Multidisciplinary Management of the Opioid Crisis To Optimize Perinatal Outcome in a Rural Women's Clinic Population

Dale Robinson MD,FACOG
Jennifer Gonzalez RN,BSN

FACING ADDICTION IN AMERICA

The Surgeon General's Report on Alcohol, Drugs, and Health

U.S. Department of Health & Human Services

Surgeon General's Report 2016

- Office of the Surgeon General released this first report of its kind – *The Surgeon General's Report on Alcohol, Drugs, and Health*.
- Report identified addiction the number one public health problem in America.
- Addiction at the crisis level - 1/3 of total population affected.
- The *Report* discusses opportunities to bring substance use disorder treatment and mainstream health care systems into alignment

Opioid Addiction

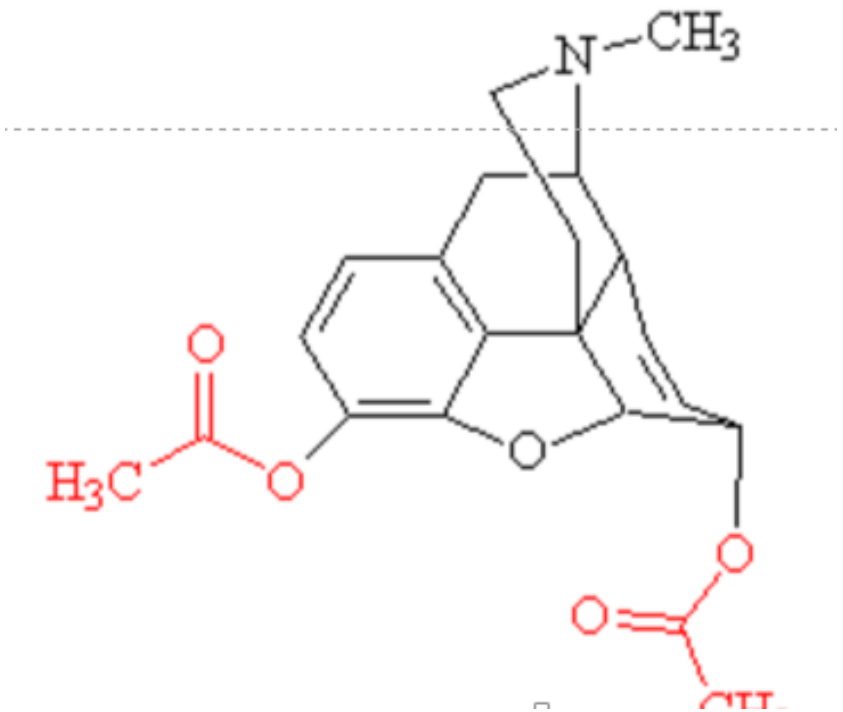
Scope of the Problem : Cost

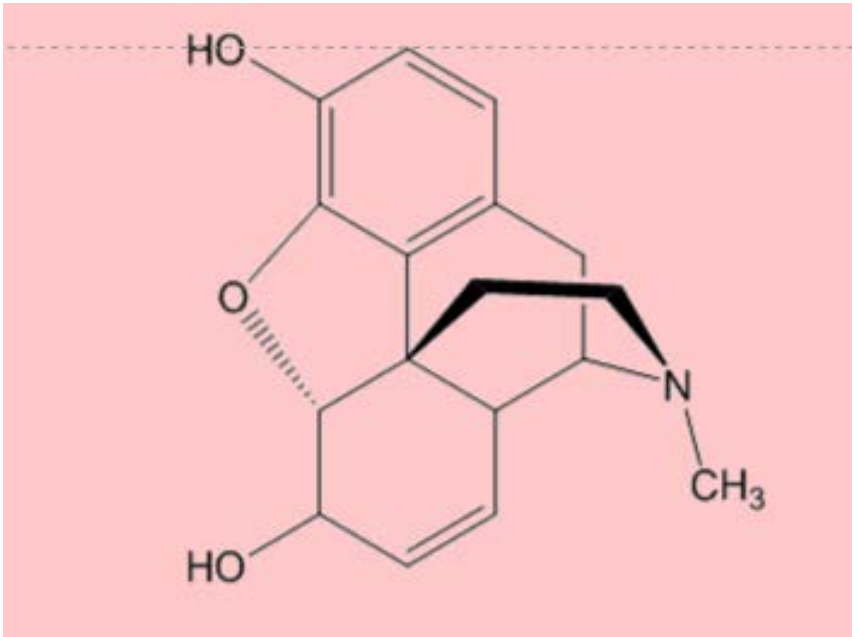
- Substance misuse and substance use disorders also have serious economic consequences, costing more than $400 billion annually in crime, health, and lost productivity
- Diabetes by contrast cost the US $245 billion annually
- A potentially more effective use of healthcare resources should focus on efforts on screening and treating addiction rather than managing outcomes of the disease

