vagina for up to 12 h. At the same time, oxytocin infusion at 4 mU/min was started for all	**Results:** There were more cesarean section deliveries in the dinoprostone with concurrent high-dose oxytocin group (16.8 vs. 6.8%, RR 0.36, 95% CI 0.20-0.65). (	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

	later by high-dose oxytocin infusion for cervical ripening and labor induction.	or second-trimester ultrasound scan, and a Bishop score of <4 . **Exclusion Criteria:** Contraindication to vaginal delivery or previous cesarean section; if there was multiple pregnancy, breech presentation, or antepartum hemorrhage; if the estimated fetal weight was >4,500 g, and if there was any evidence of fetal distress	participants. Oxytocin infusion was doubled every 30 min to a maximum of 40 mU/min or until 4 contractions in 10 min were achieved. Women who were assigned randomly to receive the sustained release dinoprostone followed 6 h later by high-dose oxytocin (group B) had a single dose placed high into the vaginal fornix. Standard high-dose intravenous oxytocin was administered 6 h after insertion of the vaginal pessary. An initial dose of 4 mU/min was increased at 30-min intervals by 4 mU/min to a maximum dose 40 mU/min or until 4 contractions in 10 min were achieved.	higher incidence of Fetal distress and Dystocia)	☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Tan P. et al Year Published: 2007 Location: Malaysia Journal: BJOG: An International Journal of Obstetrics & Gynaecology	To compare concurrent oxytocin with dinoprostone pessary versus dinoprostone pessary in labour induction for nulliparas with an unfavourable cervix.	**Size:** 220 **Inclusion Criteria**: Nulliparous women at term (>36 weeks) with a singleton fetus, intact membranes, cephalic presentation and an unfavourable cervix (defined as a Bishop score< 6). Women with an intrauterine fetal death or known gross fetal anomaly were excluded.	**Type:** RCT **Intervention**: All women received 3 mg dinoprostone pessary for labour induction. Those randomised to the oxytocin arm received oxytocin infusion started at 1 mu/minute and doubled every 30 minutes to a maximum 16 mu/minute. Women assigned to placebo received identical volume of saline infusion. After 6 hours, infusion was stopped and vaginal reassessment performed to guide further management.	**Results:** There was no significant reduction in the caesarean delivery rate (41.9 versus 44.7%, RR 0.94, 95% CI 0.69–1.28; P = 0.78)	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

					☐ Difference in important prognostic factors at baseline

References:

Gungorduk et al (2011) "Sustained-release dinoprostone vaginal pessary with concurrent high-dose oxytocin infusion compared to sustained-release dinoprostone vaginal pessary followed 6 h later by high-dose oxytocin infusion for labor induction in women at term with unfavorable cervix: a randomized controlled trial." Gynecologic and obstetric investigation 71(1): 32-40.
Tan Pc et al (2007). "Concurrent oxytocin with dinoprostone pessary versus dinoprostone pessary in labour induction of nulliparas with an unfavourable cervix: a randomised placebo-controlled trial." BJOG: An International Journal of Obstetrics & Gynaecology 114(7): 824-832.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing Induction of labor
Modality: PGE2 plus oxytocin vs a step approach
Outcome: Adverse Neonatal Outcomes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Gungorduk K. et al Year Published: 2011 Location: Turkey Journal: *Gynecologic and obstetric investigation*	To compare the efficacy and safety of sustained-release dinoprostone vaginal pessary and concurrent high-dose oxytocin infusion with sustained-release dinoprostone vaginal pessary followed 6 h later by high-dose oxytocin	**Size:** 500 **Inclusion Criteria**: A single live fetus in cephalic presentation, gestational age >37 weeks as determined by the last menstrual period or by a first-	**Type:** RCT **Intervention**: Dinoprostone (0.3 mg/h). It remained in the vagina for up to 12 h. At the same time, oxytocin infusion at 4 mU/min was started for all participants. Oxytocin infusion	**Results:** The incidence of an Apgar score of <7 at 5 min was higher in group A (3.6%) compared with group B (0.8%), although this was not statistically different (RR 0.21, 95% CI 0.04-1.01). There were significantly fewer NICU	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

	infusion for cervical ripening and labor induction.	or second-trimester ultrasound scan, and a Bishop score of <4 . **Exclusion Criteria:** Contraindication to vaginal delivery or previous cesarean section; if there was multiple pregnancy, breech presentation, or antepartum hemorrhage; if the estimated fetal weight was >4,500 g, and if there was any evidence of fetal distress	was doubled every 30 min to a maximum of 40 mU/min or until 4 contractions in 10 min were achieved. Women who were assigned randomly to receive the sustained release dinoprostone followed 6 h later by high-dose oxytocin (group B) had a single dose placed high into the vaginal fornix. Standard high-dose intravenous oxytocin was administered 6 h after insertion of the vaginal pessary. An initial dose of 4 mU/min was increased at 30-min intervals by 4 mU/min to a maximum dose 40 mU/min or until 4 contractions in 10 min were achieved.	admissions in group B (RR 0.32, 95% CI 0.11-0.89). The duration of stay in the neonatal unit ranged from 1 to 7 days, and all babies were discharged home with their mothers.	☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Tan P. et al Year Published: 2007 Location: Malaysia Journal: BJOG: An International Journal of Obstetrics & Gynaecology	To compare concurrent oxytocin with dinoprostone pessary versus dinoprostone pessary in labour induction for nulliparas with an unfavourable cervix.	**Size:** 220 **Inclusion Criteria**: Nulliparous women at term (>36 weeks) with a singleton fetus, intact membranes, cephalic presentation and an unfavourable cervix (defined as a Bishop score< 6). Women with an intrauterine fetal death or known gross fetal anomaly were excluded.	**Type:** RCT **Intervention**: All women received 3 mg dinoprostone pessary for labour induction. Those randomised to the oxytocin arm received oxytocin infusion started at 1 mu/minute and doubled every 30 minutes to a maximum 16 mu/minute. Women assigned to placebo received identical volume of saline infusion. After 6 hours, infusion was stopped and vaginal reassessment performed to guide further management.	**Results:** There was no significant difference in meconium-stained liquor. the number [%] of neonatal admissions to a neonatal unit (6 [5.7] versus 12 [11.7], P = 0.15), although not significantly different, were lower in women assigned to oxytocin. Apgar scores at 5 minutes and were not different. There was no perinatal mortality in this study.	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U

					☐ Difference in important prognostic factors at baseline

References:

Gungorduk et al (2011) "Sustained-release dinoprostone vaginal pessary with concurrent high-dose oxytocin infusion compared to sustained-release dinoprostone vaginal pessary followed 6 h later by high-dose oxytocin infusion for labor induction in women at term with unfavorable cervix: a randomized controlled trial." Gynecologic and obstetric investigation 71(1): 32-40.
Tan Pc et al (2007). "Concurrent oxytocin with dinoprostone pessary versus dinoprostone pessary in labour induction of nulliparas with an unfavourable cervix: a randomised placebo-controlled trial." BJOG: An International Journal of Obstetrics & Gynaecology 114(7): 824-832.

Foley Catheter plus oxytocin versus misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus misoprostol
Outcome: Vaginal delivery within 24 h and induction-to-delivery interval

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Moraes Filho et al Year Published: 2010 Location: Brazil Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare effectiveness and safety of 25 microg vaginal misoprostol versus Foley catheter and oxytocin for cervical ripening and labor induction in pregnant women with unripe cervices.	**Size:** 240 women **Inclusion Criteria**: Full-term or post-term pregnancies due to medical or obstetrical reasons. Inclusion cri-teria were an unfavorable cervix (Bishop	**Type:** RCT **Intervention**: 30-ml catheter was inserted and 30 ml of sterile water was injected into the balloon. Once the catheter	**Results:** Misoprostol was more effective in inducing labor than Foley catheter and oxytocin. Mean induction-to-vaginal delivery time with misoprostol was shorter (17.3 vs. 20.2 hours, p = 0.016).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

		score <6) and normal fetal heart rate. **Exclusion criteria**: Multiple gestations, non-cephalic presentation, previ-ous cesarean delivery or uterine scar, rupture of membranes, antepartum bleeding, genital herpes infection, fetal death, placenta previa or previous attempts to induce labor.	was extruded, intravenous oxytocin infusion was initiated. In the other group, a 25-µg tablet of misoprostol was placed in the vagina, every 6 hours up to a maximum of four doses.	**There were more vaginal deliveries in the misoprostol group at 12 (P< 0.001) and 18 (P= 0.007) hours, but the difference was no longer statistically significant at 24 and 48 hours.**	☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Moraes Filho et al (2010). "A randomized controlled trial comparing vaginal misoprostol versus Foley catheter plus oxytocin for labor induction." Acta Obstetricia et Gynecologica Scandinavica 89(8): 1045-1052.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations

Author: Moraes Filho et al Year Published: 2010 Location: Brazil Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare effectiveness and safety of 25 microg vaginal misoprostol versus Foley catheter and oxytocin for cervical ripening and labor induction in pregnant women with unripe cervices.	**Size:** 240 women **Inclusion Criteria**: Full-term or post-term pregnancies due to medical or obstetrical reasons. Inclusion cri-teria were an unfavorable cervix (Bishop score <6) and normal fetal heart rate. **Exclusion criteria**: Multiple gestations, non-cephalic presentation, previ-ous cesarean delivery or uterine scar, rupture of membranes, antepartum bleeding, genital herpes infection, fetal death, placenta previa or previous attempts to induce labor.	**Type:** RCT **Intervention**: 30-ml catheter was inserted and 30 ml of sterile water was injected into the balloon. Once the catheter was extruded, intravenous oxytocin infusion was initiated. In the other group, a 25-µg tablet of misoprostol was placed in the vagina, every 6 hours up to a maximum of four doses.	**Results:** There was a significant difference in indications for cesarean section between the groups, with a higher rate of failed induction in the Foley group and a higher rate of dystocia in the misoprostol group. **Not a significant different in the rate of cesarean section for either group (P=0.25)**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Moraes Filho et al (2010). "A randomized controlled trial comparing vaginal misoprostol versus Foley catheter plus oxytocin for labor induction." Acta Obstetricia et Gynecologica Scandinavica 89(8): 1045-1052.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus misoprostol
Outcome: Contraction abnormalities

Quality (certainty) of evidence for: (outcome)		
☐ High ☐ Moderate ☒ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect

		☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Moraes Filho et al Year Published: 2010 Location: Brazil Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare effectiveness and safety of 25 microg vaginal misoprostol versus Foley catheter and oxytocin for cervical ripening and labor induction in pregnant women with unripe cervices.	**Size:** 240 women **Inclusion Criteria**: Full-term or post-term pregnancies due to medical or obstetrical reasons. Inclusion cri-teria were an unfavorable cervix (Bishop score <6) and normal fetal heart rate. **Exclusion criteria**: Multiple gestations, non-cephalic presentation, previous cesarean delivery or uterine scar, rupture of membranes, antepartum bleeding, genital herpes infection, fetal death, placenta previa or previous attempts to induce labor.	**Type:** RCT **Intervention**: 30-ml catheter was inserted and 30 ml of sterile water was injected into the balloon. Once the catheter was extruded, intravenous oxytocin infusion was initiated. In the other group, a 25-µg tablet of misoprostol was placed in the vagina, every 6 hours up to a maximum of four doses.	**Results:** There were no significant differences between the two groups with respect to contractions and fetal well-being during labor.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Moraes Filho et al (2010). "A randomized controlled trial comparing vaginal misoprostol versus Foley catheter plus oxytocin for labor induction." Acta Obstetricia et Gynecologica Scandinavica 89(8): 1045-1052.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus misoprostol
Outcome: Adverse neonatal events

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Moraes Filho et al Year Published: 2010 Location: Brazil Journal: *Acta Obstetricia et Gynecologica Scandinavica*	To compare effectiveness and safety of 25 microg vaginal misoprostol versus Foley catheter and oxytocin for cervical ripening and labor induction in pregnant women with unripe cervices.	**Size:** 240 women **Inclusion Criteria**: Full-term or post-term pregnancies due to medical or obstetrical reasons. Inclusion cri-teria were an unfavorable cervix (Bishop score <6) and normal fetal heart rate. **Exclusion criteria**: Multiple gestations, non-cephalic presentation, previ-ous cesarean delivery or uterine scar, rupture of membranes, antepartum bleeding, genital herpes infection, fetal death, placenta previa or previous attempts to induce labor.	**Type:** RCT **Intervention**: 30-ml catheter was inserted and 30 ml of sterile water was injected into the balloon. Once the catheter was extruded, intravenous oxytocin infusion was initiated. In the other group, a 25-µg tablet of misoprostol was placed in the vagina, every 6 hours up to a maximum of four doses.	**Results:** There were no significant differences between the two groups with respect to in neonatal outcomes.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Moraes Filho et al (2010). "A randomized controlled trial comparing vaginal misoprostol versus Foley catheter plus oxytocin for labor induction." Acta Obstetricia et Gynecologica Scandinavica 89(8): 1045-1052.

Foley Catheter plus oxytocin versus oxytocin

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus oxytocin
Outcome: Vaginal delivery within 24 h and induction-to-delivery interval

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: El Kouly, Nabih Year Published: 2017 Location: Egypt Journal: *Journal of obstetrics and gynaecology*	To evaluate the effectiveness and safety of transcervical Foley catheter with and without oxytocin versus oxytocin alone for labour induction with unfavourable cervix.	**Size:** 108 **Inclusion Criteria**: Singleton pregnancy with a cephalic presentation at a gestational age greater than 28 weeks and the Bishop score < 5 were included. Women with any condition precluding vaginal delivery, estimated foetal weight more than 4500 g, a previous uterine	**Type**: RCT **Intervention**: Patients were randomly assigned to receive Foley catheter alone (I), Foley catheter plus oxytocin (II) or oxytocin alone (III). Outcomes were analysed in terms of success of induction, induction delivery interval, route of delivery, dose and duration of oxytocin, and complications.	**Results:** Most of the patients in the Foley group delivered vaginally [30 (83.3%) cases vs. 26 (72.2%) in catheter/oxytocin group, P=0 .25 and 21 (58.3%) in oxytocin group, P =0 .02]. However, they had a prolonged **induction-vaginal delivery time [18.51 h ± 4.55 vs. 11.34 h ± 1.89 in catheter/oxytocin group,**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		scar, clinically significant cervical or vaginal infection, chorioamnionitis, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage were excluded.		**P<.001 and 11.86 h±1.57 in oxytocin group, P<.001]** **11% of the patients in Foley group delivered within 12 hours compared to 55.6% in catheter/oxytocin group, P < 0.001 and 36.1 % in oxytocin group, P =0.01.**	☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Amorosa J. et al Year Published: 2017 Location: USA Journal: *American journal of obstetrics and gynecology*	To determine whether simultaneous use of an intracervical Foley bulb and oxytocin decreases time from induction start to delivery in nulliparous patients with PROM compared with the use of oxytocin alone.	**Size:** 128 women **Inclusion Criteria**: Cervix was dilated less than 3 cm or, if the primary provider wished to defer the initial cervical examination because of ruptured membrane status, the patient was having contractions less than 3 times every 10 minutes. **Exclusion Criteria:** Multifetal gestation, a known anomalous fetus, a fetus with malpresentation, a latex allergy, unexplained vaginal bleeding or contraindication to vaginal delivery, had received latency antibiotics, had had previous uterine surgery or were in spontaneous labor.	**Type**: RCT **Intervention**: Patients in the Foley bulb and oxytocin group had a 16-F, 30-cc Foley bulb was filled with 60 mL of normal saline. Oxytocin was started within 1 hour of Foley bulb placement. In the oxytocin alone group, oxytocin was started as soon as possible. In both groups, oxytocin was titrated according to institution's standard protocol in which the oxytocin infusion is started at 2 mU/ min. This dose is doubled every 30 minutes to a maximum dose of 16 mU/min (2-4-8-16) and then may be increased by 2 mU/min every 30 minutes to a maximum dose of 30 mU/min.	**Results:** No difference in induction-to-delivery time between women induced with concurrent Foley bulb/oxytocin vs oxytocin alone (median time 13.0 hours [interquartile 10.7, 16.1] compared with 10.8 hours [interquartile range 7.8, 16.6], respectively, P = .09)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Fitzapatrick C. et al Year Published: 2012 Location: USA Journal: *The Journal of Maternal-Fetal & Neonatal Medicine*	To evaluate cervical ripening with Foley balloon combined with a fixed vs. incremental low-dose oxytocin infusion.	**Size:** 116 **Inclusion Criteria**: 18 years old with a singleton pregnancy presenting for clinically indicated labor induction at 37	**Type**: RCT **Intervention**: 18-French foley catheter with a 30 cc balloon was placed and then inflated with 30 cc of sterile saline.	**Results:** There was no difference in median time to delivery among subjects receiving fixed low-dose vs. standard incremental low-dose oxytocin during induction of labor with a	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

		weeks or greater and a Bishop score of <6. **Exclusion Criteria:** History of prior cesarean delivery, prior failed labor induction, use of an induction agent during the current pregnancy, non-English or non-Spanish language, rupture of amniotic membranes, estimated fetal weight of 4500 g or more, placenta previa, recent antepartum bleeding, active genital herpes infection, and non-reassuring fetal status.	Subjects were assigned to either a fixed low dose oxytocin infusion protocol of 2 milli-Units/minute (mUs/ min, intervention group) or a standard incremental low-dose oxytocin infusion protocol starting at 1 mU/min and increasing by 2 mUs/min every 30 minutes (control group) to a maximal infusion rate of 20 mU/min.	Foley balloon (23.7 vs. 19.2 hours) P=0.766.	☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Mackeen A. et al Year Published: 2018 Location: USA Journal: *Journal of Obstetrics and Gynaecology*	To evaluate the use of a transcervical Foley catheter plus oxytocin infusion compared with oxytocin infusion alone for labor induction and cervical ripening in women 34 weeks of gestation or greater with prelabor rupture of membranes.	**Size:** 201 **Inclusion Criteria**: Fetus had to be cephalic and the mother English speaking with a plan for vaginal delivery. **Exclusion criteria**: Active labor and those with suspected intraamniotic infection, abruption or significant hemorrhage, latex allergy, greater than one prior cesarean delivery, any contraindication to vaginal delivery, or human immunodeficiency virus or acquired immunodeficiency syndrome.	**Type**: RCT **Intervention**: Participants were randomly allocated to a transcervical Foley catheter inflated to 30 cc with concurrent oxytocin infusion or oxytocin infusion alone. Oxytocin administration was standardized across sites. Oxytocin was started at a dose of 2 milliunits/min and increased by 2 milliunits/min every 30 minutes to achieve an adequate contraction pattern, as per the institution's definition, to a maximum dose of 30 milliunits/min.	**Results:** Although the average induction time was shorter in the Foley group as compared with the oxytocin group, this difference of approximately 0.4 hours is neither clinically nor statistically significant. **The overall proportion of women delivered within 12 and 24 hours was similar between the Foley and oxytocin groups**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
El Khouly, N. I. (2017) "A prospective randomized trial comparing Foley catheter, oxytocin, and combination Foley catheter-oxytocin for labour induction with unfavourable cervix." Journal of obstetrics and gynaecology 37(3): 309-314.

