Recent ID studies of interest to primary care pediatrics

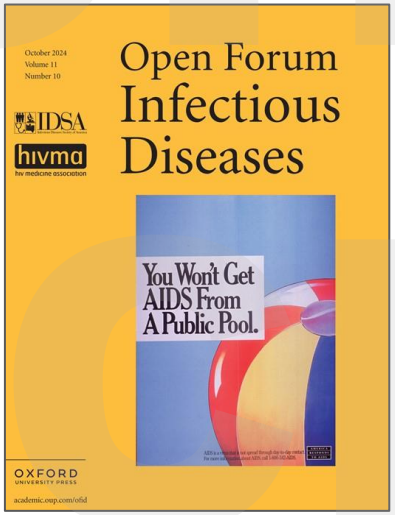
By the numbers

Michael Cosimini MD
Pediatrics Update Oct 2024

Don't Forget The Bubbles

Infectious Disease Puscast

CIDRAP



Conjunctivitis!

OHSU CPD

Original Investigation | Infectious Diseases

Effect of Topical Antibiotics on Duration of Acute Infective Conjunctivitis in Children

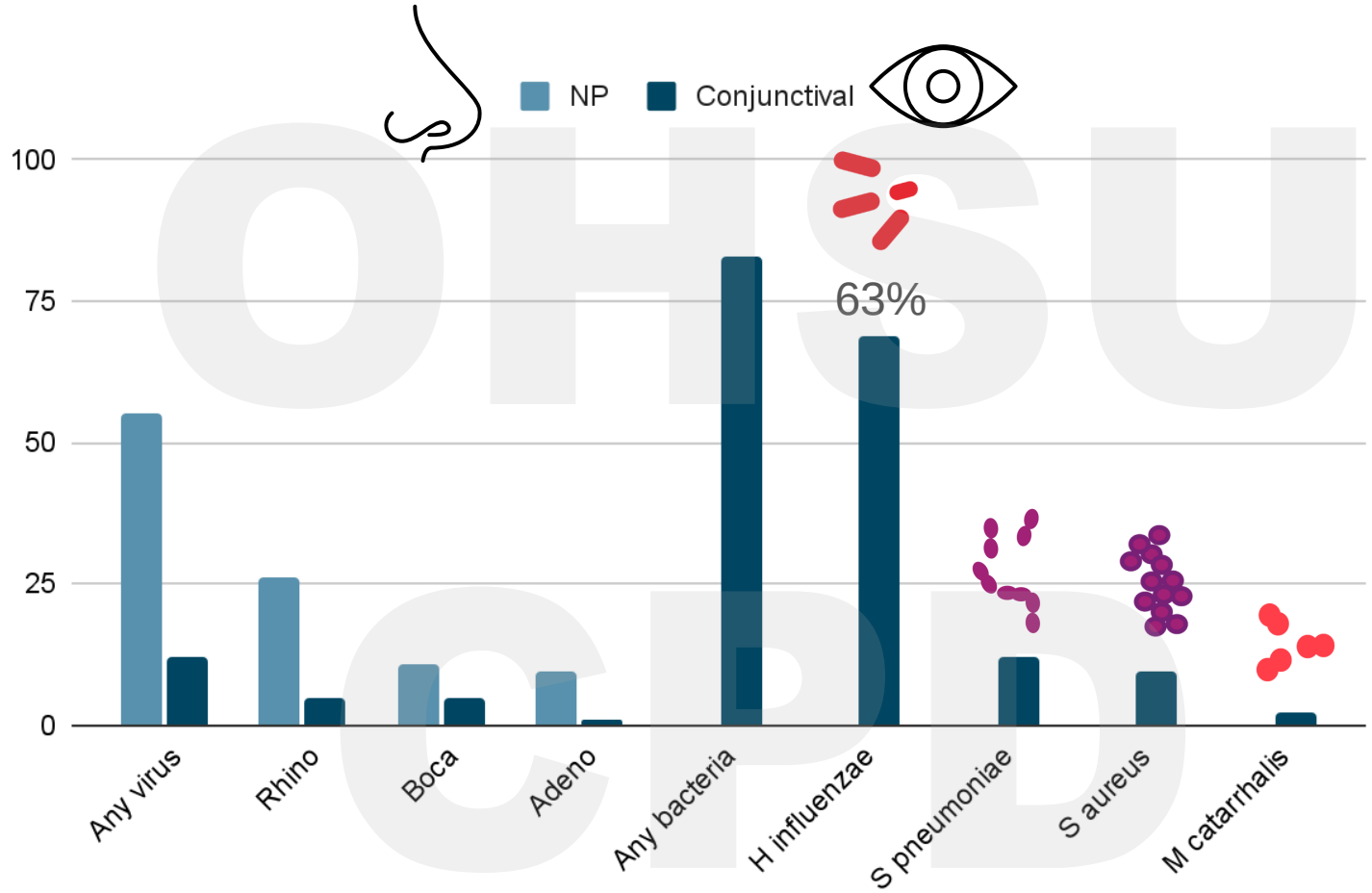
A Randomized Clinical Trial and a Systematic Review and Meta-analysis

Minna Honkila, MD, PhD; Ulla Koskela, MD, PhD; Tero Kontiokari, MD, PhD; Marja-Leena Mattila, MD, PhD; Aila Kristo, MD, PhD; Raija Valtonen, MD; Suvi Sarlin, MD; Niko Paalanne, MD, PhD; Irma Ikäheimo, PhD; Tytti Pokka, MSc; Matti Uhari, MD, PhD; Marjo Renko, MD, PhD; Terhi Tapiainen, MD, PhD

84 kids 6mo - 7 years with conjunctivitis in Finland.