Opioid Addiction

- In the 1990's we were told pain is the 5th Vital Sign
- Pleasant sensations cause endorphin production which transiently bind the mu opioid receptor
- Morphine strongly binds the receptor and produces intense euphoria
- Attempts have been made to harness positive analgesic effects without side effects or potential for addiction

Heroin



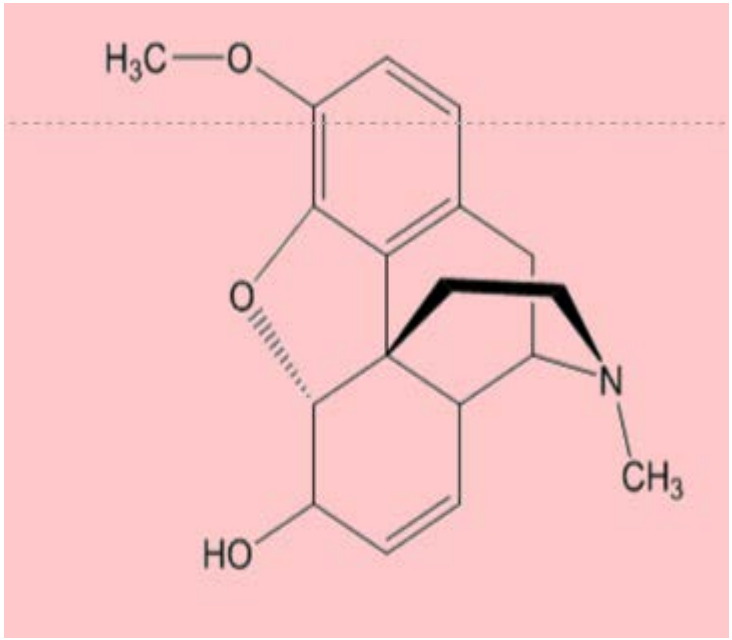


Heroin

- Heron was synthesized from morphine in 1874
- It was once hoped that heroin would have the analgesic properties of morphine
- Without the addictive potential
- Widely abused and banned in the Heroin Act of 1924

Codeine

- Very similar structure (ether)
- FDA warning against breastfeeding due to potentially rapid conversion to morphine leading to infant toxicity
- Breastfeeding is encouraged for buprenorphine and methadone although monitoring for CNS depression is always prudent



Risk of Addiction

- Risk of substance use disorder rises after 5 days of use and increases dramatically with prolonged use
- One in four patients using legal opioids misuses them (continuation of opioids past the point of analgesia)
- Opioid use has quadrupled over the past decade
- In 2015 2 million patients abused prescription opioids while 600000 abused heroin

Risk of Addiction

- Many heroin users once abused legal narcotics
- Every 3 minutes a woman of child bearing age seeks care in an ED related to prescription opioid misuse
- Increased opioid use in pregnant women has increased Neonatal Abstinence Syndrome (NAS) 5 fold and 2/3 of these cases are associated with legally prescribed narcotics

Risk of Addiction

- Addiction in laboratory animals
- Causes of opioid addiction are multifactorial
- Clinicians, pharmaceutical companies, accrediting organizations, drug cartels, and public expectations are all involved
- Changing the way we do business and addressing the crisis in a multidisciplinary fashion is needed to resolve the public health crisis

How Can We Help Our Community?

- Community Assessment- current programs available and functionality.
- Identify Key Stakeholders- School, hospital, clinical practice, Center for Human Development (CHD), Department of Human Services (DHS) and local law enforcement. (AA and DA programs)
- Federal and State Grants

Barriers to Success

- Timid Population – addicts are sensitive and untrusting of non-addicts. They are easily scared away from treatment.
- Buy in from providers- are the providers on board with a program?
- Expectations of the providers- is it realistic?
- Realistic expectations of patients

Barriers to Success

- Cost- Hiring new employees and training current staff
- Funding for emergent needs for the patients
- Education to staff and providers

The Children and Recovering Mothers (CHARM) Collaborative in Burlington, Vermont A Case Study

A Case Study of a successful Collaborative serving pregnant women with opioid dependence, their babies and families

Healthy Outcomes

- Healthy outcomes are more likely when women obtain prenatal care early during pregnancy, consistently complete their prenatal visits, receive MAT and participate in counseling. Conversely, poor health outcomes for the baby are more likely when women miss prenatal and neonatal appointments, continue their illicit use of opioids, lack stable housing, and/or do not continue to obtain substance abuse counseling. To reach our goals we have identified 6 key elements for a successful recovery program.