Amorosa et al (2017) "A randomized trial of Foley Bulb for Labor Induction in Premature Rupture of Membranes in Nulliparas (FLIP)." American journal of obstetrics and gynecology 217(3): 360.e361-360.e367.
Fitzpatrick et al (2012) "Cervical ripening with foley balloon plus fixed versus incremental low-dose oxytocin: a randomized controlled trial." The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians 25(7): 1006-1010.
Mackeen et al (2018). "Foley Plus Oxytocin Compared With Oxytocin for Induction After Membrane Rupture: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 4-11.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: El Kouly, Nabih Year Published: 2017 Location: Egypt Journal: *Journal of obstetrics and gynaecology*	To evaluate the effectiveness and safety of transcervical Foley catheter with and without oxytocin versus oxytocin alone for labour induction with unfavourable cervix.	**Size:** 108 **Inclusion Criteria**: Singleton pregnancy with a cephalic presentation at a gestational age greater than 28 weeks and the Bishop score < 5 were included. Women with any condition precluding vaginal delivery, estimated fetal weight more than 4500 g, a previous uterine scar, clinically significant cervical or vaginal	**Type**: RCT **Intervention**: Patients were randomly assigned to receive Foley catheter alone (I), Foley catheter plus oxytocin (II) or oxytocin alone (III). Outcomes were analyzed in terms of success of induction, induction delivery interval, route of delivery, dose and duration of oxytocin, and complications.	**Results:** The indications for Caesarean section (CS) were not significantly different between the study groups, as 4 cases (11.4%) in the Foley group had CS due to failed induction [inability to achieve cervical dilatation >4 cm after 12 h ± 3 of oxytocin administration compared to 8 cases (22.2%) in the catheter/oxytocin group, and 10 cases (27.7%) in the	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		infection, chorioamnionitis, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage were excluded.		oxytocin group, p = .5, 3 cases (8.3%) indicated by failure of Labour progress in the oxytocin group compared to 1 case (2.7%) in each Foley and catheter/oxytocin groups. Two cases (5.4%) from oxytocin group indicated by fetal distress were compared with one patient (2.7%) in each Foley and catheter/oxytocin groups.	☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Amorosa J. et al Year Published: 2017 Location: USA Journal: *American journal of obstetrics and gynecology*	To determine whether simultaneous use of an intracervical Foley bulb and oxytocin decreases time from induction start to delivery in nulliparous patients with PROM compared with the use of oxytocin alone.	**Size:** 128 women **Inclusion Criteria**: Cervix was dilated less than 3 cm or, if the primary provider wished to defer the initial cervical examination because of ruptured membrane status, the patient was having contractions less than 3 times every 10 minutes. **Exclusion Criteria:** multifetal gestation, a known anomalous fetus, a fetus with malpresentation, a latex allergy, unexplained vaginal bleeding or contraindication to vaginal delivery, had received latency antibiotics, had had previous uterine surgery or were in spontaneous labor.	**Type**: RCT **Intervention**: Patients in the Foley bulb and oxytocin group had a 16-F, 30-cc Foley bulb was filled with 60 mL of normal saline. Oxytocin was started within 1 hour of Foley bulb placement. In the oxytocin alone group, oxytocin was started as soon as possible. In both groups, oxytocin was titrated according to institution's standard protocol in which the oxytocin infusion is started at 2 mU/ min. This dose is doubled every 30 minutes to a maximum dose of 16 mU/min (2-4-8-16) and then may be increased by 2 mU/min every 30 minutes to a maximum dose of 30 mU/min.	**Results:** There were no differences in mode of delivery or indications for CS. (P=0.57)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Fitzapatrick C. et al Year Published: 2012 Location: USA Journal: *The Journal of Maternal-Fetal*	To evaluate cervical ripening with Foley balloon combined with a fixed vs. incremental low-dose oxytocin infusion.	**Size:** 116 **Inclusion Criteria**: 18 years old with a singleton pregnancy presenting for clinically indicated labor induction at 37	**Type**: RCT **Intervention**: 18-French foley catheter with a 30 cc balloon was placed and then inflated with 30 cc of sterile saline.	**Results:** There was no differences in mode of delivery (P=0.57).	**Study Limitations:** ☐ None ***RCTs***

& Neonatal Medicine		weeks or greater and a Bishop score of <6. **Exclusion Criteria:** History of prior cesarean delivery, prior failed labor induction, use of an induction agent during the current pregnancy, non-English or non-Spanish language, rupture of amniotic membranes, estimated fetal weight of 4500 g or more, placenta previa, recent antepartum bleeding, active genital herpes infection, and non-reassuring fetal status.	Subjects were assigned to either a fixed low dose oxytocin infusion protocol of 2 milli-Units/minute (mUs/ min, intervention group) or a standard incremental low-dose oxytocin infusion protocol starting at 1 mU/min and increasing by 2 mUs/min every 30 minutes (control group) to a maximal infusion rate of 20 mU/min.		☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Mackeen A. et al Year Published: 2018 Location: USA Journal: *Journal of Obstetrics and Gynaecology*	To evaluate the use of a transcervical Foley catheter plus oxytocin infusion compared with oxytocin infusion alone for labor induction and cervical ripening in women 34 weeks of gestation or greater with prelabor rupture of membranes.	**Size:** 201 **Inclusion Criteria**: Fetus had to be cephalic and the mother English speaking with a plan for vaginal delivery. **Exclusion criteria**: Active labor and those with suspected intraamniotic infection, abruption or significant hemorrhage, latex allergy, greater than one prior cesarean delivery, any contraindication to vaginal delivery, or human immunodeficiency virus or acquired immunodeficiency syndrome.	**Type**: RCT **Intervention**: Participants were randomly allocated to a transcervical Foley catheter inflated to 30 cc with concurrent oxytocin infusion or oxytocin infusion alone. Oxytocin administration was standardized across sites. Oxytocin was started at a dose of 2 milliunits/min and increased by 2 milliunits/ min every 30 minutes to achieve an adequate contraction pattern, as per the institution's definition, to a maximum dose of 30 milliunits/min.	**Results:** No significant differences were noted between study groups with respect to mode of delivery or indications for cesarean delivery.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

El Khouly, N. I. (2017) "A prospective randomized trial comparing Foley catheter, oxytocin, and combination Foley catheter-oxytocin for labour induction with unfavourable cervix." Journal of obstetrics and gynaecology 37(3): 309-314.
Amorosa et al (2017) "A randomized trial of Foley Bulb for Labor Induction in Premature Rupture of Membranes in Nulliparas (FLIP)." American journal of obstetrics and gynecology 217(3): 360.e361-360.e367.
Fitzpatrick et al (2012) "Cervical ripening with foley balloon plus fixed versus incremental low-dose oxytocin: a randomized controlled trial." The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians 25(7): 1006-1010.
Mackeen et al (2018). "Foley Plus Oxytocin Compared With Oxytocin for Induction After Membrane Rupture: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 4-11.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin
Outcome: Contraction abnormalities

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: El Kouly, Nabih Year Published: 2017 Location: Egypt Journal: *Journal of obstetrics and gynaecology*	To evaluate the effectiveness and safety of transcervical Foley catheter with and without oxytocin versus oxytocin alone for labour induction with unfavourable cervix.	**Size:** 108 **Inclusion Criteria**: Singleton pregnancy with a cephalic presentation at a gestational age greater than 28 weeks and the Bishop score < 5 were included. Women with any condition precluding vaginal delivery,	**Type**: RCT **Intervention**: Patients were randomly assigned to receive Foley catheter alone (I), Foley catheter plus oxytocin (II) or oxytocin alone (III). Outcomes were analyzed in terms of success of induction, induction delivery interval, route of	**Results:** There were 2 instances of uterine hyperstimulation	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment

		estimated fetal weight more than 4500 g, a previous uterine scar, clinically significant cervical or vaginal infection, chorioamnionitis, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage were excluded.	delivery, dose and duration of oxytocin, and complications.		☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Amorosa J. et al Year Published: 2017 Location: USA Journal: *American journal of obstetrics and gynecology*	To determine whether simultaneous use of an intracervical Foley bulb and oxytocin decreases time from induction start to delivery in nulliparous patients with PROM compared with the use of oxytocin alone.	**Size:** 128 women **Inclusion Criteria**: Cervix was dilated less than 3 cm or, if the primary provider wished to defer the initial cervical examination because of ruptured membrane status, the patient was having contractions less than 3 times every 10 minutes. **Exclusion Criteria:** multifetal gestation, a known anomalous fetus, a fetus with malpresentation, a latex allergy, unexplained vaginal bleeding or contraindication to vaginal delivery, had received latency antibiotics, had had previous uterine surgery or were in spontaneous labor.	**Type**: RCT **Intervention**: Patients in the Foley bulb and oxytocin group had a 16-F, 30-cc Foley bulb was filled with 60 mL of normal saline. Oxytocin was started within 1 hour of Foley bulb placement. In the oxytocin alone group, oxytocin was started as soon as possible. In both groups, oxytocin was titrated according to institution's standard protocol in which the oxytocin infusion is started at 2 mU/ min. This dose is doubled every 30 minutes to a maximum dose of 16 mU/min (2-4-8-16) and then may be increased by 2 mU/min every 30 minutes to a maximum dose of 30 mU/min.	**Results:** Both groups had similar rates of tachysystole, and the total and maximum doses of oxytocin were similar between both groups.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Fitzapatrick C. et al Year Published: 2012 Location: USA Journal: *The Journal of Maternal-Fetal & Neonatal Medicine*	To evaluate cervical ripening with Foley balloon combined with a fixed vs. incremental low-dose oxytocin infusion.	**Size:** 116 **Inclusion Criteria**: 18 years old with a singleton pregnancy presenting for clinically indicated labor induction at 37 weeks or greater and a Bishop score of <6. **Exclusion Criteria:** History of prior cesarean delivery, prior failed labor induction, use of an induction agent during the current pregnancy, non-English or non-Spanish language, rupture of amniotic membranes, estimated fetal weight of 4500 g or more, placenta previa, recent antepartum bleeding, active genital herpes infection, and non-reassuring fetal status.	**Type**: RCT **Intervention**: 18-French foley catheter with a 30 cc balloon was placed and then inflated with 30 cc of sterile saline. Subjects were assigned to either a fixed low dose oxytocin infusion protocol of 2 milli-Units/minute (mUs/ min, intervention group) or a standard incremental low-dose oxytocin infusion protocol starting at 1 mU/min and increasing by 2 mUs/min every 30 minutes (control group) to a maximal infusion rate of 20 mU/min.	**Results:** There was no differences in tachysystole rates (P=0.34)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
El Khouly, N. I. (2017) "A prospective randomized trial comparing Foley catheter, oxytocin, and combination Foley catheter-oxytocin for labour induction with unfavourable cervix." Journal of obstetrics and gynaecology 37(3): 309-314.
Amorosa et al (2017) "A randomized trial of Foley Bulb for Labor Induction in Premature Rupture of Membranes in Nulliparas (FLIP)." American journal of obstetrics and gynecology 217(3): 360.e361-360.e367.
Fitzpatrick et al (2012) "Cervical ripening with foley balloon plus fixed versus incremental low-dose oxytocin: a randomized controlled trial." The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians 25(7): 1006-1010.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin
Outcome: Adverse neonatal events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies: ☒ High ☐ Medium ☐ Low	**Lower Quality Rating if**: ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations**: Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: El Kouly, Nabih Year Published: 2017 Location: Egypt Journal: *Journal of obstetrics and gynaecology*	To evaluate the effectiveness and safety of transcervical Foley catheter with and without oxytocin versus oxytocin alone for labour induction with unfavourable cervix.	**Size:** 108 **Inclusion Criteria**: Singleton pregnancy with a cephalic presentation at a gestational age greater than 28 weeks and the Bishop score < 5 were included. Women with any condition precluding vaginal delivery, estimated fetal weight more than 4500 g, a previous uterine scar, clinically significant cervical or vaginal infection, chorioamnionitis, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage were excluded.	**Type**: RCT **Intervention**: Patients were randomly assigned to receive Foley catheter alone (I), Foley catheter plus oxytocin (II) or oxytocin alone (III). Outcomes were analyzed in terms of success of induction, induction delivery interval, route of delivery, dose and duration of oxytocin, and complications.	**Results:** There were 4 instances of admission to the NICU	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Amorosa J. et al Year Published: 2017 Location: USA Journal: *American journal of obstetrics and gynecology*	To determine whether simultaneous use of an intracervical Foley bulb and oxytocin decreases time from induction start to delivery in nulliparous patients with	**Size:** 128 women **Inclusion Criteria**: cervix was dilated less than 3 cm or, if the primary provider wished to defer the initial cervical examination because of	**Type**: RCT **Intervention**: Patients in the Foley bulb and oxytocin group had a 16-F, 30-cc Foley bulb was filled with 60 mL of normal saline. Oxytocin was started	**Results:** There were no differences in Chorioamnionitis rates. There were no differences in neonatal birth weight, Apgar scores, or admission to the neonatal intensive care unit.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit

	PROM compared with the use of oxytocin alone.	ruptured membrane status, the patient was having contractions less than 3 times every 10 minutes. **Exclusion Criteria:** Multifetal gestation, a known anomalous fetus, a fetus with malpresentation, a latex allergy, unexplained vaginal bleeding or contraindication to vaginal delivery, had received latency antibiotics, had had previous uterine surgery or were in spontaneous labor.	within 1 hour of Foley bulb placement. In the oxytocin alone group, oxytocin was started as soon as possible. In both groups, oxytocin was titrated according to institution's standard protocol in which the oxytocin infusion is started at 2 mU/ min. This dose is doubled every 30 minutes to a maximum dose of 16 mU/min (2-4-8-16) and then may be increased by 2 mU/min every 30 minutes to a maximum dose of 30 mU/min.		☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Mackeen A. et al Year Published: 2018 Location: USA Journal: *Journal of Obstetrics and Gynaecology*	To evaluate the use of a transcervical Foley catheter plus oxytocin infusion compared with oxytocin infusion alone for labor induction and cervical ripening in women 34 weeks of gestation or greater with prelabor rupture of membranes.	**Size:** 201 **Inclusion Criteria**: Fetus had to be cephalic and the mother English speaking with a plan for vaginal delivery. **Exclusion criteria**: Active labor and those with suspected intraamniotic infection, abruption or significant hemorrhage, latex allergy, greater than one prior cesarean delivery, any contraindication to vaginal delivery, or human immunodeficiency virus or acquired immunodeficiency syndrome.	**Type**: RCT **Intervention**: Participants were randomly allocated to a transcervical Foley catheter inflated to 30 cc with concurrent oxytocin infusion or oxytocin infusion alone. Oxytocin administration was standardized across sites. Oxytocin was started at a dose of 2 milliunits/min and increased by 2 milliunits/ min every 30 minutes to achieve an adequate contraction pattern, as per the institution's definition, to a maximum dose of 30 milliunits/min.	**Results:** Except for chorioamnionitis (8% in FC group vs 0% in control group P<0.01), there were no differences for other delivery outcomes, other infection morbidities, or any other outcome studied, including endometritis and neonatal sepsis and NICU admissions.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☒ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
El Khouly, N. I. (2017) "A prospective randomized trial comparing Foley catheter, oxytocin, and combination Foley catheter-oxytocin for labour induction with unfavourable cervix." Journal of obstetrics and gynaecology 37(3): 309-314.
Amorosa et al (2017) "A randomized trial of Foley Bulb for Labor Induction in Premature Rupture of Membranes in Nulliparas (FLIP)." American journal of obstetrics and gynecology 217(3): 360.e361-360.e367.

Mackeen et al (2018). "Foley Plus Oxytocin Compared With Oxytocin for Induction After Membrane Rupture: a Randomized Controlled Trial." Obstetrics and Gynecology 131(1): 4-11.