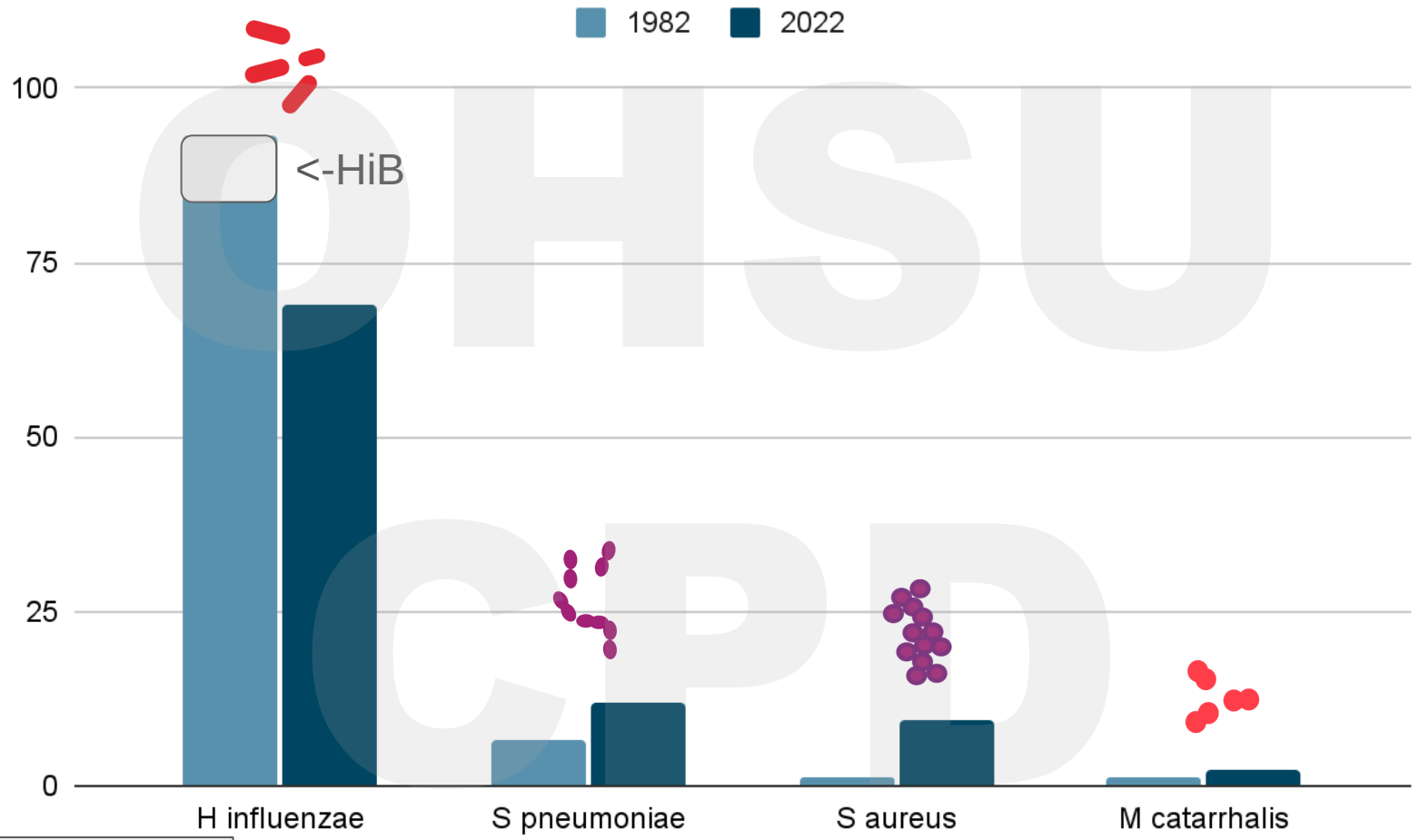
-NP swab viral PCR
-Eye discharge bacterial culture and viral PCR

What percentage of conjuntiva grew *H influenzae*?



Oct 2022 JAMA open

doi:10.1001/jamanetworkopen.2022.34459



June 1982 Pediatrics

PMID: 6979031

Randomized 6mo - 7 years with conjunctivitis in an Finnish RTC

- Moxifloxacin (30)
- Placebo (27)
- No treatment(31)