6 Key Elements

- Screening
- Navigator
- Home safety assessment
- Individualized treatment plan
- Delivery plan
- Post delivery care

REPORTING

- **Oregon law** states that all medical personnel are **mandatory** reporters. The Department of Human Services specifically states that all county health employees are **mandatory** reporters and are required to **report** any suspected abuse or neglect. Child Abuse - "Child" means an unmarried person who is under 18 years of age.

- Oregon does not recognize the fetus as a "child" and therefore has no protective rights. However if the maternal patient is using drugs or engaging in an activity that could put her other children at risk – that is reportable.

Screening Best Practices

- Screening for alcohol in pregnant women is easier as valid standardized questionnaires are available
- Screening for drugs is not as simple and there is no universally accepted practice
- U.S. Preventive Services Task Force – insufficient evidence for screening
- ACOG recommends screening all pregnant women

Screening Best Practices: Barriers

- Legal consequences to a positive screen include:
- Possible child custody affects
- Societal stigma
- Lack of availability of drug treatment and referral options for patients with a positive test

Screening Best Practices: Barriers

- Do we need a questionnaire? Who should administer it?
- If laboratory tests are done, how reliable are they?
- State laws limit testing options for patients that don't consent and patients should be aware of possible false positive results and mandatory reporting requirements
- We do not report rapid drug screens to DHS due to the risk of false positives; only confirmatory tests are reported