Foley Catheter plus oxytocin versus Foley Catheter

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus Foley catheter
Outcome: Vaginal delivery within 24 h and induction-to-delivery interval

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low RR=1.254 (1.09-1.43) P=0.0009
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Pettker C et al Year Published: 2008 Location: USA Journal: *Obstetrics and Gynecology*	To estimate whether adding oxytocin to transcervical Foley catheter preinduction cervical ripening improves induction success	**Size:** 200 **Inclusion Criteria**: Fetuses in cephalic presentation, at a gestational age greater than 23 weeks. **Exclusion criteria:** Any condition precluding vaginal delivery, estimated fetal weight more than 4,500 g, a previous attempt at ripening or induction during the pregnancy, clinically significant	**Type**: RCT **Intervention**: All women were given transcervical Foley catheter. A 20 F, 30-mL filled with 30 mL of normal saline. All patients received an intravenous line and basal intravenous fluids. To those randomly assigned to receive oxytocin, the infusion of oxytocin was initiated at 1 milliunit/minute and increased 1 milliunit/min every 15	**Results: There was no difference in the proportion of deliveries in 24 hours, our primary outcome, between Foley with oxytocin and Foley only (RR 1.08, 95% CI0.86 –1.35).** The number of patients needed to treat with oxytocin to provide benefit of delivery in less than 24 hours for one patient is 21**. There was also no difference between these two groups in proportions of vaginal**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		cervical or vaginal infection, chorioamnionitis, human immunodeficiency virus, hepatitis B or C, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage, or latex allergy.	minutes to a maximum of 10 milliunits/min and titrated to achieve acceptable contraction rates without tachysystole.	**deliveries in 24 hours (RR 1.04, 95% CI 0.76 –1.41).**	
Author: Schoen C. et al Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate whether adding oxytocin to preinduction cervical ripening with a Foley catheter increases the rate of delivery within 24 hours.	**Size:** 323 women **Inclusion Criteria**: Women scheduled for labor induction between 24 and 42 weeks of gestation, at least 18 years old; had a singleton, live, nonanomalous vertex fetus; an admission Bishop score less than 6 **Exclusion Criteria:** Women were not eligible if they had regular painful contractions, placenta or vasa previa, placenta abruption, antepartum bleeding of unknown etiology, nonreassuring fetal tracing, more than one prior cesarean delivery, prior classic cesarean delivery, prior T-shaped hysterotomy, or a history of myomectomy.	**Type**: RCT **Intervention**: Intracervical Foley catheter was placed and inflated with 60 mL normal saline. Depending on study site, a 16-French, 30-mL balloon, 75-mL Foley balloon, or Cook double-balloon catheter. Patients were randomized to either a Foley catheter with oxytocin infusion (started within 60 minutes of Foley catheter placement) or a Foley catheter followed by oxytocin. In the Foley and oxytocin group, the oxytocin infusion at both sites was started at 2 milliunits/min and increased by 2 milliunits/min after 30 minutes with a maximum of 40 milliunits/min as tolerated by the mother and fetus.	**Results: Among nulliparous women, the overall rate of delivery within 24 hours of Foley placement was 64% in the Foley with concurrent oxytocin compared with 43% in women who received a Foley catheter alone for cervical ripening followed by oxytocin (P=0.003).** **The RR for delivery within 24 hours was 1.51 (95% confidence interval [CI] 1.14–2.00).** **Multiparous women had an overall rate of delivery within 24 hours of 87% in the concurrent oxytocin group compared with 72% in women who received Foley followed by oxytocin (P=0.022; RR 1.22, 95% CI 1.02–1.45).**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Pettker et al (2008). "Transcervical Foley catheter with and without oxytocin for cervical ripening: a randomized controlled trial." Obstetrics and Gynecology 111(6): 1320-1326.
Schoenet al (2017) "Intracervical Foley Catheter With and Without Oxytocin for Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 129(6): 1046-1053.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus Foley catheter
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☐ Low ☒ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Pettker C et al Year Published: 2008 Location: USA Journal: *Obstetrics and Gynecology*	To estimate whether adding oxytocin to transcervical Foley catheter preinduction cervical ripening improves induction success	**Size:** 200 **Inclusion Criteria**: Fetuses in cephalic presentation, at a gestational age greater than 23 weeks. **Exclusion criteria:** Any condition precluding vaginal delivery, estimated fetal weight more than 4,500 g, a previous attempt at ripening or induction during the pregnancy, clinically significant cervical or vaginal infection, chorioamnionitis, human immunodeficiency virus, hepatitis B or C, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage, or latex allergy.	**Type**: RCT **Intervention**: All women were given transcervical Foley catheter. A 20 F, 30-mL filled with 30 mL of normal saline. All patients received an intravenous line and basal intravenous fluids. To those randomly assigned to receive oxytocin, the infusion of oxytocin was initiated at 1 milliunit/minute and increased 1 milliunit/min every 15 minutes to a maximum of 10 milliunits/min and titrated to achieve acceptable contraction rates without tachysystole.	**Results: There was no difference between these two groups in proportions of cesarean deliveries (RR 0.92, 95% CI 0.60 –1.43)**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Schoen C. et al Year Published: 2017	To evaluate whether adding oxytocin to preinduction cervical ripening with a Foley	**Size:** 323 women	**Type**: RCT	**Results:** There was no difference in mode of delivery	**Study Limitations:** ☐ None ***RCTs***

Location: USA Journal: *Obstetrics and Gynecology*	catheter increases the rate of delivery within 24 hours.	**Inclusion Criteria**: Women scheduled for labor induction between 24 and 42 weeks of gestation, at least 18 years old; had a singleton, live, nonanomalous vertex fetus; an admission Bishop score less than 6. **Exclusion Criteria:** Women were not eligible if they had regular painful contractions, placenta or vasa previa, placenta abruption, antepartum bleeding of unknown etiology, nonreassuring fetal tracing, more than one prior cesarean delivery, prior classic cesarean delivery, prior T-shaped hysterotomy, or a history of myomectomy.	**Intervention**: Intracervical Foley catheter was placed and inflated with 60 mL normal saline. Depending on study site, a 16-French, 30-mL balloon, 75-mL Foley balloon, or Cook double-balloon catheter. Patients were randomized to either a Foley catheter with oxytocin infusion (started within 60 minutes of Foley catheter placement) or a Foley catheter followed by oxytocin. In the Foley and oxytocin group, the oxytocin infusion at both sites was started at 2 milliunits/min and increased by 2 milliunits/min after 30 minutes with a maximum of 40 milliunits/min as tolerated by the mother and fetus.	between induction methods for women P=0.777 The most common indications for cesarean delivery were arrest of dilation (53%) in the concurrent Foley and oxytocin group and non-reassuring tracing in the Foley followed by oxytocin group (40%). Although overall indication for cesarean delivery was not different, cesarean delivery for arrest of dilation was more common in the Foley and oxytocin group for nulliparous women (53% compared with 23%, P=0.005).	☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Pettker et al (2008). "Transcervical Foley catheter with and without oxytocin for cervical ripening: a randomized controlled trial." Obstetrics and Gynecology 111(6): 1320-1326.
Schoenet al (2017) "Intracervical Foley Catheter With and Without Oxytocin for Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 129(6): 1046-1053.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus Foley catheter
Outcome: Contraction abnormalities

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if:

		☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Pettker C et al Year Published: 2008 Location: USA Journal: *Obstetrics and Gynecology*	To estimate whether adding oxytocin to transcervical Foley catheter preinduction cervical ripening improves induction success	**Size:** 200 **Inclusion Criteria**: Fetuses in cephalic presentation, at a gestational age greater than 23 weeks. **Exclusion criteria:** Any condition precluding vaginal delivery, estimated fetal weight more than 4,500 g, a previous attempt at ripening or induction during the pregnancy, clinically significant cervical or vaginal infection, chorioamnionitis, human immunodeficiency virus, hepatitis B or C, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage, or latex allergy.	**Type**: RCT **Intervention**: All women were given transcervical Foley catheter. A 20 F, 30-mL filled with 30 mL of normal saline. All patients received an intravenous line and basal intravenous fluids. To those randomly assigned to receive oxytocin, the infusion of oxytocin was initiated at 1 milliunit/minute and increased 1 milliunit/min every 15 minutes to a maximum of 10 milliunits/min and titrated to achieve acceptable contraction rates without tachysystole.	**Results: There was no difference between these two groups in uterine hyperstimulation (P=0.25)**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Schoen C. et al Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate whether adding oxytocin to pre-induction cervical ripening with a Foley catheter increases the rate of delivery within 24 hours.	**Size:** 323 women **Inclusion Criteria**: Women scheduled for labor induction between 24 and 42 weeks of gestation, at least 18 years old; had a singleton, live, non-anomalous vertex fetus; an admission Bishop score less than 6.	**Type**: RCT **Intervention**: Intracervical Foley catheter was placed and inflated with 60 mL normal saline. Depending on study site, a 16-French, 30-mL balloon, 75-mL Foley balloon, or Cook double-balloon catheter.	**Results:** There was no difference in rate of tachysystole P=0.339	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT

		Exclusion Criteria: Women were not eligible if they had regular painful contractions, placenta or vasa previa, placenta abruption, antepartum bleeding of unknown etiology, non-reassuring fetal tracing, more than one prior cesarean delivery, prior classic cesarean delivery, prior T-shaped hysterotomy, or a history of myomectomy.	Patients were randomized to either a Foley catheter with oxytocin infusion (started within 60 minutes of Foley catheter placement) or a Foley catheter followed by oxytocin. In the Foley and oxytocin group, the oxytocin infusion at both sites was started at 2 milliunits/min and increased by 2 milliunits/min after 30 minutes with a maximum of 40 milliunits/min as tolerated by the mother and fetus.		☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Pettker et al (2008). "Transcervical Foley catheter with and without oxytocin for cervical ripening: a randomized controlled trial." Obstetrics and Gynecology 111(6): 1320-1326.
Schoenet al (2017) "Intracervical Foley Catheter With and Without Oxytocin for Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 129(6): 1046-1053.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Foley catheter plus oxytocin versus Foley catheter
Outcome: Adverse neonatal events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Pettker C et al Year Published: 2008 Location: USA Journal: *Obstetrics and Gynecology*	To estimate whether adding oxytocin to transcervical Foley catheter preinduction cervical ripening improves induction success	**Size:** 200 **Inclusion Criteria**: Fetuses in cephalic presentation, at a gestational age greater than 23 weeks. **Exclusion criteria:** Any condition precluding vaginal delivery, estimated fetal weight more than 4,500 g, a previous attempt at ripening or induction during the pregnancy, clinically significant cervical or vaginal infection, chorioamnionitis, human immunodeficiency virus, hepatitis B or C, unexplained vaginal bleeding, low-lying placenta, abnormal cervical anatomy or cervical cerclage, or latex allergy.	**Type**: RCT **Intervention**: All women were given transcervical Foley catheter. A 20 F, 30-mL filled with 30 mL of normal saline. All patients received an intravenous line and basal intravenous fluids. To those randomly assigned to receive oxytocin, the infusion of oxytocin was initiated at 1 milliunit/minute and increased 1 milliunit/min every 15 minutes to a maximum of 10 milliunits/min and titrated to achieve acceptable contraction rates without tachysystole.	**Results: There was no difference between these two groups in chorio rates (7% in both groups P=0.98), or Apgar scores (P=-.50)**	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Schoen C. et al Year Published: 2017 Location: USA Journal: *Obstetrics and Gynecology*	To evaluate whether adding oxytocin to pre-induction cervical ripening with a Foley catheter increases the rate of delivery within 24 hours.	**Size:** 323 women **Inclusion Criteria**: Women scheduled for labor induction between 24 and 42 weeks of gestation, at least 18 years old; had a singleton, live, non-anomalous vertex fetus; an admission Bishop score less than 6. **Exclusion Criteria:** Women were not eligible if they had regular painful contractions, placenta or vasa previa, placenta abruption, antepartum bleeding of unknown etiology, non-reassuring fetal tracing, more than one prior cesarean delivery, prior classic cesarean	**Type**: RCT **Intervention**: Intracervical Foley catheter was placed and inflated with 60 mL normal saline. Depending on study site, a 16-French, 30-mL balloon, 75-mL Foley balloon, or Cook double-balloon catheter. Patients were randomized to either a Foley catheter with oxytocin infusion (started within 60 minutes of Foley catheter placement) or a Foley catheter followed by oxytocin. In the Foley and oxytocin group, the oxytocin infusion at both sites was started at 2 milliunits/min and increased by 2	**Results:** There was no difference in the rate of maternal or neonatal complications, including chorio (P=0.62), 5 min Apgar scores (P=0.612), or NICU admission (P=0.703)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		delivery, prior T-shaped hysterotomy, or a history of myomectomy.	milliunits/min after 30 minutes with a maximum of 40 milliunits/min as tolerated by the mother and fetus.		

References:
Pettker et al (2008). "Transcervical Foley catheter with and without oxytocin for cervical ripening: a randomized controlled trial." Obstetrics and Gynecology 111(6): 1320-1326.
Schoenet al (2017) "Intracervical Foley Catheter With and Without Oxytocin for Labor Induction: a Randomized Controlled Trial." Obstetrics and Gynecology 129(6): 1046-1053.

Cook Catheter plus oral misoprostol versus misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing Induction of labor
Modality: Cook Catheter plus oral misoprostol versus misoprostol alone
Outcome: Patient satisfaction

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Kehl et al Year Published: 2012 Location: Germany Journal: *European Journal of Obstetrics & Gynecology and*	The aim of this study was to investigate women's acceptance of and satisfaction with the induction of labour by administration of oral misoprostol and the	**Size:** 122 **Inclusion Criteria**: (Singleton pregnancy at term; unfavourable cervix – Bishop score< 8)	**Type:** RCT **Intervention**: The study included women who all participated in a randomized controlled trial to test different	**Results:** In comparison with the control group, women in the study group would consider their method in a subsequent pregnancy and	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit

Reproductive Biology	combination of that with a double balloon device.	**Exclusion criteria:** Structural or chromosomal malformation of the fetus, intrauterine fetal death, previous caesarean section	ways of inducing labour and were randomly assigned either to a 'study group' (with a combination of oral misoprostol and a double-balloon catheter) or a 'control group' (with oral misoprostol alone). After childbirth, a standardized questionnaire was given to all of the women for them to complete before discharge. In addition to assessing the induction of labour and their level of satisfaction with regard to delivery, the birth experience was objectively evaluated using the German language version of Salmon's Item List. Misoprostol was administered at a dose of 50 µg orally, with repeat doses 4 and 8 h later if the first stage of labour had not begun. Twenty-four hours after the start, 100 µg misoprostol orally was given with repeat doses 4 and 8 h later.	would recommend it to others more often (P = 0.040). The SILGer score showed a positive birth experience in both groups, with a significantly better score in the study group (87.7 ± 15.8 vs 79.3 ± 17.3 in the control group; P = 0.030). The multivariate analysis identified three factors influencing the SIL-Ger score: satisfaction with childbirth (P < 0.001), involvement in decision making after childbirth (P = 0.041), and the method of labour induction (combination of oral misoprostol and double-balloon catheter vs oral misoprostol alone: P = 0.005).	☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☒ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing Induction of labor
Modality: Cook Catheter plus oral misoprostol versus misoprostol alone
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies: ☒ High ☐ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kehl et al Year Published: 2015 Location: Germany Journal: *British Journal of Obstetrics & Gynecology and Reproductive Biology*	To evaluate the efficacy of inducing labour using a double-balloon catheter and oral misoprostol sequentially, in comparison with oral misoprostol alone.	**Size:** 326 **Inclusion Criteria**: Pregnant women with singleton pregnancies and a fetus in cephalic presentation at term (>259 days of gestation) with a clinical need for induction of labour. **Exclusion Criteria**: If they had a favourable cervix (Bishop score >8). premature rupture of the membranes, previous caesarean section, structural or chromosomal fetal malformation, intrauterine fetal death, placenta praevia, or any other contraindication to vaginal delivery.	**Type**: RCT **Intervention**: Women were randomly to sequential use of double-balloon catheter and oral misoprostol (study group) or oral misoprostol alone (control group). In the study group, the double-balloon catheter was used the first day before starting oral misoprostol the second day. Main outcome measures The primary outcome measure was the induction-to-delivery interval, and a further outcome parameter was delivery within 48 hours. Misoprostol was administered at a dose of 50 µg orally the next morning, with repeat doses 4 and 8 h later if the first stage of labour had not begun. Twenty-four hours after the start, 100 µg misoprostol orally was given with repeat doses 4 and 8 h later.	**Results:** The median times for induction of labour were 32.4 hours in the study group and 22.5 hours in the control group. This difference was significant (P = 0.004; Table 2). This significant difference was not seen when evaluating according to parity. Vaginal delivery within 48 hours did not differ between the study and the control groups (79.5 versus 84.9%; P = 0.29).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☒ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Kehl S. et al. (2015) "Sequential use of double-balloon catheter and oral misoprostol versus oral misoprostol alone for induction of labour at term (CRBplus trial): a multicentre, open-label randomised controlled trial." BJOG: An International Journal of Obstetrics & Gynaecology 122(1): 129-136.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing Induction of labor
Modality: Cook Catheter plus oral misoprostol versus misoprostol alone
Outcome: Adverse Neonatal Outcomes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:
☒ High
☐ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Kehl et al Year Published: 2015 Location: Germany Journal: *British Journal of Obstetrics & Gynecology and Reproductive Biology*	To evaluate the efficacy of inducing labour using a double-balloon catheter and oral misoprostol sequentially, in comparison with oral misoprostol alone.	**Size:** 326 **Inclusion Criteria**: Pregnant women with singleton pregnancies and a fetus in cephalic presentation at term (>259 days of gestation) with a clinical need for induction of labour. **Exclusion Criteria**: If they had a favourable cervix (Bishop score >8). premature rupture of the membranes, previous caesarean section, structural or chromosomal fetal malformation, intrauterine fetal	**Type**: RCT **Intervention**: Women were randomly to sequential use of double-balloon catheter and oral misoprostol (study group) or oral misoprostol alone (control group). In the study group, the double-balloon catheter was used the first day before starting oral misoprostol the second day. Main outcome measures The primary outcome measure was the induction-to-delivery interval, and a further outcome parameter was delivery within 48 hours.	**Results:** There were more Apgar scores <7 at 5 minutes in the study group than in the control group (eight versus one; P=0.04) This difference was not seen when assessing only nulliparous (P = 0.06) or parous women (P = 0.05).	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☒ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		death, placenta praevia, or any other contraindication to vaginal delivery.	Misoprostol was administered at a dose of 50 µg orally the next morning, with repeat doses 4 and 8 h later if the first stage of labour had not begun. Twenty-four hours after the start, 100 µg misoprostol orally was given with repeat doses 4 and 8 h later.		

References:

Kehl S. et al. (2015) "Sequential use of double-balloon catheter and oral misoprostol versus oral misoprostol alone for induction of labour at term (CRBplus trial): a multicentre, open-label randomised controlled trial." BJOG: An International Journal of Obstetrics & Gynaecology 122(1): 129-136.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Cook Catheter plus oral misoprostol versus misoprostol alone
Outcome: Cesarean section

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kehl et al Year Published: 2015 Location: Germany	To evaluate the efficacy of inducing labour using a double-balloon catheter and oral misoprostol sequentially, in	**Size:** 326 **Inclusion Criteria**: Pregnant women with singleton	**Type**: RCT **Intervention**: Women were randomly to sequential use of	**Results:** No difference in rate of cesarean section (P=0.10)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding

Journal: *British Journal of Obstetrics & Gynecology and Reproductive Biology*	comparison with oral misoprostol alone.	pregnancies and a fetus in cephalic presentation at term (>259 days of gestation) with a clinical need for induction of labour. **Exclusion Criteria**: If they had a favourable cervix (Bishop score >8). premature rupture of the membranes, previous caesarean section, structural or chromosomal fetal malformation, intrauterine fetal death, placenta praevia, or any other contraindication to vaginal delivery.	double-balloon catheter and oral misoprostol (study group) or oral misoprostol alone (control group). In the study group, the double-balloon catheter was used the first day before starting oral misoprostol the second day. Main outcome measures The primary outcome measure was the induction-to-delivery interval, and a further outcome parameter was delivery within 48 hours. Misoprostol was administered at a dose of 50 µg orally the next morning, with repeat doses 4 and 8 h later if the first stage of labour had not begun. Twenty-four hours after the start, 100 µg misoprostol orally was given with repeat doses 4 and 8 h later.		☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☒ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Kehl S. et al. (2015) "Sequential use of double-balloon catheter and oral misoprostol versus oral misoprostol alone for induction of labour at term (CRBplus trial): a multicentre, open-label randomised controlled trial." BJOG: An International Journal of Obstetrics & Gynaecology 122(1): 129-136.