Time to clinical cure in days

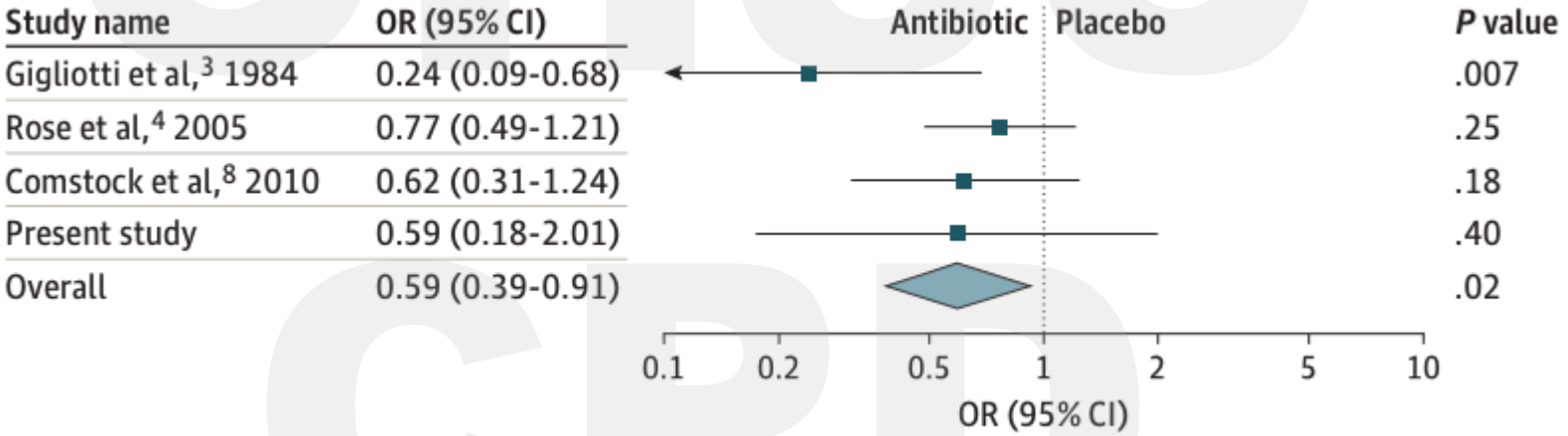
0.2 (-2.2 to 1.6)

	Moxifloxacin	Placebo	No intervention
Time to clinical cure in **days**	3.8 (SD 3.1)	4.0 (SD 2.3)	5.7 (SD 3.3)

-1.9 (-3.7 to -0.1)

OHSU CPD

Proportion of kids with symptoms on day 3-6 comparing abx to placebo:



JOURNAL ARTICLE

The Effect of Ophthalmic Antibiotics on Clinical Outcomes and Transmissibility of Conjunctivitis Associated with *Haemophilus influenzae* versus Other Pathogens: Secondary Analysis of a Randomized Controlled Trial

Get access

Elizabeth T Thomas, Rafael Perera-Salazar, Holly M Frost

Journal of the Pediatric Infectious Diseases Society, Volume 13, Issue 7, July 2024, Pages 349–351, https://doi.org/10.1093/jpids/piae043

Published: 13 May 2024

Secondary analysis of study from 2001-2004 in UK. RCT of chloramphenicol vs placebo.

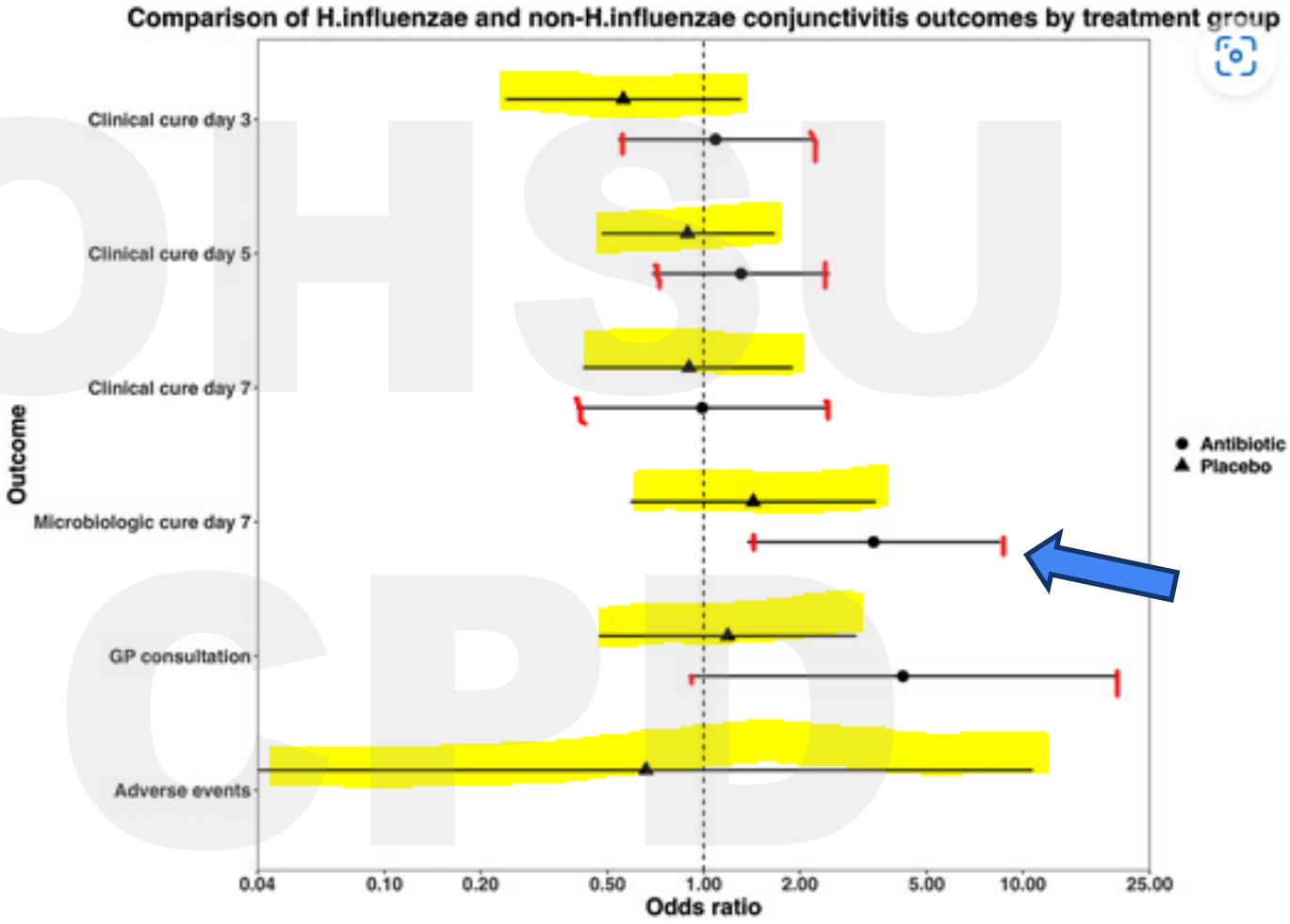
This one looked at only those that grew *H influenzae.* 96 got abx vs 98 placebo.