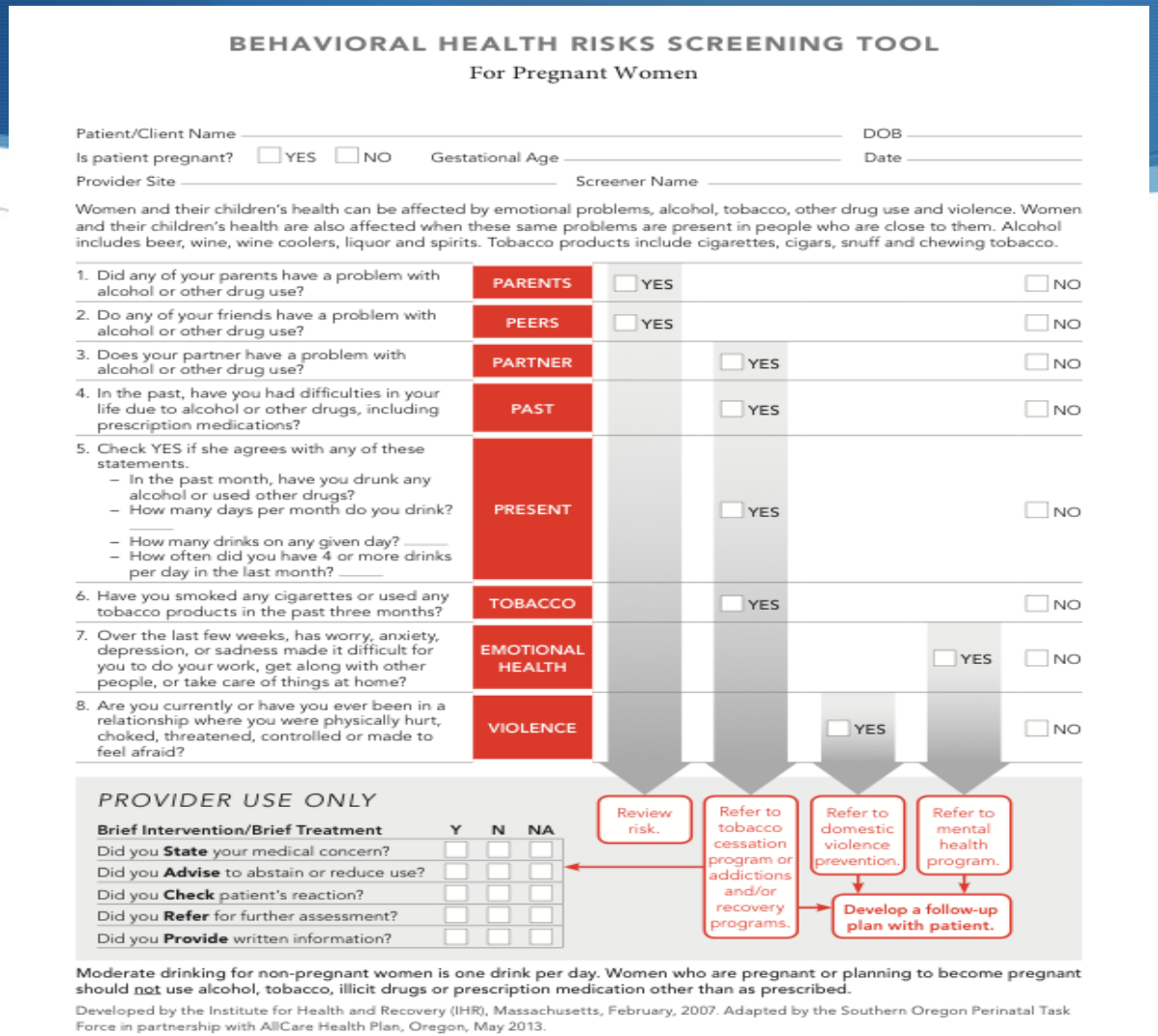
Screening Best Practices: Legal

- ACOG: Urine drug testing should be performed with the patient's consent and in compliance with existing state laws. Pregnant women should be informed of the potential consequences of a positive test before performing it, including any mandatory reporting requirements
- Oregon law requires written consent
- Clinical vs. forensic testing

CHARM Program: Screening

- Screening occurs when indicated
- Patients in Medically Assisted Treatment (MAT) get frequent testing
- Own protection and always voluntary
- Worrisome clinical picture and high suspicion
- Oregon Law requires patient consent

Screening Instrument



BEHAVIORAL HEALTH RISKS SCREENING TOOL

For Pregnant Women

Patient/Client Name _____ DOB _____

Is patient pregnant? ☐ YES ☐ NO Gestational Age _____ Date _____

Provider Site _____ Screener Name _____

Women and their children's health can be affected by emotional problems, alcohol, tobacco, other drug use and violence. Women and their children's health are also affected when these same problems are present in people who are close to them. Alcohol includes beer, wine, wine coolers, liquor and spirits. Tobacco products include cigarettes, cigars, snuff and chewing tobacco.

1. Did any of your parents have a problem with alcohol or other drug use?	PARENTS	☐ YES						☐ NO
2. Do any of your friends have a problem with alcohol or other drug use?	PEERS	☐ YES						☐ NO
3. Does your partner have a problem with alcohol or other drug use?	PARTNER		☐ YES					☐ NO
4. In the past, have you had difficulties in your life due to alcohol or other drugs, including prescription medications?	PAST		☐ YES					☐ NO
5. Check YES if she agrees with any of these statements. – In the past month, have you drunk any alcohol or used other drugs? – How many days per month do you drink? _____ – How many drinks on any given day? _____ – How often did you have 4 or more drinks per day in the last month? _____	PRESENT		☐ YES					☐ NO
6. Have you smoked any cigarettes or used any tobacco products in the past three months?	TOBACCO		☐ YES					☐ NO
7. Over the last few weeks, has worry, anxiety, depression, or sadness made it difficult for you to do your work, get along with other people, or take care of things at home?	EMOTIONAL HEALTH					☐ YES		☐ NO
8. Are you currently or have you ever been in a relationship where you were physically hurt, choked, threatened, controlled or made to feel afraid?	VIOLENCE			☐ YES				☐ NO
		Review risk.	Refer to tobacco cessation program or addictions and/or recovery programs.	Refer to domestic violence prevention.		Refer to mental health program.		

PROVIDER USE ONLY

Brief Intervention/Brief Treatment	Y	N	NA
Did you **State** your medical concern?	☐	☐	☐
Did you **Advise** to abstain or reduce use?	☐	☐	☐
Did you **Check** patient's reaction?	☐	☐	☐
Did you **Refer** for further assessment?	☐	☐	☐
Did you **Provide** written information?	☐	☐	☐

Develop a follow-up plan with patient.