Question 7: What are the effects (harms and benefits) when cervical ripening is carried out in different settings (outpatient, inpatient)?

Outpatient Oral Misoprostol

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Outpatient oral misoprostol
Outcome: Time from drug administration to delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☐ Low ☒ Very Low					
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Gaffaney C. et al Year Published: 2009 Location: USA Journal: *American Journal of Perinatology*	To evaluate the effectiveness of oral misoprostol for outpatient cervical ripening and labor induction in prolonged pregnancies.	**Size:** 96 **Inclusion Criteria**: Women at 40 to 42 weeks' gestation with well-dated pregnancies, singleton gestations, Bishop scores less than 6, vertex presentations, and intact membranes	**Type:** RCT **Intervention**: Subjects were assigned to either the oral misoprostol group or the oral placebo group. They were treated daily for up to 3 days. Those subjects in the misoprostol group received an oral capsule containing 100µg of misoprostol, and subjects in the placebo group received an oral capsule containing a placebo preparation. Maternal and fetal monitoring occurred for 2 hours following drug administration and subjects were asked to return in 24 hours to be evaluated for a repeat dosage. During the 3 days of study observation, labor induction was not allowed.	**Results: First dose to delivery (min) 2774±2555 (oral miso) and** **5050±3141 (placebo)** **P <0.001**	**Study Limitations:** ☐ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Kipikasa Jh. et al Year Published: 2005 Location: USA Journal: *International journal of gynaecology and obstetrics*	To compare the effectiveness of orally administered misoprostol, at doses of 50 and 25 µg for outpatient cervical ripening, for the prevention of postdate pregnancy.	**Size:** 49 **Inclusion Criteria**: (1) gestational age of at least 40 weeks (2) an unfavorable cervix (Bishop score <5) with the absence of active labor and no evidence of fetal heart rate (FHR) abnormalities; (3) singleton pregnancy (cephalic presentation) and no contraindication to vaginal delivery; (4) no contraindications to the use of prostaglandins.	**Type:** RCT **Intervention:** Subjects were assigned randomly to receive oral misoprostol 50 or 25 µg every 3 days for a maximum of three doses. Maternal and fetal monitoring occurred for 2 hours following drug administration and the subjects were discharged with instructions to return in 3 days if spontaneous labor failed to occur or if they experienced diminished fetal kick counts or contractions occurring one every 5 min.	**Results:** **25ug group: 3.9± 0.7 days** **50 ug group: 2.4+ 0.3 days (P=0.0001)**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Gaffaney Ca (2009). "Outpatient oral misoprostol for prolonged pregnancies: a pilot investigation." American Journal of Perinatology 26(9): 673-677.
Kipikasa Jh, A. (2005) "Use of misoprostol on an outpatient basis for postdate pregnancy." International journal of gynaecology and obstetrics 88(2): 108-111.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Outpatient oral misoprostol
Outcome: Delivery within 24 hours

Quality (certainty) of evidence for: (outcome)		
☐ High ☐ Moderate ☒ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Gaffaney C. et al Year Published: 2009 Location: USA Journal: *American Journal of Perinatology*	To evaluate the effectiveness of oral misoprostol for outpatient cervical ripening and labor induction in prolonged pregnancies.	**Size:** 96 **Inclusion Criteria**: Women at 40 to 42 weeks' gestation with well-dated pregnancies, singleton gestations, Bishop scores less than 6, vertex presentations, and intact membranes.	**Type:** RCT **Intervention**: Subjects were assigned to either the oral misoprostol group or the oral placebo group. They were treated daily for up to 3 days. Those subjects in the misoprostol group received an oral capsule containing 100µg of misoprostol, and subjects in the placebo group received an oral capsule containing a placebo preparation. Maternal and fetal monitoring occurred for 2 hours following drug administration and subjects were asked to return in 24 hours to be evaluated for a repeat dosage. During the 3 days of study observation, labor induction was not allowed.	**Results: 19/43 in miso group and 6/44 in control P=0.024**	**Study Limitations:** ☐ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Gaffaney Ca (2009). "Outpatient oral misoprostol for prolonged pregnancies: a pilot investigation." American Journal of Perinatology 26(9): 673-677.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Outpatient oral misoprostol
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Lower Quality Rating if:** ☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Gaffaney C. et al Year Published: 2009 Location: USA Journal: *American Journal of Perinatology*	To evaluate the effectiveness of oral misoprostol for outpatient cervical ripening and labor induction in prolonged pregnancies.	**Size:** 96 **Inclusion Criteria**: Women at 40 to 42 weeks' gestation with well-dated pregnancies, singleton gestations, Bishop scores less than 6, vertex presentations, and intact membranes	**Type:** RCT **Intervention**: Subjects were assigned to either the oral misoprostol group or the oral placebo group. They were treated daily for up to 3 days. Those subjects in the misoprostol group received an oral capsule containing 100µg of misoprostol, and subjects in the placebo group received an oral capsule containing a placebo preparation. Maternal and fetal monitoring occurred for 2 hours following drug administration and subjects were asked to return in 24 hours to be evaluated for a repeat dosage. During the 3 days of study observation, labor induction was not allowed.	**Results: 8/43 in miso group and 13/44 in control, not significant**	**Study Limitations:** ☐ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Kipikasa Jh. et al Year Published: 2005 Location: USA Journal: *International journal of gynaecology and obstetrics*	To compare the effectiveness of orally administered misoprostol, at doses of 50 and 25 µg for outpatient cervical ripening, for the prevention of postdate pregnancy.	**Size:** 49 **Inclusion Criteria**: (1) gestational age of at least 40 weeks (2) an unfavorable cervix (Bishop score <5) with	**Type:** RCT **Intervention:** Subjects were assigned randomly to receive oral misoprostol 50 or 25 µg every 3 days for a maximum of three doses. Maternal and fetal	**Results:** **25ug group: 5 cesareans** **50 ug group: 6 csections** **(P=0.99)**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment

		the absence of active labor and no evidence of fetal heart rate (FHR) abnormalities; (3) singleton pregnancy (cephalic presentation) and no contraindication to vaginal delivery; (4) no contraindications to the use of prostaglandins.	monitoring occurred for 2 hours following drug administration and the subjects were discharged with instructions to return in 3 days if spontaneous labor failed to occur or if they experienced diminished fetal kick counts or contractions occurring one every 5 min.		☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Gaffaney Ca (2009). "Outpatient oral misoprostol for prolonged pregnancies: a pilot investigation." American Journal of Perinatology 26(9): 673-677.

Kipikasa Jh, A. (2005) "Use of misoprostol on an outpatient basis for postdate pregnancy." International journal of gynaecology and obstetrics 88(2): 108-111

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Outpatient oral misoprostol
Outcome: Adverse neonatal outcomes

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Gaffaney C. et al Year Published: 2009 Location: USA	To evaluate the effectiveness of oral misoprostol for outpatient cervical ripening and labor induction in prolonged pregnancies.	**Size:** 96 **Inclusion Criteria**: Women at 40 to 42 weeks' gestation with well-dated pregnancies,	**Type:** RCT **Intervention**: Subjects were assigned to either the oral misoprostol group or the oral	**Results: No infants had at an Apgar <7 at 5 min, 1 infant in each arm was admitted to the NICO and 8 cases of chorio in**	**Study Limitations:** ☐ None ***RCTs*** ☐ Lack of blinding

Journal: *American Journal of Perinatology*		singleton gestations, Bishop scores less than 6, vertex presentations, and intact membranes	placebo group. They were treated daily for up to 3 days. Those subjects in the misoprostol group received an oral capsule containing 100µg of misoprostol, and subjects in the placebo group received an oral capsule containing a placebo preparation. Maternal and fetal monitoring occurred for 2 hours following drug administration and subjects were asked to return in 24 hours to be evaluated for a repeat dosage. During the 3 days of study observation, labor induction was not allowed.	**the miso arm and 9 cases in the control arm (NS)**	☐ Lack of allocation concealment ☒ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Kipikasa Jh. et al Year Published: 2005 Location: USA Journal: *International journal of gynaecology and obstetrics*	To compare the effectiveness of orally administered misoprostol, at doses of 50 and 25 µg for outpatient cervical ripening, for the prevention of postdate pregnancy.	**Size:** 49 **Inclusion Criteria**: (1) gestational age of at least 40 weeks (2) an unfavorable cervix (Bishop score <5) with the absence of active labor and no evidence of fetal heart rate (FHR) abnormalities; (3) singleton pregnancy (cephalic presentation) and no contraindication to vaginal delivery; (4) no contraindications to the use of prostaglandins.	**Type:** RCT **Intervention:** Subjects were assigned randomly to receive oral misoprostol 50 or 25 µg every 3 days for a maximum of three doses. Maternal and fetal monitoring occurred for 2 hours following drug administration and the subjects were discharged with instructions to return in 3 days if spontaneous labor failed to occur or if they experienced diminished fetal kick counts or contractions occurring one every 5 min.	**Results: No maternal or fetal adverse events were noted. No neonatal adverse events were related to the trial Surrogate markers of adverse perinatal morbidity, including length of stay and NICU admissions, were similar between the two groups.**	**Study Limitations:** ☒ None ***RCTs*** ☐ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Gaffaney Ca (2009). "Outpatient oral misoprostol for prolonged pregnancies: a pilot investigation." American Journal of Perinatology 26(9): 673-677.

Kipikasa Jh, A. (2005) "Use of misoprostol on an outpatient basis for postdate pregnancy." International journal of gynaecology and obstetrics 88(2): 108-111

Inpatient versus Outpatient

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient versus outpatient cervical priming
Outcome: Patient preference

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☒ High
☐ Medium
☐ Low

Lower Quality Rating if:
☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Howard K. et al Year Published: 2014 Location: Australia Journal: *BMC Health Services Research*	The aim of this study was to assess the preferences of women for cervical priming for induction of labour in an outpatient or inpatient setting.	**Size:** 362 **Inclusion Criteria**: Women scheduled for an induction of labour for social reasons or prolonged pregnancy and who had a healthy term, singleton pregnancy with no medical conditions that would necessitate continuous maternal or fetal monitoring after cervical priming.	**Type:** Discrete choice experiment (DCE) alongside a RCT **Intervention**: The OPRA trial was an RCT to compare the effectiveness of: (1) inpatient priming for induction of labour, and (2) outpatient priming with maternal/fetal assessment and CTG monitoring, followed by discharge home, then reassessment the following morning. Trial participants recruited in the second half of the trial received the DCE survey as part of their routine 7-week post-natal questionnaire. In addition, the investigators	**Results: Women were significantly (OR 1.8, 95% CI 1.4 to 2.1, P< 0.0001) more likely to choose the outpatient care over basic inpatient care when they were able to return home.** Women were willing to accept an extra 1.4 trips to hospital (2.4 trips total) and a total travel time of 73.3 minutes to be able to return to their own home while waiting for the priming to work. Preferences for outpatient priming increased when women could return to their own home (compared to other offsite accommodation),	**Study Limitations:** ☒ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☐ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

			included volunteers from the two hospital's antenatal clinics.	and decreased with more trips to hospital and longer travel time.	
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 1 trial (300 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery. 2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.	**Type:** SR	**Results:** During the induction period, compared with women in the inpatient group, women in the outpatient group rated their satisfaction higher (mean difference (MD) 0.90; 95% CI 0.34 to 1.46) and were more likely to report high levels of satisfaction with their care (defined as the numbers of women rating satisfaction higher than seven on a nine-point scale, 55.7% versus 39.3%, RR 1.42; 95% CI 1.11 to 1.81)	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Howard K, G.. (2014). "Women's preferences for inpatient and outpatient priming for labour induction: a discrete choice experiment." BMC Health Services Research 14(330).
Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

Outpatient Vaginal Misoprostol versus cervical assessment

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Outpatient vaginal misoprostol versus cervical assessment
Outcome: Interval-to-delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Oboro., et al. Year Published: 2005 Location: Nigeria Journal: *Acta Obstetricia et Gynecologica*	To determine whether outpatient administration of intravaginal misoprostol safely decreases the interval to delivery in postdate pregnancies.	**Size:** 78 **Inclusion Criteria**: Singleton gestation in cephalic presentation and a Bishop score of >8 at 40 weeks gestation, and a lack of current indication for induction of labor. **Exclusion Criteria:** Ruptured membranes, unexplained vaginal bleeding, a prior uterine incision, a nonreactive non-stress test and an estimated fetal weight of >4500 g.	**Type:** RCT **Intervention**: Group 1 received 25 mg of misoprostol tablet intravaginally, Group 2 had a gentle vaginal examination only with a Bishop score assigned. Subjects were monitored continuously for 1 hr after intervention. If the woman had regular contractions after 1 hr, she was sent to labor and delivery for evaluation; otherwise she was discharged home.	**Results:** Misoprostol was associated with significant decrease in mean time to delivery(4.5±4.1 versus 7.4±5.2days; P=0.008), earlier gestational age at delivery (40.6±0.6 versus 41.4 ± 0.05 weeks; P < 0.001) and shorter duration of active labor (6.1 ± 4.0 versus 8.2 ± 5.3 h; P = 0.028)	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:

Oboro Vo, T.(2005) "Outpatient misoprostol cervical ripening without subsequent induction of labor to prevent post-term pregnancy." Acta Obstetricia et Gynecologica Scandinavica 84(7): 628-631.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor

Modality: Outpatient vaginal misoprostol versus cervical assessment

Outcome: Adverse Neonatal Outcomes

Quality (certainty) of evidence for: (outcome)

☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Oboro. et al. Year Published: 2005 Location: Nigeria Journal: *Acta Obstetricia et Gynecologica*	To determine whether outpatient administration of intravaginal misoprostol safely decreases the interval to delivery in postdate pregnancies.	**Size:** 78 **Inclusion Criteria**: Singleton gestation in cephalic presentation and a Bishop score of >8 at 40 weeks gestation, and a lack of current indication for induction of labor. **Exclusion Criteria:** Ruptured membranes, unexplained vaginal bleeding, a prior uterine incision, a nonreactive non-stress test and an estimated fetal weight of >4500 g.	**Type:** RCT **Intervention**: Group 1 received 25 mg of misoprostol tablet intravaginally, Group 2 had a gentle vaginal examination only with a Bishop score assigned. Subjects were monitored continuously for 1 hr after intervention. If the woman had regular contractions after 1 hr, she was sent to labor and delivery for evaluation; otherwise she was discharged home.	**Results:** Overall, complications were low, and similar in both groups. There were no significant differences in maternal and neonatal length of stay, infectious morbidity (two misoprostol, three controls), number of neonatal intensive care unit (one in each arm). There were no cases of uterine hyperstimulation in either arm.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Oboro Vo, T.(2005) "Outpatient misoprostol cervical ripening without subsequent induction of labor to prevent post-term pregnancy." Acta Obstetricia et Gynecologica Scandinavica 84(7): 628-631

Inpatient versus Outpatient Foley Catheter

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient Foley catheter versus outpatient Foley catheter
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☐ Low ☒ Very Low					
Risk of Bias across studies: ☒ High ☐ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Policiano C., et al. Year Published: 2017 Location: Portugal Journal: *European journal of obstetrics, gynecology, and reproductive biology*	To compare clinical efficacy between outpatient and inpatient cervix priming with Foley catheter (FC).	**Size:** 130 **Inclusion Criteria**: Women with a single fetus in cephalic presentation. Bishop score (BS)< 6, gestational age > 41 weeks or medical indication for induction of labor (high-risk pregnancy group) **Exclusion Criteria:** Fetus in noncephalic presentation, an indication for elective cesarean delivery, spontaneous labor, hydramnios, nonreassuring cardiotocogram, multiple pregnancy, rupture of membranes. active vaginal bleeding, indication for prophylaxis of Streptococcus group B infection, HIV infection, cervical injury or previous cesarean section with recurrent indication.	**Type:** RCT **Intervention**: Patients were randomized to outpatient or inpatient priming with Foley catheter.Primary outcome was Bishop score change between outpatient and inpatient groups. Secondary comparisons included: delivery route and catheter application-to-delivery time.	**Results:** Average Bishop score change was not statistically different between the inpatient and outpatient groups (3.4 vs 2.9; P=0.37).5 cases in OP group (8%) and 1 case in IP group (2%) remained unchanged after catheter removal (P=0.21). Average total inpatient LOS was shorter in the OP group than IP group (23.4 h vs 35.5 h, P< 0.01). Gestational age and parity were inversely related with the length of induction and hospital stay.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 1 trial (111 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery. 2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.	**Type:** SR	**Results:** There was no evidence of a difference between groups for the total induction time. OP: 1473 ±458.4 minutes IP: 1471 ±978.5 minutes	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Policiano C, P. et al. (2017). "Outpatient versus inpatient cervix priming with Foley catheter: a randomized trial." European journal of obstetrics, gynecology, and reproductive biology 210: 1-6
Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Inpatient Foley catheter versus outpatient Foley catheter
Outcome: Cesarean delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

		☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Policiano C., et al. Year Published: 2017 Location: Portugal Journal: *European journal of obstetrics, gynecology, and reproductive biology*	To compare clinical efficacy between outpatient and inpatient cervix priming with Foley catheter (FC).	**Size:** 130 **Inclusion Criteria**: Women with a single fetus in cephalic presentation. Bishop score (BS)< 6, gestational age > 41 weeks or medical indication for induction of labor (high-risk pregnancy group) **Exclusion Criteria:** Fetus in noncephalic presentation, an indication for elective cesarean delivery, spontaneous labor, hydramnios, nonreassuring cardiotocogram, multiple pregnancy, rupture of membranes. active vaginal bleeding, indication for prophylaxis of Streptococcus group B infection, HIV infection, cervical injury or previous cesarean section with recurrent indication.	**Type:** RCT **Intervention**: Patients were randomized to outpatient or inpatient priming with Foley catheter. Primary outcome was Bishop score change between outpatient and inpatient groups. Secondary comparisons included: delivery route and catheter application-to-delivery time.	**Results:** Vaginal birth rate (47 /65 (72%) OP vs 40/65 (62%) IP) was similar between groups. OP group had a statistically significant lower rate of cesarean deliveries for failed induction of labor than the IP group [2/65 (3%) vs 11/65 (17%), P=0.02), which remained after controlling for maternal age, parity, BMI, gestational age and indication of induction of labor (OR 0.15; 95%(1 0.03-0.83 P=0.03). Higher BMI was independently associated with higher failed labor inductions.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 1 trial (111 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are	**Type:** SR	**Results:** There was no evidence of a difference between groups for the total number of women delivering by cesarean section. OP :18/61 IP: 22/50	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised

		compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery. 2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.			☐ Inappropriate pooled analysis

References:
Policiano C, P. et al. (2017). "Outpatient versus inpatient cervix priming with Foley catheter: a randomized trial." European journal of obstetrics, gynecology, and reproductive biology 210: 1-6
Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient Foley catheter versus outpatient Foley catheter
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)		
☐ High ☐ Moderate ☐ Low ☒ Very Low		
Risk of Bias across studies: ☒ High ☐ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Policiano C., et al. Year Published: 2017 Location: Portugal Journal: *European journal of obstetrics, gynecology, and reproductive biology*	To compare clinical efficacy between outpatient and inpatient cervix priming with Foley catheter (FC).	**Size:** 130 **Inclusion Criteria**: Women with a single fetus in cephalic presentation. Bishop score (BS)< 6, gestational age > 41 weeks or medical indication for induction of labor (high-risk pregnancy group) **Exclusion Criteria:** Fetus in noncephalic presentation, an indication for elective cesarean delivery, spontaneous labor, hydramnios, nonreassuring cardiotocogram, multiple pregnancy, rupture of membranes. active vaginal bleeding, indication for prophylaxis of Streptococcus group B infection, HIV infection, cervical injury or previous cesarean section with recurrent indication.	**Type:** RCT **Intervention**: Patients were randomized to outpatient or inpatient priming with Foley catheter. Primary outcome was Bishop score change between outpatient and inpatient groups. Secondary comparisons included: delivery route and catheter application-to-delivery time.	**Results:** Mean change of VAS pain (difference between the score before and after FC) did not differ between groups (1.21 for OP vs 1.23 for IP, P = 0.82). Three cases of chorioamnionitis were recorded in each group. Within these, each group had a newborn admitted to the neonatal intensive care unit, both with Apgar score under 7, respiratory distress, with no additional morbidity. No maternal or neonatal mortality was recorded.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 1 trial (111 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery.	**Type:** SR	**Results:** There was no evidence of a difference between groups for the number of babies admitted to the NICU OP :1/61 IP: 4/50	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.			