- Clinical outcome on day 7
- Household transmission rates

https://doi.org/10.1093/jpids/piae043

Antibiotic

|Placebo|



Household transmission was 8.2% in antibiotic group

What percent of household contacts that got placebo got infected?

OHSU CPD

8.2% in antibiotic group

7.3% in placebo

OHSU CPD

Open Forum Infectious Diseases

BRIEF REPORT

Association Between Antibiotic Receipt and Provider Rating Within a National Telemedicine Practice

Greeshmasree Kambam,[1] Shiva Salehian,[2] Cindy M. Liu,[3,4] Nina Kleinschmidt,[5] Kristin Dean,[5] Vibin Roy,[5] Jaclyn Marshall,[5,a] and Rana F. Hamdy[3,4,6,a]

[1]Department of Epidemiology, George Washington Milken Institute of Public Health, Washington, DC, USA, [2]Department of Health Policy, Virginia Commonwealth University, School of Medicine, Richmond, Virginia, USA, [3]Division of Infectious Diseases, Children's National Hospital, Washington DC, USA, [4]Antibiotic Resistance Action Center, Department of Environmental and Occupational Health, George Washington Milken Institute of Public Health, Washington, DC, USA, [5]Department of Clinical Care and Research, Included Health, San Francisco, California, USA, and [6]Department of Pediatrics, George Washington University, School of Medicine and Health Sciences, Washington, DC, USA

47K adult telemedicine visits with a rating
11K get non antibiotic Rx,
7K get an antibiotic Rx
Overall 95% had five star rating.

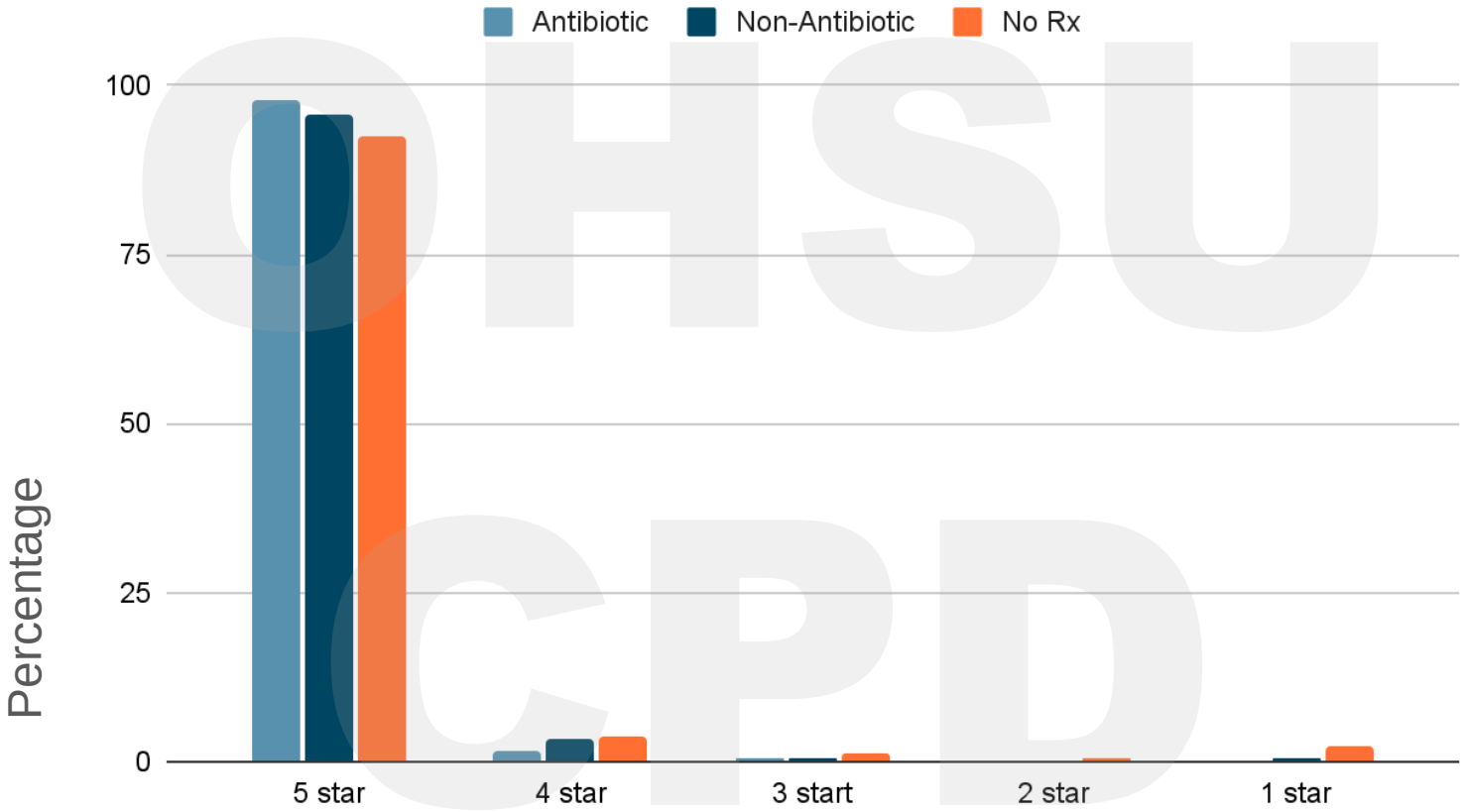
Odds ratio of a 5 star review when antibiotics were prescribed compared to no RX?