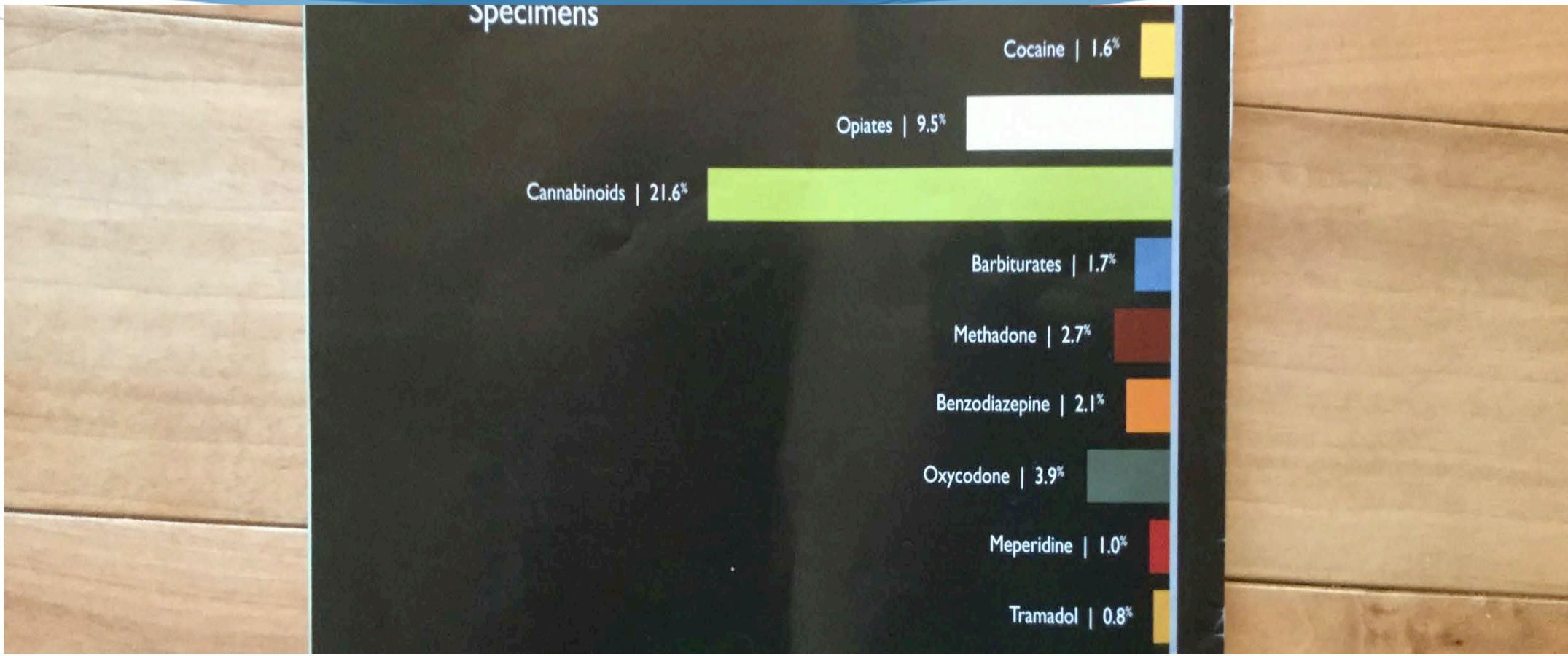
Moderate drinking for non-pregnant women is one drink per day. Women who are pregnant or planning to become pregnant should not use alcohol, tobacco, illicit drugs or prescription medication other than as prescribed.

Developed by the Institute for Health and Recovery (IHR), Massachusetts, February, 2007. Adapted by the Southern Oregon Perinatal Task Force in partnership with AllCare Health Plan, Oregon, May 2013.

CHARM Program: Screening Role

- Developed by the Institute for Health and Recovery 2007
- Adapted by the Southern Oregon Perinatal Taskforce in partnership with Allcare Health Plan Oregon May 2013
- 5 P's : parents, peers, partner, past and present
- Everyone is screened at initial obstetric visit with this form by clinical nurse and appropriate referrals are made

Screening Results: Rates of USDTL Clients with High Risk Pregnancies



Colorado Positivity Rates of Clients with High Risk Pregnancies

- A study of the impact of relaxing statewide marijuana laws on maternal marijuana use; Joseph Jones, Clarity in Newborn Toxicology 2016 volume 7
- THC positivity rate for all meconium specimens increased from 10.6% to 11.7% from 2012 to 2014
- The median concentration of THC in the meconium specimens more than doubled from 108ng to 277ng
- Neonates following commercialization are exposed to substantially more THC in utero