References:

Policiano C, P. et al. (2017). "Outpatient versus inpatient cervix priming with Foley catheter: a randomized trial." European journal of obstetrics, gynecology, and reproductive biology 210: 1-6

Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

Inpatient versus outpatient vaginal PGE2

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient versus outpatient vaginal PGE2
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 2 trials (1028 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished	**Type:** SR	**Results:** There were no differences between women managed as outpatients versus inpatients for most review outcomes. There was no evidence of a difference	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question

		randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery. 2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.		between the likelihood of women requiring instrumental delivery in either setting (risk ratio (RR) 1.29; 95% confidence interval (CI) 0.79 to 2.13). The overall length of hospital stay was similar in the two groups.	☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:
Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient versus outpatient vaginal PGE2
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

		☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*			
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 2 trials (1028 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery. 2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.	**Type:** SR	**Results:** Serious neonatal morbidity/ death was reported along with development of hypoxemic ischemic encephalopathy in one study. Eleven serious outcomes were noted in the inpatient group in comparison to 16 in the outpatient group (7.4% versus 5.2%, risk ratio (RR) 1.42; 95% confidence interval (CI) 0.68 to 2.99	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

Inpatient versus Outpatient PGE2 insert

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient versus outpatient PGE2 insert
Outcome: Efficacy

Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 1 trial (300 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery. 2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.	**Type:** SR	**Results:** There was no evidence of a difference between the groups (receiving PGE2 managed at home or as inpatients (22.8% versus 28.7%, RR 0.80; 95% CI 0.54 to 1.17) for vaginal delivery not achieved within 24 hours. The median time from induction to delivery was reported as being similar in the two groups: 21.4 hours in the outpatient group and 20.7 hours for the inpatients.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

References:

Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Inpatient versus outpatient PGE2 insert
Outcome: Adverse events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Kelly, A. J., et al. Year Published: 2015 Location: UK Journal: *Cochrane Database of Systematic Reviews*	To assess the effects on outcomes for mothers and babies of induction of labour for women managed as outpatients versus inpatients.	**Size:** 1 trial (300 women) **Inclusion Criteria and Outcomes assessed**: All published and unpublished randomised trials, in which inpatient and outpatient methods of cervical ripening or induction of labour are compared. The trials include some form of random allocation to either group; and they report one or more of the pre-stated outcomes: 1. Failure to achieve spontaneous vaginal delivery.	**Type:** SR	**Results:** There was a relatively high numbers of women with uterine hyperstimulation (with or without fetal heart rate changes), but there were no differences between groups. (15 cases in each group) Outcomes for babies were similar in the two groups. There was no evidence of a difference between groups for admission to neonatal intensive care (11 cases in OP and 8 cases in IP) or non-reassuring fetal heart rate	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		2. Additional induction agents required. 3. Length of hospital stay. 4. Use of emergency services. 5. Mother not satisfied. 6. Caregiver not satisfied. 7. Serious neonatal morbidity or perinatal death.		patterns (22 cases in OP and 15 cases in IP).	

References:
Kelly, A. J., et al. (2013). "Outpatient versus inpatient induction of labour for improving birth outcomes." Cochrane Database of Systematic Reviews(11): CD007372.

In patients undergoing induction of labor:

Question 8: What are the patient's views and experiences of induction of labor?

Patient Satisfaction

BODY OF EVIDENCE APPRAISAL TABLE FOR: Population: Women undergoing Induction of Labor Outcome: Patient Satisfaction					
Quality (certainty) of evidence for: (outcome) ☐High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☒ High ☐ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Calik, K. Y., et al Year Published: 2018 Location: Turkey Journal: *BMC Pregnancy and Childbirth*	To investigate the effect of frequent interventions during labor on maternal satisfaction and to provide evidence-based recommendations for labor management decisions.	**Size:** 351 women **Inclusion Criteria**: women aged between 19 and 45 who gave birth normally and at term, had healthy fetuses, no chronic diseases, who did not experience complications during pregnancy, childbirth and the postpartum period, and who were admitted to the delivery ward in the latent stage of labor.	**Type:** Descriptive Study **Intervention**: The data were collected using three questionnaires: a survey form containing sociodemographic and obstetric characteristics, the Scale for Measuring Maternal Satisfaction in Vaginal Birth, and an intervention observation form. High satisfaction scores cut off ≥150	**Results:** oxytocin induction (elective: 67.3%); 95.4% (**335 women had induction**) Overall level of maternal satisfaction among the women in study was 139.59 ± 29.02, which is low (cut-off scale score 150.5). **Women who were induced were statistically significantly more likely to have lower satisfaction rates (P=0.0005) Median Score 106 (94.2-138)**	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
Author: Hildingsson, I., et al Year Published: 2011 Location: Sweden Journal: *Australian and New Zealand Journal of Obstetrics and Gynaecology*	To explore the prevalence of induction in a Swedish region and reasons for labour induction. A second aim was to compare the experience of spontaneous labour and birth for women to the experience of induction of labour. A third aim was to explore the difference in labour in relation to the length of pregnancy.	**Size:** 936 women **Inclusion Criteria**: Only Swedish-speaking women with a normal ultrasound examination were approached.	**Type:** Longitudinal Study **Intervention**: A one-year cohort of 936 women was included in a longitudinal Swedish survey in which data were collected by questionnaires, two months after birth. The main outcome was a set of data recording women's birth experiences. The longitudinal survey comprised four questionnaires; in mid-pregnancy (gestation week 18–19), late pregnancy (gestational week 32–34), two months and one year after childbirth.	**Results:** **Labour induction was associated with a less positive birth experience (OR 1.5; 95% CI 1.0–2.3),** and women who were induced were more likely to totally agree that they were frightened that the baby would be damaged during birth (OR 2.1; 95% CI 1.2–3.9)	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

Author: Shetty, A., et al. Year Published: 2005 Location: UK Journal: *European Journal of Obstetrics & Gynecology and Reproductive Biology*	To evaluate the understanding and expectations of women undergoing labour induction, to assess their actual experience of the process and to compare their satisfaction with labour to those labouring spontaneously.	**Size:** 900 women **Inclusion Criteria**: singleton pregnancy at or over 37 weeks gestation, with an indication for induction of labour and a modified Bishop's cervical score of less than 8 that necessitated the use of prostaglandin (PG) cervical ripening. **Exclusion Criteria**: previous caesarean section, multiple pregnancy, induction after prolonged rupture of membranes and significant maternal or fetal concerns that necessitated the induction being carried out under continuous monitoring.	**Type:** questionnaire-based study **Intervention**: The induction group were requested to complete a questionnaire prior to the start of their induction process and another questionnaire post-delivery. The post-delivery questionnaire contained two sections, one pertaining to issues to do with the induction and the second with the actual labour process. The spontaneously laboring group was requested to complete a questionnaire post-delivery, which only contained the section pertaining to the actual labour process. The main outcome measures were satisfaction with labour, perception of pain and length of labour between the induced and spontaneous labour groups, and issues that the women might wish changed about their induction.	**Results:** **In the induction group, 34.7% were not satisfied with the information they received about the induction prior to the procedure and 27.2% expected to deliver within 12 h of the administration of the inducing agent.** Post-induction, 40% of the women felt the most important aspect they would like to change about their induction were they to have another one, would be the speed of the induction, 13.6% felt they might wish to take the inducing agent orally, 7% to have fewer vaginal examinations and 9% to have fewer complications. Among the women who returned questionnaires, 26.3% had a caesarean delivery in the induction group and 21.4% in the spontaneous labour group. **Significantly more women were satisfied with their labour in the spontaneous labour group 79.5% versus 70.4%, RR 0.89, 95% CI 0.8–0.96, P = 0.006).**	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
Calik, K. Y., et al. (2018). "First do no harm - interventions during labor and maternal satisfaction: a descriptive cross-sectional study." 1(1): 415.
Hildingsson, I., et al. (2011). "Women's experiences of induction of labour--findings from a Swedish regional study." 1(2): 151-157.
Shetty, A., et al. (2005). "Women's perceptions, expectations and satisfaction with induced labour--a questionnaire-based study." 1(1): 56-61.

Patient Experience

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing Induction of Labor
Outcome: Patient Experience

Quality (certainty) of evidence for: (outcome) ☐High ☐ Moderate ☐ Low ☒ Very Low					
Risk of Bias across studies: ☒ High ☐ Medium ☐ Low		**Lower Quality Rating if:** ☒ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Coates, R., et al. Year Published: 2019 Location: UK Journal: Midwifery	To explore and synthesise evidence of women's experiences of induction of labour (IoL).	**Size:** 11 studies, 141 women **Inclusion Criteria**: Women of any parity or mode of birth, high and low risk pregnancy. Who have experienced induction of labor of any mechanical or pharmacological method. Women's experiences, views or accounts of the induction of labour. Inpatient, outpatient, hospital, birth centre, community, home, any country with routine access to hospital care Experiences and perceptions of the induct ion of labour method and process and support from healthcare practitioners **Exclusion Criteria**: Women who experienced induction for fetal death	**Type:** SR **Intervention**: The studies were evaluated based on four themes (1) Making decisions; (2) Women's ownership of the IOL process; (3) Social needs; (4) Place and the IOL process.	**Results:** Process: Some women felt under-prepared for the process of IoL. In 5 studies, women were not prepared for the length of the process, believing that the baby would be born the same day or soon after administration of the first pessary, or having no idea how long it would take Feeling of Control: Women felt lined up, part of a checklist, unaware of the parts of the hospital they were moved around according to their stage in the process. Feelings of control over birth contrasted between women who felt they had more control by knowing when and where labour was scheduled and what options were available,	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		Complementary therapeutic methods of induction of Labour. Experience of healthcare practitioners. Focus solely on prospective views on induction of labour. Studies in countries without routine access to hospital care. Focus on safety, effectiveness. or technical aspects only of induction of labour.		and those who felt that being told this information relinquished control to medical professionals. Being at home provided a sense of control for women in the outpatient loL studies, partly due to the freedom to move around. Although women were encouraged to mobilize in the hospital, they felt inhibited by ward rules, and disturbed by the movements of other women. Social Needs: Some women felt forgotten or alone in the hospital, but felt "embarrassed" to "pester" the midwives who were perceived as being rushed. The sense of being surrounded by others, yet still isolated was apparent in the hospital induction setting. Presence of partners or family fostered a sense of security, whilst their absence was reported as prompting anxiety, fear and isolation. Place: Some women experienced the hospital as a place to be endured that was noisy, and busy, with a lack of privacy, and too many lights, machines and strangers to allow sleep, rest and concentration on their experience . Hospitals were associated with delays, bad food, boredom, restricted freedom to move and to be with significant others. Ward	

				rules did not favor women, as significant others had to leave them, sometimes distressed, when visiting hours ended and women were unsettled by being moved from one location to another within the hospital according to their stage of induction.	
Author: Henderson, J. and M. Redshaw Year Published: 2013 Location: UK Journal: *ACTA Obstetricia et Gynecologica*	To investigate women's experience of induction of labor.	**Size:** 5333 women, 20% of whom were induced **Inclusion Criteria**: A random sample of 10, 000 women was selected by the Office for National Statistics from birth registrations in England. **Exclusion Criteria**: Mothers whose babies had died and those aged less than 16 years were excluded from the sample	**Type:** Mixed Methods Study **Intervention**: This study involved secondary analysis of data from questionnaires relating to care in childbirth. Women's experience of induction of labor was compared with that of women who had spontaneous labor by analysis of responses to structured survey questions. Responses to open questions relating to induction were analyzed qualitatively. Main outcome measures. Satisfaction with care, mode of delivery, experience of induction of labor.	**Results:** Prior to labor, women who were induced had more worries generally, and specifically regarding interventions. During labor those who were induced were significantly less likely to be able to move around and to find a comfortable position, and had more midwives caring for them associated with a slight increase in length of labor. Women who were induced selected more negative terms to describe the staff caring for them during labor, and generally rated staff communication, respect and kindness less highly than women who had spontaneous labor. Once induction was started the issues raised were associated with delivery ward being full and staff shortages. Pain was a major concern, arising from contractions, vaginal examinations and insertion of the gel or pessary. Women complained of a lack	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

				of pain relief generally and also pain associated with being monitored in an uncomfortable position. Another theme that emerged was that induction takes time with many changes of staff and sometimes a marked lack of continuity of care	
Author: Hildingsson, I., et al Year Published: 2011 Location: Sweden Journal: *Australian and New Zealand Journal of Obstetrics and Gynaecology*	To explore the prevalence of induction in a Swedish region and reasons for labour induction. A second aim was to compare the experience of spontaneous labour and birth for women to the experience of induction of labour. A third aim was to explore the difference in labour in relation to the length of pregnancy.	**Size:** 936 women **Inclusion Criteria**: Only Swedish-speaking women with a normal ultrasound examination were approached.	**Type:** Longitudinal Study **Intervention**: A one-year cohort of 936 women was included in a longitudinal Swedish survey in which data were collected by questionnaires, two months after birth. The main outcome was a set of data recording women's birth experiences. The longitudinal survey comprised four questionnaires; in mid-pregnancy (gestation week 18–19), late pregnancy (gestational week 32–34), two months and one year after childbirth.	**Results:** Labour induction was associated with a less positive birth experience (OR 1.5; 95% CI 1.0–2.3), and women who were induced were more likely to totally agree that they were frightened that the baby would be damaged during birth (OR 2.1; 95% CI 1.2–3.9)	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
Author: Moore, J. E., et al. Year Published: 2014 Location: USA Journal: *Birth*	To identify factors that influence inductions from the perspective of women.	**Size:** 29 **Inclusion Criteria**: English-speaking, primiparous women, 21 years of age or older, scheduled for an IOL between December 2011 and February 2012, and between 34 and 41 weeks' gestation. **Exclusion Criteria**: Multiparous women	**Type:** Pre- and Post-Survey Study **Intervention**: Women were interviewed pre-induction and post-induction. Analysis of the interviews was conducted using constant comparison to identify codes, categories, and themes. Through this process the complex intersection between women, their clinician, and the application of evidence-based care in clinical practice was explored	**Results:** Five major themes from the pre-induction interview were identified; safety of baby, women's trust in their clinician, relief of discomfort and/or anxiety, diminish potential or actual risk, and lack of informed decision making. Five major themes were identified from the post-induction interview; lack of informed decision making, induction as part of a	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

				checklist, women's trust in their clinician, happy with induction, and opportunities to improve the experience (shared decision making, childbirth education)	
Author: Shetty, A., et al. Year Published: 2005 Location: UK Journal: *European Journal of Obstetrics & Gynecology and Reproductive Biology*	To evaluate the understanding and expectations of women undergoing labour induction, to assess their actual experience of the process and to compare their satisfaction with labour to those labouring spontaneously.	**Size:** 900 women **Inclusion Criteria**: singleton pregnancy at or over 37 weeks gestation, with an indication for induction of labour and a modified Bishop's cervical score of less than 8 that necessitated the use of prostaglandin (PG) cervical ripening. **Exclusion Criteria**: previous caesarean section, multiple pregnancy, induction after prolonged rupture of membranes and significant maternal or fetal concerns that necessitated the induction being carried out under continuous monitoring.	**Type:** questionnaire-based study **Intervention**: The induction group were requested to complete a questionnaire prior to the start of their induction process and another questionnaire post-delivery. The post-delivery questionnaire contained two sections, one pertaining to issues to do with the induction and the second with the actual labour process. The spontaneously laboring group was requested to complete a questionnaire post-delivery, which only contained the section pertaining to the actual labour process. The main outcome measures were satisfaction with labour, perception of pain and length of labour between the induced and spontaneous labour groups, and issues that the women might wish changed about their induction.	**Results:** In the induction group, 34.7% were not satisfied with the information they received about the induction prior to the procedure and 27.2% expected to deliver within 12 h of the administration of the inducing agent. Post-induction, 40% of the women felt the most important aspect they would like to change about their induction were they to have another one, would be the speed of the induction, 13.6% felt they might wish to take the inducing agent orally, 7% to have fewer vaginal examinations and 9% to have fewer complications. Among the women who returned questionnaires, 26.3% had a caesarean delivery in the induction group and 21.4% in the spontaneous labour group. Significantly more women were satisfied with their labour in the spontaneous labour group 79.5% versus 70.4%, RR 0.89, 95% CI 0.8–0.96, P = 0.006).	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:
Coates, R., et al. (2019). "Women's experiences of induction of labour: Qualitative systematic review and thematic synthesis. [Review]." 1: 17-28.
Henderson, J. and M. Redshaw (2013). "Women's experience of induction of labor: a mixed methods study." 1(10): 1159-1167.