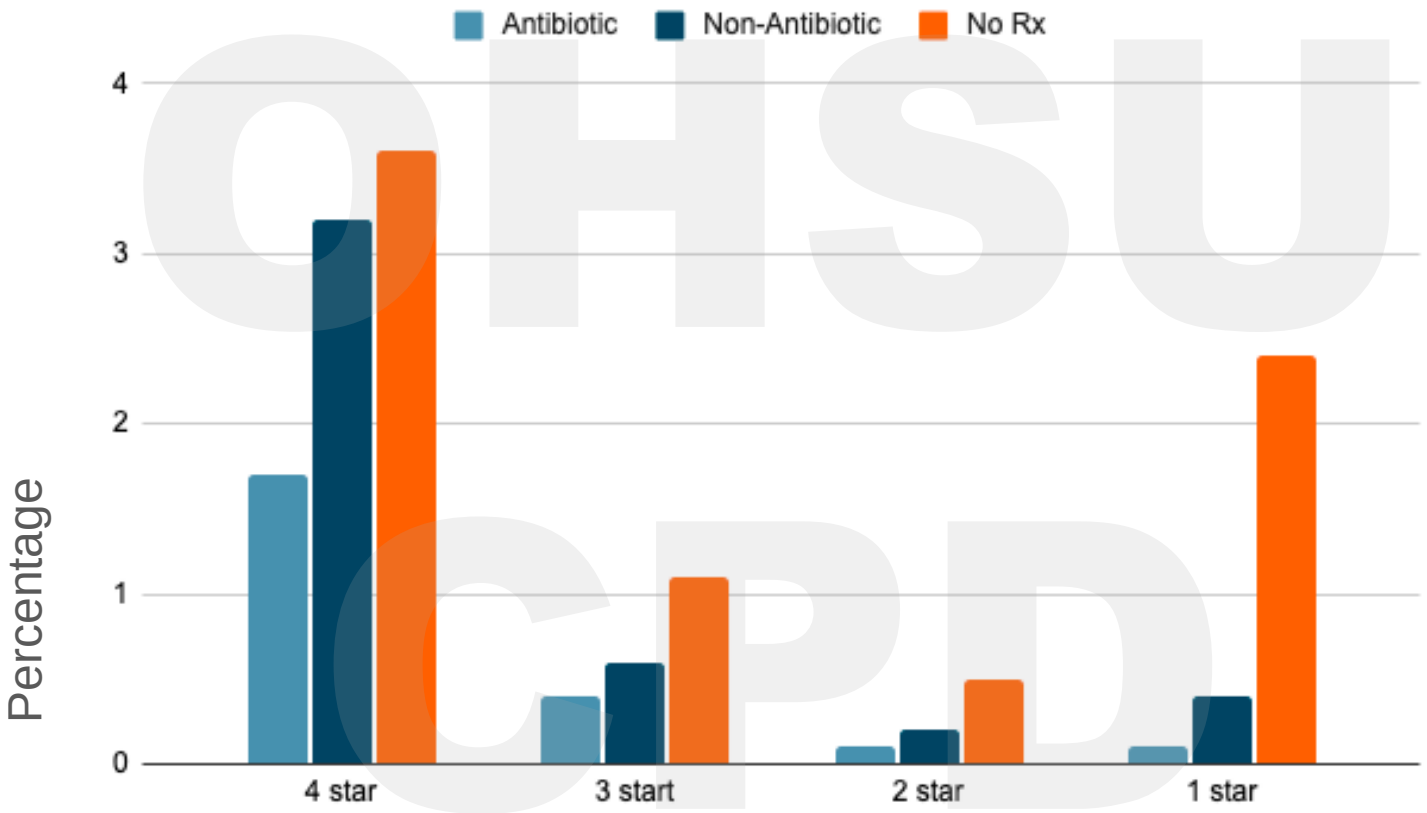
July 2024 OFID

https://doi.org/10.1093/ofid/ofae310

	Adjusted odds ratio 5 star
Non antibiotic Rx	1.55 (1.34–1.79)
Antibiotic Rx	2.56 (2.03–3.23)

OHSU CPD


Antibiotic
Non-Antibiotic
No Rx
Percentage
100
75
50
25
0
5 star
4 star
3 start
2 star
1 star


Antibiotic
Non-Antibiotic
No Rx
Percentage
4
3
2
1
0
4 star
3 start
2 star
1 star