THC Edibles

THC Concentrates Continued

THC Concentrates Continued

- Woodstock era marijuana 2% THC vs Colorado 30%
- Single serving 10 mg and THC lobbies solution
- Candy cigarettes, Flavored nicotine vapes
- Nicotine –infused Pop-Tarts, Alcohol-infused gummies, or codeine-infused sodas
- Edibles are 40 percent of the market

Marijuana risks in Pregnancy and Lactation

- ACOG and AAP recommends pregnant and lactating women not use marijuana either medically or recreationally
- THC remains in breast milk for 6 days or longer
- Concentrates are concerning and are effectively a new drug
- Highest concentrate studied is 16 mg; Lancet

AAP and Marijuana

- Observational studies indicate concern for fetal growth and early neonatal behaviors
- As well as altered long-term neurodevelopmental consequences of prenatal exposure to marijuana.
- These studies were conducted when marijuana had a much lower potency than today thus the adverse consequences may be much greater than what has been reported to date

Case Study Late Screen

- A maternal patient in her late 20's arrived to the OB department in early labor at 39 weeks. She is married with a 3 year old at home. A stay at home mom devoted to her family. Had a history of "dabbling" with drug use in her teens- but "nothing since". History of ankle fracture over a year ago that required surgical repair, otherwise very healthy.
- Changes in the program

Navigator Role

- The navigator is a highly motivated, organized, “people” person, adept at conflict resolution. It is most beneficial if they have a background in social work. She/he must have access to the EHR and have social services connections. The navigator coordinates medical care, substance abuse treatment, social supports, and nutrition services for CHARM families. She also educates parents about CHARM and requests a signed release of information for families that enroll in the program. She relies on the CHARM meetings to coordinate services for CHARM clients efficiently with other providers.

Navigator Role

- The navigator updates the collaborative team during monthly meetings where CHARM patient updates are provided. The team reviews and assesses the individualized treatment plan of each CHARM patient and family ensuring that all needs are addressed and met.

Individualized Treatment Plan

- Individualized plan of care – it is just that. No two people are the same in their daily struggles and no two people will fit into the same "cookie cutter" plan of care for treatment.
- In addition to standard prenatal care, each visit includes a urine drug test; monitoring of attendance at prior prenatal visits; substance abuse counseling; home-visiting appointments; and ongoing assessment of social support needs, including housing, transportation, and mental health services.

Individualized Treatment Plan

- A Medication Assisted Therapy (MAT) assessment is typically completed at the first CHARM appointment. All CHARM women who receive MAT must also receive substance abuse counseling and non-pharmacological substance abuse treatment. Both group and individual treatment are provided to CHARM patients.
- Collaborative members stress the importance of substance abuse counseling with families and make every effort to keep women engaged and actively participating in this aspect of their treatment.

Home Safety Assessment

- The home safety assessments of families affected by prenatal substance exposure are completed using the same protocol as those used for all families reported to DHS Children Services for any reason. CHARM Collaborative members may share the results of safety assessments and intervention plans with other collaborative members, and all members who are working with a family share their observations regarding the family's progress, success, concerns, and needs.

Home Safety Assessment

- CHD maternal nurse completes the home assessment. This helps to establish a relationship prior to delivery and the nurse can help answer questions the patient may have regarding her pregnancy. Assessment findings are communicated to the navigator who will then communicate to the delivering hospital and collaborative members.

Delivery Plan

- The CHARM navigator alerts all collaborative members and delivery units of expected deliveries at 30-34 weeks gestation.
- Labor and delivery protocols are the same for all women delivering at GRH, except that the focus on pain control increases because women taking buprenorphine or methadone often experience higher levels of pain during childbirth.

Post-delivery Care

- GRH continues to provide services to CHARM women for 6 weeks after delivery for follow-up care. After that time, the women receive ongoing care from a community-based clinic or a primary care provider.
- Newborns are seen weekly by CHD Babies First – a home nursing visit where they measure the baby's weight and size; conducts a physical examination; monitors the infant's growth and development; lactation services are available.
- A continuation of substance abuse counseling; home-visiting appointments; and ongoing assessment of social support needs, including housing, transportation, and mental health.

Case-Study Delivery Plan

- 30+ year old woman with extensive heroin and Oxycontin use. Has 2 older children who were removed by DHS and are being raised by the FOB's family. Has a huge fear of government agencies- DHS and CHD especially- and therefore very reluctant for any interference. After signing into CHARM, she received social support including housing, is involved with therapy, counseling and MAT program. The patient was very successful in her recovery efforts.
- High concern for relapse due to her extensive drug use history.