Hildingsson, I., et al. (2011). "Women's experiences of induction of labour--findings from a Swedish regional study." 1(2): 151-157.
Moore, J. E., et al. (2014). "Moving toward patient-centered care: Women's decisions, perceptions, and experiences of the induction of labor process." 1(2): 138-146.
Schwarz, C., et al. (2016). "Women's perceptions of induction of labour outcomes: Results of an online-survey in Germany." 1: 3-10.
Shetty, A., et al. (2005). "Women's perceptions, expectations and satisfaction with induced labour--a questionnaire-based study." 1(1): 56-61.

Question 9: What are the clinical indicators for induction of labor?

BODY OF EVIDENCE APPRAISAL TABLE FOR: Mode of Delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Ezebialu IU, Year Published: 2015 Location: Korea, Spain Journal: Cochrane Library	To compare Bishop score with any other method for assessing pre-induction cervical ripening in women admitted for induction of labor.	**Size:** 2 RCTs, N=234 **Inclusion Criteria**: All RCTs comparing Bishop score with any other methods of pre-induction cervical assessment in women admitted for induction of labor. **Exclusion Criteria**: Quasi-RCTs, cross-over designs, non vertex presentation, uterine scars other than prior low transverse caesarean scar, multiple gestation and premature rupture of membranes.	**Type:** Systematic Review of RCTs **Intervention**: Bishop score **Comparator**: transvaginal ultrasonography.	**Results:** Vaginal birth: RR 1.05 (0.92 to 1.2) Cesarean: RR 0.82 (0.5 to 1.35)	**Study Limitations:** ***Systematic Review*** ☒ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference s at baseline

Eleje, et al 2018 Nigeria J. Obstet. Gynaecol. Res.	To test whether Premaquick biomarkers were superior to modified Bishop score for preinduction cervical assessment at term.	**Size: 151** **Inclusion Criteria**: nulliparous, cephalic presenting singleton pregnancies. **Exclusion Criteria**: previous uterine scars, multiparity and premature rupture of membranes.	**Type:** RCT **Intervention**: Premaquick® **Comparator**: modified Bishop score..	**Results:** Vaginal delivery: 0.92 (0.63–1.35) Cesarean delivery (CD) for failed induction: 1.09 (0.64–1.85) CD for failed cervical ripening: 1.11 (0.61–2.04) CD for fetal heart rate abnormalities: 0.99 (0.49–2.02)	**Study Limitations: *RCTs*** ☐ None ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference at baseline

References:

BODY OF EVIDENCE APPRAISAL TABLE FOR: Duration of stages of labor

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Low Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome**	**Design Limitations**
Author: Ezebialu IU, Year Published: 2015 Location: Korea, Spain Journal: Cochrane Library	To compare Bishop score with any other method for assessing pre-induction cervical ripening in women admitted for induction of labor.	**Size:** 2 RCTs, N=234 **Inclusion Criteria**: All RCTs comparing Bishop score with any other methods of pre-induction cervical assessment in women admitted for induction of labor. **Exclusion Criteria**: Quasi-RCTs, cross-over designs, non	**Type:** Systematic Review of RCTs **Intervention**: Bishop score **Comparator**: transvaginal ultrasonography.	**Results:** **Median induction-delivery interval (data not combinable)** Bartha 2005: 11.2 h (interquartile range 7.8 to 15.9) vs 9.5 hours (5.6 to 14.7); P=NS Park 2011: 10.3 h (95% CI 7.0 to 13.5) vs 10.9 h (95% CI 9.4 to 12.3); P=NS	**Study Limitations:** ***Systematic Review*** ☒ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit

		vertex presentation, uterine scars other than prior low transverse caesarean scar, multiple gestation and premature rupture of membranes.			☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference s at baseline
Eleje, et al 2018 Nigeria J. Obstet. Gynaecol. Res.	To test whether Premaquick biomarkers were superior to modified Bishop score for preinduction cervical assessment at term.	**Size: 151** **Inclusion Criteria**: nulliparous, cephalic presenting singleton pregnancies. **Exclusion Criteria**: previous uterine scars, multiparity and premature rupture of membranes.	**Type:** RCT **Intervention**: Premaquick® **Comparator**: modified Bishop score.	**Results:** **Transition to labor**: 44.7% vs 22.7%, RR 1.59 (1.17–2.15) **Interval from start of induction to beginning of active phase of labor** 9.2h vs 9.4 h; P=0.084 **Interval from start of induction to any type of delivery**: 14.2 h vs 15.1 h ; P=0.53	**Study Limitations: *RCTs*** ☐ None ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference at baseline

BODY OF EVIDENCE APPRAISAL TABLE FOR: NICU Admission

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low		**Low Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Ezebialu IU, Year Published: 2015 Location: Korea, Spain	To compare Bishop score with any other method for assessing pre-induction cervical ripening	**Size:** 2 RCTs, N=234	**Type:** Systematic Review of RCTs	**Results:** NICU Admission: RR 1.67 (0.41 to 6.83)	**Study Limitations:** ***Systematic Review*** ☒ None

Journal: Cochrane Library	in women admitted for induction of labor.	**Inclusion Criteria**: All RCTs comparing Bishop score with any other methods of pre-induction cervical assessment in women admitted for induction of labor. **Exclusion Criteria**: Quasi-RCTs, cross-over designs, non vertex presentation, uterine scars other than prior low transverse caesarean scar, multiple gestation and premature rupture of membranes.	**Intervention**: Bishop score **Comparator**: transvaginal ultrasonography.		***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference s at baseline
Eleje, et al 2018 Nigeria J. Obstet. Gynaecol. Res.	To test whether Premaquick biomarkers were superior to modified Bishop score for preinduction cervical assessment at term.	**Size: 151** **Inclusion Criteria**: nulliparous, cephalic presenting singleton pregnancies. **Exclusion Criteria**: previous uterine scars, multiparity and premature rupture of membranes.	**Type:** RCT **Intervention**: Premaquick® **Comparator**: modified Bishop score.	**Results:** NICU Admission: 0.58 (0.22–1.52)	**Study Limitations: *RCTs*** ☐ None ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference at baseline

The GRADE criteria were used to evaluate the quality of evidence presented in research articles reviewed during the development of this guideline. For more detailed information, see Appendix A.

Question 10: What is the optimal route and dose of nutrition and hydration during induction of labor?

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women in labor
Modality: intravenous fluid rate of 250 vs. 125 mL/h
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies: ☐ High ☐ Medium ☒ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☒ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Ehsanipoor, R. M., et al. Year Published: 2017 Location: USA Journal: *Acta Obstet Gynecol Scand*	To determine whether an intravenous fluid rate of 250 vs. 125 mL/h is associated with a difference in cesarean delivery rate.	**Size:** 7 trials including 1215 nulliparous **Inclusion Criteria**: low-risk nulliparous women in spontaneous labor at ≥36 weeks with singleton pregnancies **Exclusion Criteria**: Studies including multiparous women or women whose labor was induced were excluded.	**Type:** Systematic Review **Intervention**: all randomized controlled trials comparing intravenous fluid rates of 250 vs. 125 mL/h in nulliparous women in spontaneous labor at term with singleton pregnancies at >=36 weeks. Studies were included regardless of the type of intravenous fluids used and regardless of whether oral intake was restricted during labor. The primary outcome was the incidence of cesarean delivery.	**Results:** **Women who received intravenous fluids at 250 mL/h had a significantly lower incidence of cesarean delivery for any indication** (12.5 vs. 18.1%; RR 0.70, 95% CI 0.53-0.92) In the 1 study using normal saline with dextrose water, the incidence of cesarean delivery was 4.9 vs. 13.4% in the 250 vs. 125 mL/h group, respectively (RR 0.36, 95% CI 0.13–0.95). For the 5 studies using lactated Ringers, an intravenous fluid rate of 250 mL/h was associated with a lower incidence of cesarean delivery (13.4 vs. 18.3%; RR 0.73, 95% CI 0.55–0.98; 959 participants; I2 = 0%) compared with 125 mL/h. For the 5 studies with restricted oral intake the incidence of cesarean delivery for any indication was reduced with 250 mL/h (13.3 vs. 19.2%; RR 0.67,	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

				95% CI 0.50–0.90; 961 participants; I2 = 0%) compared with the 125 mL/h policy. **In the two studies with unrestricted oral intake, the incidence of cesarean delivery for any indication was not significantly different (9.5 vs. 10.9%; RR 0.87, 95% CI 0.42–1.81; 254 participants; I2 = 0%).**	

Ehsanipoor, R. M., et al. (2017). "Intravenous fluid rate for reduction of cesarean delivery rate in nulliparous women: a systematic review and meta-analysis. [Review]." 1(7): 804-811.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women in labor
Modality: intravenous fluid rate of 250 vs. 125 mL/h
Outcome: Adverse Events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☐ Medium ☒ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☒ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

Author: Ehsanipoor, R. M., et al. Year Published: 2017 Location: USA Journal: *Acta Obstet Gynecol Scand*	To determine whether an intravenous fluid rate of 250 vs. 125 mL/h is associated with a difference in cesarean delivery rate.	**Size:** 7 trials including 1215 nulliparous **Inclusion Criteria**: low-risk nulliparous women in spontaneous labor at ≥36 weeks with singleton pregnancies **Exclusion Criteria**: Studies including multiparous women or women whose labor was induced were excluded.	**Type:** Systematic Review **Intervention**: all randomized controlled trials comparing intravenous fluid rates of 250 vs. 125 mL/h in nulliparous women in spontaneous labor at term with singleton pregnancies at >=36 weeks. Studies were included regardless of the type of intravenous fluids used and regardless of whether oral intake was restricted during labor. The primary outcome was the incidence of cesarean delivery.	**Results:** There were no maternal or perinatal deaths and one woman, in the 125 mL/h group, developed pulmonary edema.	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Ehsanipoor, R. M., et al. (2017). "Intravenous fluid rate for reduction of cesarean delivery rate in nulliparous women: a systematic review and meta-analysis. [Review]." 1(7): 804-811.

Question 11. What are the effects (harms and benefits) of staffing models during induction of labor?

BODY OF EVIDENCE APPRAISAL TABLE FOR: Mode of Delivery (Cesarean Delivery)

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☒ High ☐ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations

BODY OF EVIDENCE APPRAISAL TABLE FOR: Endometritis

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
X☐ Very Low

1:1	*n*	Primary cesarean	OR[a] (95% CI)
76–100	14,644	4,530 (30.9%)	1
51–75	24,704	7,382 (29.9%)	0.95 (0.91–0.99)
26–50	13,753	3,928 (28.6%)	0.89 (0.85–0.94)
0–25	48,676	15,649 (32.1%)	1.06 (1.02–1.10)
Total	101,777	31,489 (30.9%)	

Risk of Bias across studies:
X☐ High
☐ Medium
☐ Low

Low Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

x☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Clark, et al Year Published: 2013 Location: USA Journal	To examine the relationship between nurse-to-patient staffing ratios and perinatal outcomes in women receiving oxytocin during labor	**Size:** 101,777women **Inclusion Criteria**: Women receiving oxytocin for IOL during 2010.	**Type:** Retrospective cohort **Intervention**: IOL with Oxytocin	**Results: No clear difference found.** 1:1 / *n* / Primary cesarean / OR[a] (95% CI) 76–100 / 14,644 / 4,530 (30.9%) / 1 51–75 / 24,704 / 7,382 (29.9%) / 0.95 (0.91–0.99) 26–50 / 13,753 / 3,928 (28.6%) / 0.89 (0.85–0.94) 0–25 / 48,676 / 15,649 (32.1%) / 1.06 (1.02–1.10) Total / 101,777 / 31,489 (30.9%)	**Study Limitations:** ☐ Failure to adequately control confounding ☒ Non-Randomized Studies ☒ Inadequately developed and apply appropriate eligibility criteria ☒ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
		Exclusion Criteria: None listed.	**Comparator**: Frequency of 1:1 nursing staffing: 0 to 25%, 26 to 50%, 51 to 75%, or >75%		

References:

Clark, S. L., et al. (2014). "The clinical and economic impact of nurse to patient staffing ratios in women receiving intrapartum oxytocin." 1(2): 119-124.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women in labor
Modality: Continous support
Outcome: Vaginal Delivery

Quality (certainty) of evidence for: (outcome) ☐High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Year Published: 2017 Location: World Health Organization, Geneva, Switzerland Journal: *Cochrane Database of Systematic Reviews*	To assess the effects, on women and their babies, of continuous, one-to-one intrapartum support compared with usual care, in any settin	**Size:** 27 trials; 15,858 women **Inclusion Criteria:** All published and unpublished randomised controlled trials, cluster-randomised trials comparing continuous support during labour with usual care. Quasi-randomised and cross-over designs were not eligible for inclusion.	**Type:** Systematic Review	**Results:** Women allocated to continuous support were more likely to have a spontaneous vaginal birth (average RR 1.08, 95% confidence interval (CI) 1.04 to 1.12; 21 trials, 14,369 women; low-quality evidence) and less likely to report negative ratings of or feelings about their childbirth experience (average RR 0.69, 95% CI 0.59 to 0.79; 11 trials, 11,133 women; low-quality evidence) and to use any intrapartum analgesia (average RR 0.90, 95% CI 0.84 to 0.96; 15 trials, 12,433 women). In addition, their labours were shorter (MD -0.69 hours, 95% CI -1.04 to -0.34; 13 trials, 5429 women; low-quality evidence), they were less likely to have a caesarean birth (average RR 0.75, 95% CI 0.64 to 0.88; 24 trials, 15,347 women; low-	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis No study clearly blinded women and personnel. Studies were inconsistent and there was a lack of imprecision of effect estimates

				quality evidence) or instrumental vaginal birth (RR 0.90, 95% CI 0.85 to 0.96; 19 trials, 14,118 women), regional analgesia (average RR 0.93, 95% CI 0.88 to 0.99; 9 trials, 11,444 women), or a baby with a low five-minute Apgar score (RR 0.62, 95% CI 0.46 to 0.85; 14 trials, 12,615 women).	
Author: Hodnett, E.D., et al. Year Published: 2011 Location: Toronto, Canada Journal: *Cochrane Database of Systematic Reviews*	To assess the effects of continuous, one-to-one intrapartum support compared with usual care	**Size:** 21 trials, 15061 women **Inclusion Criteria**: All controlled trials comparing continuous labour support by eithera familiar or unfamiliar person (with or without healthcare profes-sional qualifications) with usual care, in which there was randomallocation to treatment and control groups, were considered for in-clusion in the Review.	**Type:** Systematic Review	**Results:** Women were more likely to have a spontaneous vaginal birth (RR 1.08, 95%CI 1.04 to 1.12) and less likely to have intrapartum analgesia (RR 0.90, 95% CI 0.84 to 0.97) or to report dissatisfaction (RR 0.69, 95% CI 0.59to 0.79). In addition their labours were shorter (mean difference -0.58 hours, 95% CI -0.86 to -0.30), they were less likely to have a caesarean(RR 0.79, 95% CI 0.67 to 0.92) or instrumental vaginal birth (fixed-effect, RR 0.90, 95% CI 0.84 to 0.96), regional analgesia (RR 0.93, 95%CI 0.88 to 0.99), or a baby with a low 5-minute Apgar score (fixed-effect, RR 0.70, 95% CI 0.50 to 0.96).	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Bohren, M. A., et al. (2017). "Continuous support for women during childbirth." Cochrane Database of Systematic Reviews(7).
Hodnett, E. D., et al. (2011). "Continuous support for women during childbirth." Cochrane Database of Systematic Reviews(2).

The GRADE criteria were used to evaluate the quality of evidence presented in research articles reviewed during the development of this guideline. For more detailed information, see Appendix A.

Question 13: What are the harms and effects of early (at induction) and late (active labor) administration of epidural analgesia?

The American Society of Anesthesiologists *updated in 2015 their Practice Guidelines for Obstetric Anesthesia with the following recommendations:*

Timing of neuraxial analgesia and outcomes of labor

13. Provide patients in early labor (*i.e.*, < 5 cm dilation) the option of neuraxial analgesia when this service is available
14. Offer neuraxial analgesia on an individualized basis
15. Do not withhold neuraxial analgesia on the basis of achieving an arbitrary cervical dilation

Table 4. Meta-analysis Summary

Evidence Linkages	N	Fisher Chi-square	*P* Value	Weighted Stouffer Z_c	*P* Value	Effect Size	Mantel–Haenszel OR	CI	Heterogeneity Significance	Heterogeneity Effect Size
Early *vs.* late epidural anesthetics[44–48]										
Spontaneous delivery	5						1.03	0.94–1.13		0.838
Instrumented delivery	5						1.90	0.79–1.03		0.944
Cesarean delivery	5						1.03	0.93–1.15		0.941

The 2014 UK's National Institute of Health and Care Excellence (NICE) guideline on Intrapartum care for healthy women and babies stated:

Timing of regional analgesia

- If a woman in labour asks for regional analgesia, comply with her request. This includes women in severe pain in the latent first stage of labour.

The 2008 UK's National Institute of Health and Care Excellence (NICE) guideline on Induction of labor stated:

- Early, rather than late, administration of epidural analgesia does not prolong labour or increase the incidence of instrumental or caesarean section births. There is no benefit in waiting until labour has started to give epidural.