- Bacterial is common!
- Topical can probably/maybe shorten symptoms
- Impact on transmission is?
- Consider artificial tears?
- **Exclude alternative or associated diagnosis**

OHSU CPD

Tainted eye drops tied to 81 cases of highly resistant Pseudomonas, 4 deaths

News brief | May 22, 2023

Jim Wappes

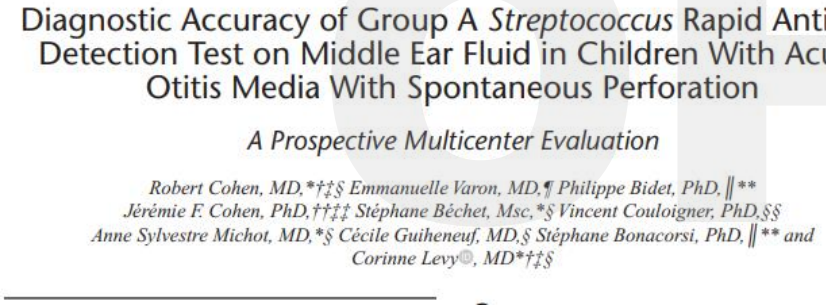
Topics: Antimicrobial Stewardship

OHSU CPD

https://www.cidrap.umn.edu/antimicrobial-stewardship/tainted-eye-drops-tied-81-cases-highly-resistant-pseudomonas-4-deaths

Otitis Media

OHSU CPD



Diagnostic Accuracy of Group A *Streptococcus* Rapid Antigen Detection Test on Middle Ear Fluid in Children With Acute Otitis Media With Spontaneous Perforation

A Prospective Multicenter Evaluation

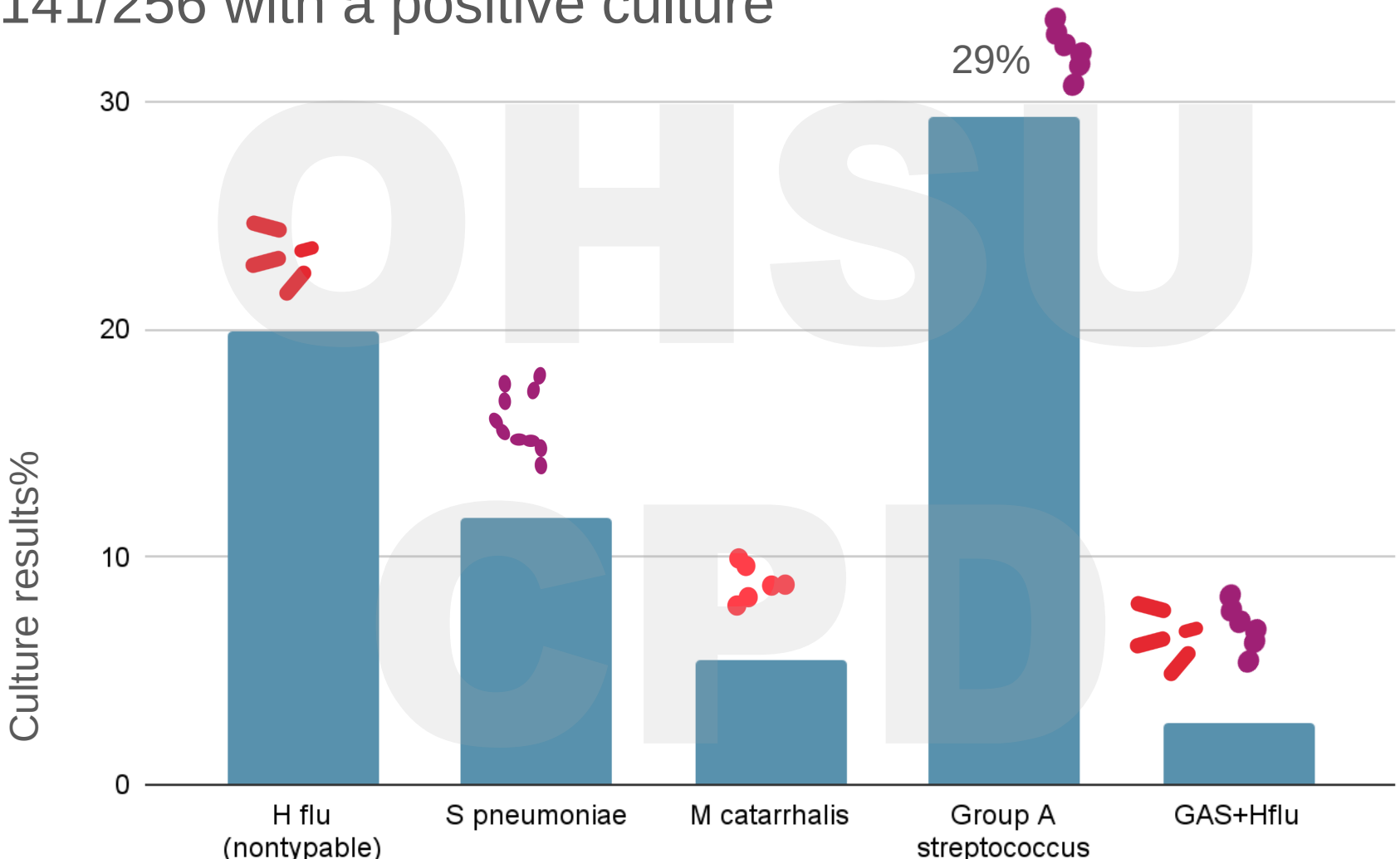
Robert Cohen, MD,†‡§ Emmanuelle Varon, MD,¶ Philippe Bidet, PhD,‖** Jérémie F. Cohen, PhD,†††‡ Stéphane Béchet, Msc,*§ Vincent Couloigner, PhD,§§ Anne Sylvestre Michot, MD,*§ Cécile Guiheneuf, MD,§ Stéphane Bonacorsi, PhD,‖** and Corinne Levy, MD*†‡§*

Multicenter French study (2019-2023) looking at kids 3mo -17y with spontaneous TM rupture.