Best Practices: Can We Use Less Narcotics Without Inadequate Pain Treatment

- Prevention is Better Than Treatment
- Are We Overprescribing Narcotics After Delivery?
- Duration of use is a risk factor for addiction
- Can we limit Narcotics Use During Inpatient Stay and Still Adequately Treat Pain
- Alternative Treatments of Postoperative Pain

Best Practices: Opioid Prescribing at Hospital Discharge

- How many oxycodone tablets do we prescribe after vaginal delivery? Cesarean?
- How many should we? Are there best practices?
- CDC recommends that 3 days or less will often be sufficient for acute pain and that rarely are more than 7 days necessary? Is this true in obstetrics?

Leftover Narcotics

- Those pills not taken after a legal prescription
- Pathway to opioid abuse
- Many individuals abusing narcotics received them from community family or friends
- Studies in other areas of medicine suggest that more than half of legal narcotics go unused and are not disposed of safely

Best Practices: Opioids at Hospital Discharge after Cesarean Delivery

- Cesarean Delivery is the most common major surgical procedure in the US
- The risk of developing opioid addiction after CD in opioid naïve patients is low (1/300) but the number of procedures makes this an important public health issue
- Post-discharge opioid use after Cesarean Delivery was studied by Osmundson and colleagues in Obstetrics and Gynecology
- July 2017:130:36-41

Postdischarge Opioid Use After Cesarean Delivery: Osmundson et al

- They found that 83% of surgical patients used narcotics after hospital discharge for a median duration of use of 8 days with a interquartile range of 6-13 days
- 17% used opioids for more than 2 weeks postpartum with the maximum duration being 39 days
- The average prescription was for 30 tablets and 75 % of patients had unused tablets
- A median of 10 unused oxycodone tablets were leftover per patient and for every additional 10 tablets of oxycodone prescribed and average of 2 additional extra tablets occurred

Post-discharge Opioid Use After Cesarean Delivery: Osmundson et al

- Only 6 % of patients reported disposing of extra tablets safely so a significant quantity of tablets was leftover
- Less than 3% had an additional prescription of narcotics filled
- Higher inpatient use of narcotics made the patient less likely to have leftover narcotics and to report that they were prescribed too few medications
- The women using the most pills postop were more likely to use tobacco and have public health insurance

Postdischarge Opioid Use After Cesarean Delivery: Osmundson et al

- The patients using the most narcotics in the postoperative period were given more narcotics but the correlation was weak (r=.35); other factors were involved
- Provider type was an important determinant of prescribing practice with CNM prescribing fewer narcotics than physicians in a faculty practice
- The authors concluded that more narcotics were apparently needed than the CDC recognized but leftover narcotics was a significant problem; they suggested that, ”health care providers are not currently considering in –hospital opioid use in determining the amount of opioid prescribed at discharge. Instead prescriptions appear to be personalized to health care provider background”

What is the right number of pills after CD?

- CDC suggests 3 days or less
- Osmundson study median 8 days with range 6-13 days
- 75% of patients had leftover pills
- Can we lower this number yet meet legitimate postop pain needs
- Wal-mart in our community

What is the right number of pills after CD?

- A Shared Decision-Making Intervention to Guide Opioid Prescribing After Cesarean Delivery Prabhu et al.
- Obstet Gynecol 2017; 13-42-6
- A study was done asking postop c-section patients how many pills they needed
- Postoperative patients received information concerning typical pain resolution time courses where allowed to choose the number of 5 mg oxycodone tablets

A Shared Decision-Making Intervention

- The median number of tablets was 20 with interquartile range 15-25
- 90% were satisfied with the analgesia achieved and only 8% required an additional prescription
- The number of tablets prescribed was significantly less than the institutional average of 40 pills
- The number of leftover tablets was 4 with an interquartile range of 0 to 8

Narcotics after vaginal delivery

- Does everyone need them?
- Filled prescriptions for opioids after vaginal delivery
- Jarlenski and colleagues
- Obstet Gynecol 2017;129:431-7.