Outcome: Mode of delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Sng, B. L., et al Year Published: 2014 Location: Multinational Journal: Cochrane Library	This systematic review aimed to summarize the effectiveness and safety of early initiation versus late initiation of epidural in women. We considered the obstetric and fetal outcomes relevant to women and side effects of the treatments, including risk of caesarean section, instrumental birth and time to birth.	**Size:** 9 RCTs of 15,752 women. **Inclusion Criteria**: randomized controlled trials involving women undergoing epidural labor analgesia that compared early initiation versus late initiation of epidural labor analgesia. Studies included only nulliparous women. **Exclusion Criteria**: quasi-randomized trials or cross-over trials; women in preterm labor, with multiple pregnancy or	**Type:** SR of RCTs **Intervention**: Epidural analgesia. **Comparator**: Early versus late initiation of epidural analgesia (including combined spinal-epidural). Early initiation is typically defined as cervical dilatation of less than 4 cm to 5 cm, as defined by the authors of the trials. Late initiation is typically defined as cervical dilatation of 4 cm to 5 cm or	**Results:** There was no clinically meaningful difference in risk of caesarean section with early initiation versus late initiation of epidural analgesia for labor RR 1.02; 95% CI 0.96 to 1.08 (9 RCTs). There was no clinically meaningful difference in risk of instrumental birth with early initiation and late initiation (MD 0.01; 95%	**Study Limitations:** ☒ None (for SR) ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment

		malposition of fetus including breech presentations. Studies that compared epidural versus non-epidural or no analgesia in labor are the subject of another review (Anim-Somuah 2011).	more, as defined by the authors of the trials.	CI -0.01 to 0.03, 4 studies).	☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Outcome: Duration of Stages of Labor

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Sng, B. L., et al Year Published: 2014 Location: Multinational Journal: Cochrane Library	This systematic review aimed to summarize the effectiveness and safety of early initiation versus late initiation of epidural in women. We considered the obstetric and fetal outcomes relevant to women and side effects of the treatments, including risk of caesarean section, instrumental birth and time to birth.	**Size:** 9 RCTs of 15,752 women. **Inclusion Criteria**: randomized controlled trials involving women undergoing epidural labor analgesia that compared early initiation versus late initiation of epidural labor analgesia. Studies included only nulliparous women. **Exclusion Criteria**: As above	**Type:** SR of RCTs **Intervention**: Epidural analgesia. **Comparator**: Early versus late initiation of epidural analgesia (including combined spinal-epidural). Early initiation is typically defined as cervical dilatation of less than 4 cm to 5 cm, as defined by the authors of the trials. Late initiation is	**Results:** The duration of second stage of labor showed no clinically meaningful difference between early initiation and late initiation of epidural analgesia (mean difference (MD) -3.22 minutes; 95%CI -6.71 to 0.27, 8 studies). There was significant heterogeneity in the duration of first stage of labor and the data were not pooled.	**Study Limitations:** ☒ None (for SR) ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome)

			typically defined as cervical dilatation of 4 cm to 5 cm or more, as defined by the authors of the trials.		☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Outcome: Duration of Stages of Labor: 1st stage

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☐ Low
☒ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Sng, B. L., et al Year Published: 2014 Location: Multinational Journal: Cochrane Library	This systematic review aimed to summarize the effectiveness and safety of early initiation versus late initiation of epidural in women. We considered the obstetric and fetal outcomes relevant to women and side effects of the treatments, including risk of caesarean section, instrumental birth and time to birth.	**Size:** 9 RCTs of 15,752 women. **Inclusion Criteria**: randomized controlled trials involving women undergoing epidural labor analgesia that compared early initiation versus late initiation of epidural labor analgesia. Studies included only nulliparous women. **Exclusion Criteria**: As above..	**Type:** SR of RCTs **Intervention**: Epidural analgesia. **Comparator**: Early versus late initiation of epidural analgesia (including combined spinal-epidural). Early initiation is typically defined as cervical dilatation of less than 4 cm to 5 cm, as defined by the authors of the trials. Late initiation is typically defined as cervical dilatation of 4 cm to 5 cm or more, as defined by the authors of the trials.	**Results:** There was significant heterogeneity in the duration of first stage of labor and the data were not pooled.	**Study Limitations:** ☒ None (for SR) ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Outcome: Duration of Stages of Labor: 2nd stage

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Sng, B. L., et al Year Published: 2014 Location: Multinational Journal: Cochrane Library	This systematic review aimed to summarize the effectiveness and safety of early initiation versus late initiation of epidural in women. We considered the obstetric and fetal outcomes relevant to women and side effects of the treatments, including risk of caesarean section, instrumental birth and time to birth.	**Size:** 9 RCTs of 15,752 women. **Inclusion Criteria**: randomized controlled trials involving women undergoing epidural labor analgesia that compared early initiation versus late initiation of epidural labor analgesia. Studies included only nulliparous women. **Exclusion Criteria**: quasi-randomized trials or cross-over trials; women in preterm labor, with multiple pregnancy or malposition of fetus including breech presentations. Studies that compared epidural versus non-epidural or no analgesia in labor are the subject of another review (Anim-Somuah 2011).	**Type:** SR of RCTs **Intervention**: Epidural analgesia. **Comparator**: Early versus late initiation of epidural analgesia (including combined spinal-epidural). Early initiation is typically defined as cervical dilatation of less than 4 cm to 5 cm, as defined by the authors of the trials. Late initiation is typically defined as cervical dilatation of 4 cm to 5 cm or more, as defined by the authors of the trials.	**Results:** The duration of second stage of labor showed no clinically meaningful difference between early initiation and late initiation of epidural analgesia (mean difference (MD) -3.22 minutes; 95%CI -6.71 to 0.27, 8 studies).	**Study Limitations:** ☒ None (for SR) ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

References:
Sng, B. L., et al. (2014). "Early versus late initiation of epidural analgesia for labour. [Review]." **1**(10): Cd007238.

Question 14: When is a cesarean delivery for failed induction indicated?

BODY OF EVIDENCE APPRAISAL TABLE FOR: Length of Stages of Labor					
Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Low Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

APEX Study Author Grobman, et al Year Published: 2018 Location: USa Journal: Obstetrics	To determine the frequency of adverse maternal and perinatal outcomes as a function of the duration of the latent phase among nulliparous women undergoing labor induction.	**Size:** 10,677 women **Inclusion Criteria**: Overall cohort was women of at least 23 weeks gestation with a live fetus delivering at 25 US hospitals from 2008 through 2011; for this analysis: nulliparous; had a singleton, cephalic gestation at >/= 37 weeks; and underwent labor induction. **Exclusion Criteria**: If data required to calculate the length of the latent phase was not available in the chart (eg, time at ROM, time at oxytocin initiation, time at least 5 cm was reached)	**Type:** Cohort study **Intervention**: Induction of labor **Comparator**: None The association of the duration of the latent phase of labor and obstetric outcomes was analyzed using regression.	Results:96.4% of women reached the active phase by 15 hours post oxytocin and ROM.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
Author: Rouse et al Year Published: 2011 Location: USS Journal: Obstetrics & Gynecology	To evaluate maternal and perinatal outcomes in women undergoing labor induction with an unfavorable cervix according to duration of oxytocin administration in the latent phase of labor after ruptured membranes.	**Size:** 1,347 women **Inclusion Criteria**: nulliparas at or beyond 36 weeks of gestation undergoing induction with a cervix of 2 cm or less dilated and less than completely effaced; subgroup of those who received oxytocin, regardless of membrane status **Exclusion Criteria**: maternal fever immediately before randomization, infections such as active genital herpes, HIV), hepatitis B or C, and chronic conditions such as diabetes mellitus, heart disease treated	**Type:** Secondary data analysis of an RCT on fetal pulse oximetry. **Intervention**: Induction of labor **Comparator**: None	Results: 69.7% completed the latent phase 6 hours after oxytocin and ROM. 5% remained in the latent phase after 12 hours.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		with medication, and renal disease.			**Non-Randomized Studies (post- hoc analysis of RCT data)** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

References:

1. Grobman, W. A., et al. (2018). "Defining failed induction of labor." **1**(1): 122.e121-122.e128.
2. Rouse Dj, W. S. J. B. S. L. V. M. W. S. C. Y. R. S. M. C. S. N. G. W. A. S. "Failed labor induction: toward an objective diagnosis." Obstetrics and Gynecology **117**(2 PART 1): 267-272.

BODY OF EVIDENCE APPRAISAL TABLE FOR: Mode of Delivery

Quality (certainty) of evidence for: (outcome)
☐High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:	**Low Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

APEX Study Author Grobman, et al Year Published: 2018 Location: USa Journal: Obstetrics	To determine the frequency of adverse maternal and perinatal outcomes as a function of the duration of the latent phase among nulliparous women undergoing labor induction.	**Size:** 10,677 women **Inclusion Criteria**: Overall cohort was women of at least 23 weeks gestation with a live fetus delivering at 25 US hospitals from 2008 through 2011; for this analysis: nulliparous; had a singleton, cephalic gestation at >/= 37 weeks; and underwent labor induction. **Exclusion Criteria**: As above	**Type:** Cohort study **Intervention**: Induction of labor **Comparator**: None The association of the duration of the latent phase of labor and obstetric outcomes was analyzed using regression.	Results: The chance of a cesarean delivery significantly increased according to the duration of the latent phase (P < .001); >40% of those with a latent phase > 18 hours had a vaginal delivery. The authors conclude that CD should not be undertaken prior to 15 hours after oxytocin and ROM.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
Author: Rouse et al Year Published: 2011 Location: USS Journal: Obstetrics & Gynecology	To evaluate maternal and perinatal outcomes in women undergoing labor induction with an unfavorable cervix according to duration of oxytocin administration in the latent phase of labor after ruptured membranes.	**Size:** 1,347 women **Inclusion Criteria**: nulliparas at or beyond 36 weeks of gestation undergoing induction with a cervix of 2 cm or less dilated and less than completely effaced; subgroup of those who received oxytocin, regardless of membrane status **Exclusion Criteria**: As above	**Type:** Secondary data analysis of an RCT on fetal pulse oximetry. **Intervention**: Induction of labor **Comparator**: None	Results: The vaginal delivery rate was 63.2%. 5% remained in the latent phase after 12 hours; the longer the latent phase, the lower the vaginal delivery rate. 39.4% of those in the latent phase after 12 hours of oxytocin and ROM delivered vaginally. The authors conclude that CD should not be undertaken prior to 12 hours after oxytocin and ROM.	**Study Limitations:** ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline **Non-Randomized Studies (post- hoc analysis of RCT data)** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

BODY OF EVIDENCE APPRAISAL TABLE FOR: Chorioamnionitis

Quality (certainty) of evidence for: (outcome) ☐High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Low Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

APEX Study Author Grobman, et al Year Published: 2018 Location: USa Journal: Obstetrics	To determine the frequency of adverse maternal and perinatal outcomes as a function of the duration of the latent phase among nulliparous women undergoing labor induction.	**Size:** 10,677 women **Inclusion Criteria**: Overall cohort was women of at least 23 weeks gestation with a live fetus delivering at 25 US hospitals from 2008 through 2011; for this analysis: nulliparous; had a singleton, cephalic gestation at >/= 37 weeks; and underwent labor induction. **Exclusion Criteria**: If data required to calculate the length of the latent phase was not available in the chart (eg, time at ROM, time at oxytocin initiation, time at least 5 cm was reached)	**Type:** Cohort study **Intervention**: Induction of labor **Comparator**: None The association of the duration of the latent phase of labor and obstetric outcomes was analyzed using regression.	Results: Maternal morbidities increased with the length of the latent phase (e.g. postpartum hemorrhage, and chorioamnionitis, both P < .001).	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
Author: Rouse et al Year Published: 2011 Location: USS Journal: Obstetrics & Gynecology	To evaluate maternal and perinatal outcomes in women undergoing labor induction with an unfavorable cervix according to duration of oxytocin administration in the latent phase of labor after ruptured membranes.	**Size:** 1,347 women **Inclusion Criteria**: nulliparas at or beyond 36 weeks of gestation undergoing induction with a cervix of 2 cm or less dilated and less than completely effaced; subgroup of those who received oxytocin, regardless of membrane status **Exclusion Criteria**: maternal fever immediately before randomization, infections such as active genital herpes, HIV), hepatitis B or C, and chronic conditions such as diabetes mellitus, heart disease treated	**Type:** Secondary data analysis of an RCT on fetal pulse oximetry. **Intervention**: Induction of labor **Comparator**: None	Results:The vaginal delivery rate was 63.2%. 69.7% completed the latent phase 6 hours after oxytocin and ROM. 5% remained in the latent phase after 12 hours. The longer the latent phase, the lower the vaginal delivery rate. 39.4% of those in the latent phase after 12 hours of oxytocin and ROM delivered vaginally. Incidence of chorioamnionitis, endometritis (or both), and uterine atony were related to the latent-phase duration., with OR's of 1.1.2 and 1.13	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		with medication, and renal disease.		for each additional hour. Neonatal outcomes were not affected. The authors conclude that CD should not be undertaken prior to 12 hours after oxytocin and ROM.	**Non-Randomized Studies (post- hoc analysis of RCT data)** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

BODY OF EVIDENCE APPRAISAL TABLE FOR: Neonatal outcomes					
Quality (certainty) of evidence for: (outcome) ☐High ☐ Moderate ☒ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Low Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**

APEX Study Author Grobman, et al Year Published: 2018 Location: USa Journal: Obstetrics	To determine the frequency of adverse maternal and perinatal outcomes as a function of the duration of the latent phase among nulliparous women undergoing labor induction.	**Size:** 10,677 women **Inclusion Criteria**: Overall cohort was women of at least 23 weeks gestation with a live fetus delivering at 25 US hospitals from 2008 through 2011; for this analysis: nulliparous; had a singleton, cephalic gestation at >/= 37 weeks; and underwent labor induction. **Exclusion Criteria**: If data required to calculate the length of the latent phase was not available in the chart (eg, time at ROM, time at oxytocin initiation, time at least 5 cm was reached)	**Type:** Cohort study **Intervention**: Induction of labor **Comparator**: None The association of the duration of the latent phase of labor and obstetric outcomes was analyzed using regression.	Results: Adverse perinatal outcomes were not increased.	**Study Limitations:** ☐ None **Non-Randomized Studies** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up
Author: Rouse et al Year Published: 2011 Location: USS Journal: Obstetrics & Gynecology	To evaluate maternal and perinatal outcomes in women undergoing labor induction with an unfavorable cervix according to duration of oxytocin administration in the latent phase of labor after ruptured membranes.	**Size:** 1,347 women **Inclusion Criteria**: nulliparas at or beyond 36 weeks of gestation undergoing induction with a cervix of 2 cm or less dilated and less than completely effaced; subgroup of those who received oxytocin, regardless of membrane status **Exclusion Criteria**: maternal fever immediately before randomization, infections such as active genital herpes, HIV), hepatitis B or C, and chronic conditions such as diabetes mellitus, heart disease treated	**Type:** Secondary data analysis of an RCT on fetal pulse oximetry. **Intervention**: Induction of labor **Comparator**: None	Results: Neonatal outcomes were not affected.	**Study Limitations:** ☐ None ***RCTs*** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		with medication, and renal disease.			**Non-Randomized Studies (post- hoc analysis of RCT data)** ☐ Failure to develop and apply appropriate eligibility criteria ☐ Flawed measurement of both exposure and outcome ☒ Failure to adequately control confounding ☐ Incomplete or inadequately short follow-up

The GRADE criteria were used to evaluate the quality of evidence presented in research articles reviewed during the development of this guideline. For more detailed information, see Appendix A.

Question 15: After cervical ripening is achieved, what is the optimal dose and route of oxytocin?

BODY OF EVIDENCE APPRAISAL TABLE FOR: Population: Women undergoing induction of labor Modality: High-Dose vs Low-Dose Oxytocin Outcome: Cesarean Delivery		
Quality (certainty) of evidence for: (outcome) ☐High ☒ Moderate ☐ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Budden, A., et al Year Published: 2014 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effectiveness and safety of high- versus low-dose oxytocin for induction of labour at term.	**Size:** 8 trials, involving 2023 women **Inclusion Criteria**: Pregnant women for induction of labour carrying a viable fetus from 37 weeks of completed gestation. Induction of labour refers to the artificial initiation of uterine contractions before the spontaneous onset of labour (as distinct from augmentation of labour for delay or slow progress in labour)	**Type:** Systematic Review **Intervention**: **• High-dose regimen: infusion to deliver more than 100 mU oxytocin in the first 40 minutes and more than 600 mU in two hours** **• Low-dose regimen: infusion to deliver less than 100 mU oxytocin in the first 40 minutes and less than 600 mU in two hours** Primary outcomes: 1. Vaginal delivery not achieved within 24 hours (or period specified by trial authors). 2. Uterine hyperstimulation with fetal heart rate (FHR) changes. 3. Caesarean section. 4. Serious neonatal morbidity or perinatal death (e.g. seizures, birth asphyxia defined by trialists, neonatal encephalopathy, disability in childhood). 5. Serious maternal morbidity or death (e.g. uterine rupture, admission to intensive care unit, septicaemia).	**Results:** **Results of primary outcomes revealed no significant differences in rates of caesarean section (RR 0.96, 95% CI 0.81 to 1.14)**	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Budden, A., et al. (2014). "High-dose versus low-dose oxytocin infusion regimens for induction of labour at term." Cochrane Database of Systematic Reviews(10): CD009701.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing augmentation of labor
Modality: High-Dose vs Low-Dose Oxytocin
Outcome: Vaginal Delivery

Quality (certainty) of evidence for: (outcome) ☐ High ☒ Moderate ☐ Low ☐ Very Low					
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low		**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Budden, A., et al Year Published: 2014 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effectiveness and safety of high- versus low-dose oxytocin for induction of labour at term.	**Size:** 2 trials, involving 1339 women **Inclusion Criteria**: Pregnant women for induction of labour carrying a viable fetus from 37 weeks of completed gestation. Induction of labour refers to the artificial initiation of uterine contractions before the spontaneous onset of labour (as distinct from augmentation of labour for delay or slow progress in labour)	**Type:** Systematic Review **Intervention**: • High-dose regimen: infusion to deliver more than 100 mU oxytocin in the first 40 minutes and more than 600 mU in two hours • Low-dose regimen: infusion to deliver less than 100 mU oxytocin in the first 40 minutes and less than 600 mU in two hours Primary outcomes: 1. Vaginal delivery not achieved within 24 hours (or period specified by trial authors). 2. Uterine hyperstimulation with fetal heart rate (FHR) changes. 3. Caesarean section. 4. Serious neonatal morbidity or perinatal death (e.g. seizures, birth asphyxia defined by trialists, neonatal encephalopathy, disability in	**Results:** **Results of primary outcomes revealed no significant differences in rates of vaginal delivery not achieved within 24 hours (risk ratio (RR) 0.94, 95% confidence interval (CI) 0.78 to 1.14, two trials, 1339 women)**	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

			childhood). 5. Serious maternal morbidity or death (e.g. uterine rupture, admission to intensive care unit, septicaemia).		