- Bacterial Culture
- Rapid Strep

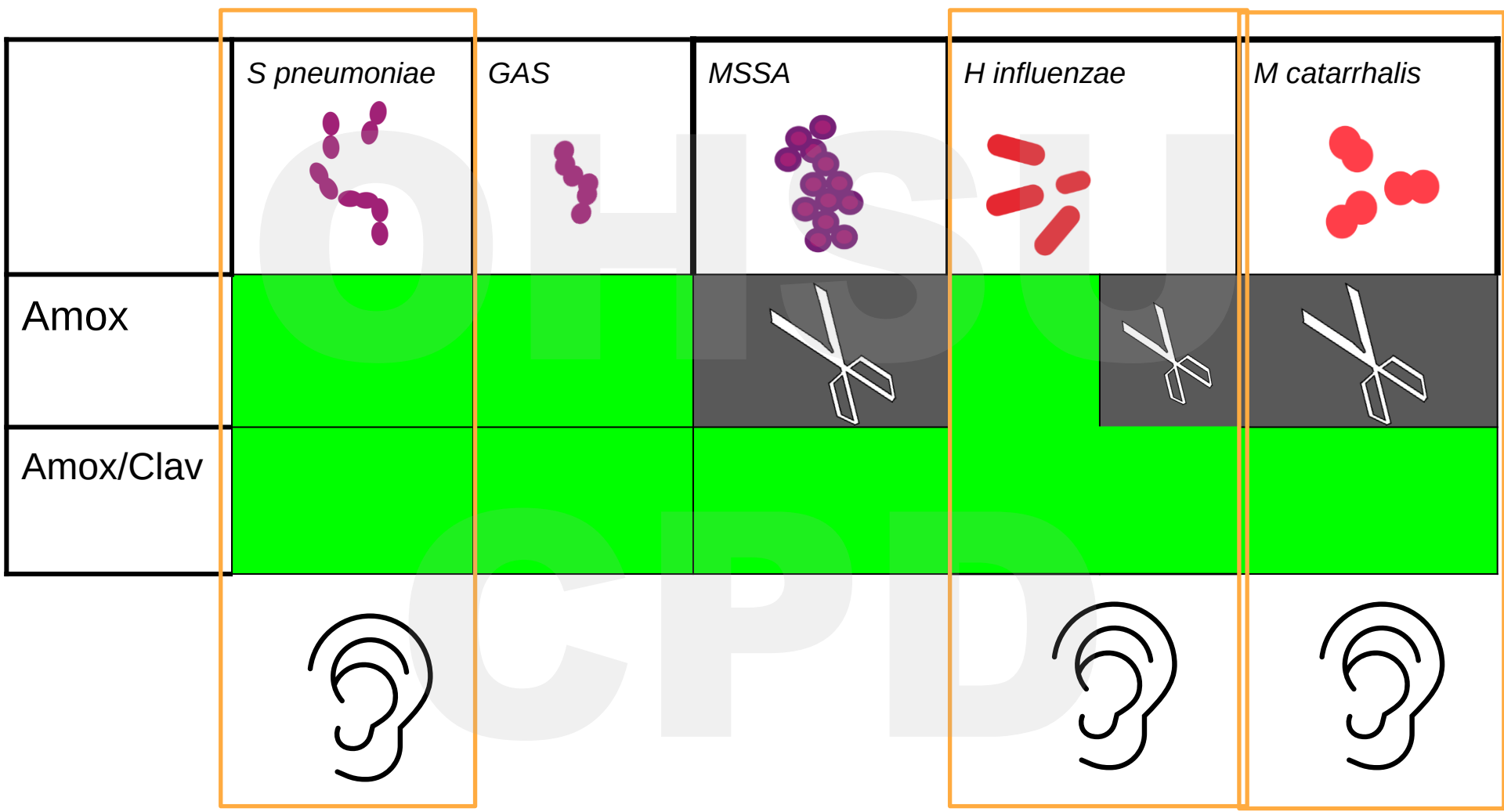
What was the most common bug?