Narcotics after vaginal delivery

- 12% of women filled an opioid prescription within 5 days of delivery
- 72% of them did not have a laceration, episiotomy or tubal ligation
- Most women received 3-7 days worth of narcotics but some received up to 30 days worth of medication
- Smokers and patients with a mental health diagnosis were more likely to receive meds
- The rate of leftover pills was not recorded

Narcotics after vaginal delivery

- No national guidelines
- Pennsylvania guidelines; hierarchical approach
- ACOG in Postpartum Pain Management July 2018
- Nonpharmacologic treatment, nonnarcotic treatment
- Finally only after treatment failure short acting opioid can be used for 5-7 days

Best Practices: Opioid Management During Pregnancy

- Medically supervised withdrawal versus medically assisted treatment
- Prevention of Neonatal Abstinence Syndrome (NAS) is desirable
- Goal of treatment is to prevent withdrawal and illicit use of opiates
- Increased risk of relapse and withdrawal poses a risk to the fetus
- The risk of maternal relapse and possible fetal risks have limited this approach in most cases and medication –assisted treatment is the preferred treatment in most cases

Opioid Prescription During Pregnancy: Methadone

- Studies have been inconsistent in establishing the relationship between methadone dose and NAS incidence and severity: a lower dose is not safer
- May be better than buprenorphine for women with longstanding poly-substance abuse and previous failed detox attempts
- Methadone is only routinely available through a federally regulated addiction clinic
- Both methadone and buprenorphine may be dispensed in a hospital setting by physicians without waivers

Opioid Prescription During Pregnancy: Buprenorphine

- Buprenorphine is a synthetic opioid that produces weaker euphoric effects than methadone or heroin and is a partial antagonist
- Ceiling effect: shorting acting agonist like fentanyl will provide more analgesia but it will take a higher dose
- Pregnant women on methadone should not transition to buprenorphine because buprenorphine may precipitate withdrawal due to its partial antagonist action

Opioid Prescription During Pregnancy: Buprenorphine

- Buprenorphine is the only opioid agonist currently approved for the treatment of opioid use disorder by prescription in an office-based setting
- Increases availability of treatment and may decrease stigma of treatment; currently more than 37000 providers in many specialties are approved prescribers
- Buprenorphine advantage: lower risk of death from an overdose than methadone
- Suboxone is a combination of buprenorphine with naloxone and is rarely used in pregnant women

Buprenorphine : Better Neonatal Outcomes

- The Maternal Opioid Treatment, Human Experimental Research study which was a multicenter randomized trial comparing buprenorphine with methadone
- Buprenorphine exposed neonates required 89% less morphine to treat NAS and spent 43% less time in the hospital
- The total neonatal abstinence syndrome score and the individual signs were higher among methadone exposed neonates
- Meta-analysis: buprenorphine exposed neonates had greater gestational age and birth weight and were less likely to use illicit opioids near delivery

https://www.youtube.com/watch?v=x8S6m5rOn7I

Neonatal Abstinence Syndrome

- Neonatal Abstinence Syndrome- (NAS) is a group of conditions that occurs when the newborn withdrawals from a substance it was exposed to while in the womb.
- NAS increased 5 fold and 2/3 of cases are associated with legal medications
- NAS after buprenorphine develop symptoms by 48 hours and peak by 72-96 hours
- NAS after methadone: symptoms appear by 3-5 days but may appear as late as a week of age and persist longer
- All newborns exposed to opioids should be monitored for at least 96 hrs (AAP guideline)

Neonatal Abstinence Syndrome

- How do you counsel patients?
- NAS incidence variable but high up to 80%
- Factors that affect the incidence and severity of NAS include CNS agents such as nicotine benzodiazepines, gabapentin, SSRI, THC, and genetic predisposition, gestational age and maternal diet.
- Role of lactation

Neonatal Abstinence Syndrome

- Do you treat it locally at a CAH?
- https://www.youtube.com/watch?v=4jnyiJmgbQY
- All CHARM babies stay in their mother's room after birth. CHARM mothers are encouraged to use non-pharmacological treatments for withdrawal symptoms in their infants, including skin-to-skin contact, breastfeeding, and a low-stimulus environment for the baby. A low-stimulus environment includes low levels of lights, low levels of noise, and few visitors. CHARM infants typically stay in the hospital for 4–6 days for NAS monitoring.
- Hospital nurses assess all CHARM babies for NAS using a scoring tool based on the Finnegan Neonatal Abstinence Scoring System (Finnegan, 1975). Assessments begin at 2 hours after birth and continuing every 3 to 4 hours for the first 96 hours until discharge.

Case Study NAS

Patient in her early 20's with a history of Oxycontin addiction that developed into heroin addiction- anywhere from 2-6 point a day. Committed and completed 30 day inpatient rehab, moved to a new apartment, therapy and counseling 2-3 times a week and MAT program. Planned repeat C-section at 39 weeks.

Baby stayed in the hospital for 6 days.