Budden, A., et al. (2014). "High-dose versus low-dose oxytocin infusion regimens for induction of labour at term." Cochrane Database of Systematic Reviews(10): CD009701.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing augmentation of labor
Modality: High-Dose vs Low-Dose Oxytocin
Outcome: Hyper stimulation

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)

☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Budden, A., et al Year Published: 2014 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effectiveness and safety of high- versus low-dose oxytocin for induction of labour at term.	**Size:** 9 trials, involving 2391 women **Inclusion Criteria**: Pregnant women for induction of labour carrying a viable fetus from 37 weeks of completed gestation. Induction of labour refers to the artificial initiation of uterine contractions before	**Type:** Systematic Review **Intervention**: • High-dose regimen: infusion to deliver more than 100 mU oxytocin in the first 40 minutes and more than 600 mU in two hours • Low-dose regimen: infusion to deliver less than 100 mU	**Results:** **A significant increase in hyperstimulation without specifying fetal heart rate changes was found in the high-dose group (RR 1.86, 95% CI 1.55 to 2.25).**	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

		the spontaneous onset of labour (as distinct from augmentation of labour for delay or slow progress in labour)	oxytocin in the first 40 minutes and less than 600 mU in two hours Primary outcomes: 1. Vaginal delivery not achieved within 24 hours (or period specified by trial authors). 2. Uterine hyperstimulation with fetal heart rate (FHR) changes. 3. Caesarean section. 4. Serious neonatal morbidity or perinatal death (e.g. seizures, birth asphyxia defined by trialists, neonatal encephalopathy, disability in childhood). 5. Serious maternal morbidity or death (e.g. uterine rupture, admission to intensive care unit, septicaemia).		

Budden, A., et al. (2014). "High-dose versus low-dose oxytocin infusion regimens for induction of labour at term." Cochrane Database of Systematic Reviews(10): CD009701.

BODY OF EVIDENCE APPRAISAL TABLE FOR: Population: Women undergoing augmentation of labor Modality: High-Dose vs Low-Dose Oxytocin Outcome: Adverse Events		
Quality (certainty) of evidence for: (outcome) ☐ High ☐ Moderate ☒ Low ☐ Very Low		
Risk of Bias across studies: ☐ High ☒ Medium ☐ Low	**Lower Quality Rating if:** ☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)	**Other Considerations:** Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if:

		☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*		☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect	
Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Budden, A., et al Year Published: 2014 Location: Journal: *Cochrane Database of Systematic Reviews*	To determine the effectiveness and safety of high- versus low-dose oxytocin for induction of labour at term.	**Size:** 2 trials, 1304 **Inclusion Criteria**: To determine the effectiveness and safety of high- versus low-dose oxytocin for induction of labour at term.	**Type:** Systematic Review **Intervention**: • High-dose regimen: infusion to deliver more than 100 mU oxytocin in the first 40 minutes and more than 600 mU in two hours • Low-dose regimen: infusion to deliver less than 100 mU oxytocin in the first 40 minutes and less than 600 mU in two hours Primary outcomes: 1. Vaginal delivery not achieved within 24 hours (or period specified by trial authors). 2. Uterine hyperstimulation with fetal heart rate (FHR) changes. 3. Caesarean section. 4. Serious neonatal morbidity or perinatal death (e.g. seizures, birth asphyxia defined by trialists, neonatal encephalopathy, disability in childhood). 5. Serious maternal morbidity or death (e.g. uterine rupture, admission to intensive care unit, septicaemia).	**Results:** **There was no difference in serious maternal morbidity or death (RR 1.24, 95% CI 0.55 to 2.82, one trial, 523 women), and no difference in serious neonatal morbidity or perinatal death (RR 0.84, 95% CI 0.23 to 3.12, one trial, 781 infants).**	**Study Limitations:** ☒ None ***Systematic Review*** ☐ Review did not address focused clinical question ☐ Search was not detailed or exhaustive ☐ Quality of the studies was not appraised ☐ Inappropriate pooled analysis

Budden, A., et al. (2014). "High-dose versus low-dose oxytocin infusion regimens for induction of labour at term." Cochrane Database of Systematic Reviews(10): CD009701.

BODY OF EVIDENCE APPRAISAL TABLE FOR:

Population: Women undergoing induction of labor
Modality: Pulsatile versus continuous administration of oxytocin
Outcome: Cesarean Delivery

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

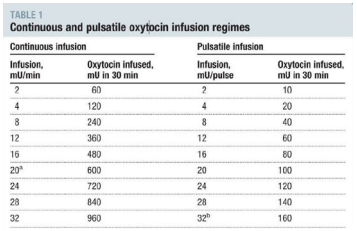
Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Tribe, R. M., et al Year Published: 2012 Location: Journal: *American Journal of Obstetrics & Gynecology*	To determine whether pulsatile oxytocin infusion improves delivery outcome in women requiring induction or augmentation of labor.	**Size:** 523 women **Inclusion Criteria**: Any pregnant woman (over 18 years old who could give informed consent) requiring induction or augmentation of labor was eligible to enter the study. **Exclusion Criteria:** Women were excluded if they were undergoing induction of labor for fetal death in utero, fetal abnormality, breech, or multiple pregnancy. Women with a history of previous cesarean section.	**Type:** RCT **Intervention**: Women were randomly assigned to a pulsatile or continuous infusion protocol. Primary outcome: cesarean section rate (induction trial); operative delivery rate (augmentation trial).  TABLE 1 Continuous and pulsatile oxytocin infusion regimes Continuous infusion: Infusion, mU/min; Oxytocin infused, mU in 30 min Pulsatile infusion: Infusion, mU/pulse; Oxytocin infused, mU in 30 min 2 60 2 10 4 120 4 20 8 240 8 40 12 360 12 60 16 480 16 80 20[a] 600 20 100 24 720 24 120 28 840 28 140 32 960 32[b] 160	**Results:** **In the intervention arm, pulsatile infusion of approximately one sixth of the standard oxytocin infusion resulted in a comparable cesarean section rate to the continuous infusion protocol** (RR, 1.01; 95% CI, 0.81-1 .26; risk difference, 0.5%; 95% CI, - 7.8 to 8.9; P=.904).	**Study Limitations:** ☐ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Tribe, R. M., et al. (2012). "Pulsatile versus continuous administration of oxytocin for induction and augmentation of labor: two randomized controlled trials." American Journal of Obstetrics & Gynecology 206(3): 230.e231-238.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Pulsatile versus continuous administration of oxytocin
Outcome: Failed vaginal birth by 24h

Quality (certainty) of evidence for: (outcome)
☐ High
☒ Moderate
☐ Low
☐ Very Low

Risk of Bias across studies:	**Lower Quality Rating if:**	**Other Considerations:**
☐ High ☒ Medium ☐ Low	☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*) N/A ☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)* ☐ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*	Lower Quality Rating if: ☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)* Increase Quality Rating if: ☐ Large effect ☐ Dose-response gradient ☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	**Aim of Study**	**Patient Population**	**Study Methods**	**Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)**	**Design Limitations**
Author: Tribe, R. M., et al Year Published: 2012 Location: Journal: *American Journal of Obstetrics & Gynecology*	To determine whether pulsatile oxytocin infusion improves delivery outcome in women requiring induction or augmentation of labor.	**Size:** 523 **Inclusion Criteria**: Any pregnant woman (over 18 years old who could give informed consent) requiring induction or augmentation of labor was eligible to enter the study. **Exclusion Criteria:** Women were excluded if they were undergoing induction of labor for fetal death in utero, fetal abnormality, breech, or multiple pregnancy. Women	**Type:** RCT **Intervention**: Women were randomly assigned to a pulsatile or continuous infusion protocol. Primary outcome: cesarean section rate (induction trial); operative delivery rate (augmentation trial).	**Results:** **There was no significant difference between the groups in the number of women failing to achieve vaginal delivery within 24 Hours** (RR, 1.08; 95% CI, 0.88-1 .31; risk difference, 3.1%; 95% CI, - 5.4 to 11.6; P=.476).	**Study Limitations:** ☒ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment ☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

		with a history of previous cesarean section.	TABLE 1 **Continuous and pulsatile oxytocin infusion regimes** **Continuous infusion** / **Pulsatile infusion** Infusion, mU/min — Oxytocin infused, mU in 30 min — Infusion, mU/pulse — Oxytocin infused, mU in 30 min 2 — 60 — 2 — 10 4 — 120 — 4 — 20 8 — 240 — 8 — 40 12 — 360 — 12 — 60 16 — 480 — 16 — 80 20[a] — 600 — 20 — 100 24 — 720 — 24 — 120 28 — 840 — 28 — 140 32 — 960 — 32[b] — 160		

Tribe, R. M., et al. (2012). "Pulsatile versus continuous administration of oxytocin for induction and augmentation of labor: two randomized controlled trials." American Journal of Obstetrics & Gynecology **206**(3): 230.e231-238.

BODY OF EVIDENCE APPRAISAL TABLE FOR:
Population: Women undergoing induction of labor
Modality: Pulsatile versus continuous administration of oxytocin
Outcome: Adverse Events

Quality (certainty) of evidence for: (outcome)
☐ High
☐ Moderate
☒ Low
☐ Very Low

Risk of Bias across studies:
☐ High
☒ Medium
☐ Low

Lower Quality Rating if:
☐ Studies inconsistent (*wide variation of treatment effect across studies, population, interventions, or outcomes varied*)
N/A
☐ Studies are indirect (*PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)*

☒ Studies are imprecise (*when studies include few patients and few events, and thus have wide confidence intervals, and the results are uncertain)*

Other Considerations:
Lower Quality Rating if:
☐ Publication Bias (*e.g. pharmaceutical company sponsors study on effectiveness of drug only small, positive studies found)*

Increase Quality Rating if:
☐ Large effect
☐ Dose-response gradient
☐ Plausible confounders or other biases increase certainty of effect

Study Acronym; Author; Year Published; Location	Aim of Study	Patient Population	Study Methods	Endpoint Results / Outcome (Absolute Event Rates, P values; OR or RR; & 95% CI)	Design Limitations
Author: Tribe, R. M., et al Year Published: 2012 Location: Journal: *American Journal of Obstetrics & Gynecology*	To determine whether pulsatile oxytocin infusion improves delivery outcome in women requiring induction or augmentation of labor.	**Size:** n =523 **Inclusion Criteria**: Any pregnant woman (over 18 years old who could give informed consent) requiring	**Type:** RCT **Intervention**: Women were randomly assigned to a pulsatile or continuous infusion protocol. Primary outcome: cesarean section rate (induction trial);	**Results:** There were no incidences of serious maternal or neonatal mortality and no differences in rates of serious morbidity. there were no differences between the 2 oxytocin	**Study Limitations:** ☒ None **RCTs** ☒ Lack of blinding ☐ Lack of allocation concealment

		induction or augmentation of labor was eligible to enter the study. **Exclusion Criteria:** Women were excluded if they were undergoing induction of labor for fetal death in utero, fetal abnormality, breech, or multiple pregnancy. Women with a history of previous cesarean section.	operative delivery rate (augmentation trial). TABLE 1 **Continuous and pulsatile oxytocin infusion regimes** Continuous infusion / Pulsatile infusion Infusion, mU/min — Oxytocin infused, mU in 30 min — Infusion, mU/pulse — Oxytocin infused, mU in 30 min 2 — 60 — 2 — 10 4 — 120 — 4 — 20 8 — 240 — 8 — 40 12 — 360 — 12 — 60 16 — 480 — 16 — 80 20[a] — 600 — 20 — 100 24 — 720 — 24 — 120 28 — 840 — 28 — 140 32 — 960 — 32[b] — 160	infusion protocols in relation to meconium stained liquor, an Apgar score of < 7 at 5 minutes, hypoxic ischemic encephalopathy, hyperbilirubemia, seizures, or infection.	☐ Unclear allocation concealment ☐ Stopped early for benefit ☐ Incorrect analysis of ITT ☐ Selective reporting of measures (e.g., no effect outcome) ☐ Large losses to F/U ☐ Difference in important prognostic factors at baseline

Tribe, R. M., et al. (2012). "Pulsatile versus continuous administration of oxytocin for induction and augmentation of labor: two randomized controlled trials." American Journal of Obstetrics & Gynecology **206**(3): 230.e231-238.

Appendix A. GRADE criteria for rating a body of evidence on an intervention

Developed by the GRADE Working Group

Grades and interpretations:

High: Further research is very unlikely to change our confidence in the estimate of effect. Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low: Any estimate of effect is very uncertain.

Type of evidence and starting level

Randomized trial–high Observational study–low Any other evidence–very low

Criteria for increasing or decreasing level

Reductions Study quality has serious (–1) or very serious (–2) problems Important inconsistency in evidence (–1) Directness is somewhat (–1) or seriously (–2) uncertain Sparse or imprecise data (–1) Reporting bias highly probable (–1) **Increases** Evidence of association† strong (+1) or very strong (+2) Dose-response gradient evident (+1) All plausible confounders would reduce the effect (+1)

†Strong association defined as significant relative risk (factor of 2) based on consistent evidence from two or more studies with no plausible confounders Very strong association defined as significant relative risk (factor of 5) based on direct evidence with no threats to validity.

Appendix B. Trustworthy Guideline rating scale

The University of Pennsylvania's Center for Evidence-Based Practice Trustworthy Guideline rating scale is based on the Institute of Medicine's "Standards for Developing Trustworthy Clinical Practice Guidelines" (IOM), as well as a review of the AGREE Enterprise and Guidelines International Network domains.

The purpose of this scale is to focus on the weaknesses of a guideline that may reduce the trust a clinical user can have in the guideline, and distinguish weaknesses in documentation (e.g. guide-line does not have a documented updating process) from weaknesses in the guidance itself (e.g. recommendations are outdated). Current quality scales like AGREE emphasize documentation. They are important checklists for developers of new guidelines, but are less useful for grading existing guidelines. These scales also are harder for clinicians and other persons who are not methodology experts to apply, and their length discourages their use outside formal technology assessment reports. This new scale is brief, balanced, and easy and consistent to apply.

We do not attempt to convert the results of this assessment into a numeric score. Instead we present a table listing the guidelines and how they are rated on each standard. This facilitates qualitative understanding by the reader, who can see for what areas the guideline base as a whole is weak or strong as well as which guidelines are weaker or stronger.

1. Transparency

A	Guideline development methods are fully disclosed.
B	Guideline development methods are partially disclosed.
C	Guideline development methods are not disclosed.

The grader must refer to any cited methods supplements or other supporting material when evaluating the guideline. Methods should include:
Who wrote the initial draft
How the committee voted on or otherwise approved recommendations
Evidence review, external review and methods used for updating are not addressed in this standard.

2. Conflict of interest

A	Funding of the guideline project is disclosed, disclosures are made for each individual panelist, and financial or other conflicts do not apply to key authors of the guideline or to more than 1 in 10 panel members).
B	Guideline states that there were no conflicts (or fewer than 1 in 10 panel members), but does not disclose funding source.
C	Lead author, senior author, or guideline panel members (at least 1 in 10) have conflict of interest, or guideline project was funded by industry sponsor with no assurance of independence.
NR	Guideline does not report on potential conflict of interests.

For purposes of this checklist, conflicts of interest include employment by, consulting for, or holding stock in companies doing business in fields affected by the guideline, as well as related financial conflicts. This definition should not be considered exclusive. As much as anything, this is a surrogate marker for thorough reporting, since it may be assumed that guideline projects are funded by the sponsoring organization and many authors think it unnecessary to report a non-conflict.

3. Guideline development group

A	Guideline development group includes 1) methodological experts and clinicians and 2) representatives of multiple specialties.
B	Guideline development group includes one of the above, but not both.
C	Guideline developers all from one specialty or organization, and no methodologists.
NR	Affiliations of guideline developers not reported

The purpose of this standard is to ensure that supporters of competing procedures, or clinicians with no vested interest in utilization of one procedure or another, are involved in development of the guideline. Both AGREE II and IOM call for patient or public involvement: very few guideline panels have done so to date, so this is not necessary for guidelines to be rated A. Involvement of methodologists or HTA specialists in the systematic review is sufficient involvement in the guideline development group for our purposes. In the absence of any description of the guideline group, assume the named authors are the guideline group.

4. Systematic review

A	Guideline includes a systematic review of the evidence or links to a current review.
B	Guideline is based on a review which may or may not meet systematic review criteria.
C	Guideline is not based on a review of the evidence.

In order to qualify as a systematic review, the review must do all of the following:

Describe itself as systematic or report search strategies using multiple databases
Define the scope of the review (including key questions and the applicable population)
Either include quantitative or qualitative synthesis of the data or explain why it is not indicated

Note: this element does not address the quality of the systematic review: simply whether or not it exists. Concerns about quality or bias of the review will be discussed in text, where the analyst will explain whether the weaknesses of the review weaken the validity or reliability of the guideline.
Note: a guideline may be rated B on this domain even if the review on which it is based is not available to us. This potential weakness of the guideline should be discussed in text of the report.

5. Grading the supporting evidence

A	Specific supporting evidence (or lack thereof) for each recommendation is cited and graded
B	Specific supporting evidence (or lack thereof) for each recommendation is cited but the recommendation is not graded.
C	Recommendations are not supported by specific evidence.

To score a B on this domain there should be specific citations to evidence tables or individual references for each relevant recommendation in the guideline, or an indication that no evidence was available. Any standardized grading system is acceptable for purposes of this rating. If a guideline reports that there is no evidence available despite a thorough literature search, it may be scored B on this domain, or even A if evidence for other recommendations is cited and graded.

6. Recommendations

A	Considerations for each recommendation are documented (i.e. benefits and harms of a particular action, and/or strength of the evidence); and recommendations are presented in an actionable form.
B	Either one or the other of the above criteria is met.
C	Neither of the above criteria are met

In order to be actionable, the guideline should specify the specific population to which the guideline applies, the specific intervention in question, and the circumstances under which it should be carried out (or not carried out). The language used in the recommendations should also be consistent with the strength of the recommendation (e.g. directive and active language like “should” or “should not” for strong recommendations, and passive language like “consider” for weak recommendations). A figure

or algorithm is considered actionable as long as it is complete enough to incorporate all the applicable patients and interventions. Please see the forthcoming NICE manual (24) for a good discussion of actionability in guidelines.

7. External review

A	Guideline was made available to external groups for review.
B	Guideline was reviewed by members of the sponsoring body only.
C	Guideline was not externally reviewed.
NR	No external review process is described.

8. Updating and currency of guideline

A	Guideline is current and an expiration date or update process is specified.
B	Guideline is current but no expiration date or update process is specified.
C	Guideline is outdated.

A guideline is considered current if it is within the developers' stated validity period, or if no period or expiration data is stated, the guideline was published in the past three years (NOTE: the specific period may be changed at the analyst's discretion, based on whether the technology is mature and whether there is a significant amount of recent evidence). A guideline must address new evidence when it is updated. A guideline which is simply re-endorsed by the panel without searching for new evidence must be considered outdated.