141/256 with a positive culture



	GAS Culture+	GAS Culture–
RADT+	73	0
RADT–	2	181

OHSU CPD


S pneumoniae
GAS
MSSA
H influenzae
M catarrhalis
Amox
Amox/Clav

JOURNAL ARTICLE

Clinical Outcomes Associated with Amoxicillin Treatment for Acute Otitis Media in Children

Get access >

Holly M Frost ✉, Amy Keith, Dana R Fletcher, Thresia Sebastian, Samuel R Dominguez, Melanie Kurtz, Sarah K Parker, Michael L Wilson, Timothy C Jenkins

Journal of the Pediatric Infectious Diseases Society, Volume 13, Issue 3, March 2024, Pages 203–210, https://doi.org/10.1093/jpids/piae010

Published: 05 February 2024 **Article history** ▾

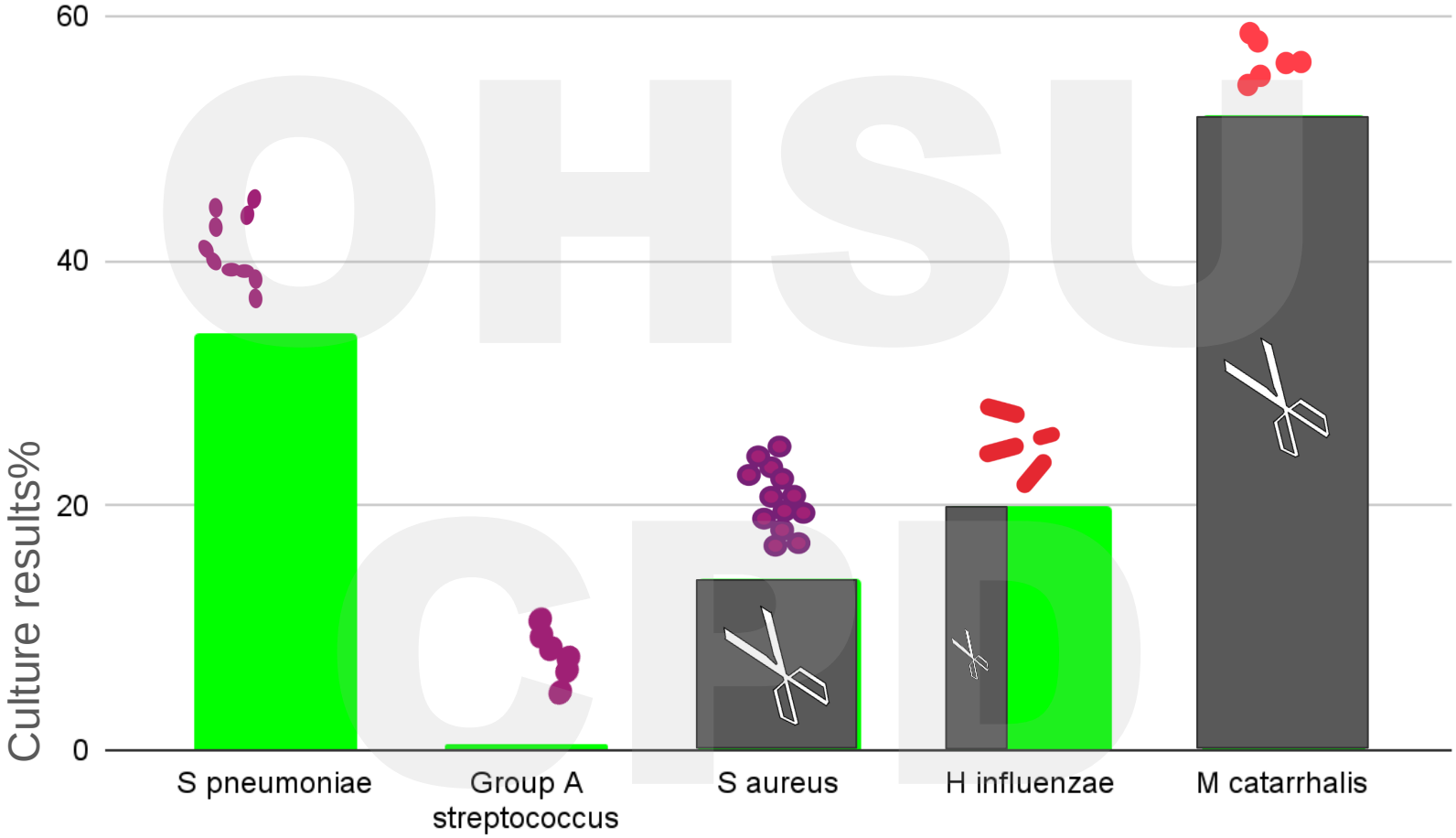
Prospective observational study of kids 6-35mo with AOM treated with Amox (PCP, UC, ED)

Culture and PCR done on NP samples.

Looked at primary outcome of new Rx within 14 days.

https://doi.org/10.1093/jpids/piae010

149 kids with no amox before enrollment:



Overall failure 5.1%

	S pneumoniae	*GAS*	*MSSA*	*H influenzae*		*M catarrhalis*
Amox						
Failure rate	3.9%		4.8%	5.3%	0%	5.1%

Side effects	
Diarrhea	16%
Diaper rash	8%
Upset stomach or emesis	6%
Body rash	6%

OHSU CPD

	Diarrhea Prevalence (95% CI)	Rash Prevalence (95% CI)
Amox/Clav HD	**18.9** (14.7-23.1)	**4.9** (2.4-7.4)
Amox HD	**13.8** (4.7-22.9)	**6.5** (0.0-15.3)
Cefdinir	**13.0** (11.2-14.7)	
Amox	**8.7** (6.2-11.6)	**2.9** (1.7-4.4)
Placebo	**6.9** (2.8-12.4)	**2.3** (0.3-5.5)
Azithromycin	**2.2** (1.4-3.0)	**1.4** (0.2-3.2)

DOI: 10.1016/j.jpeds.2019.08.043

- Perforated AOM is often GAS
- Amox is still good first line

OHSU
CPD

pneumonia(e)

OHSU
CPD

Open Forum Infectious Diseases

BRIEF REPORT

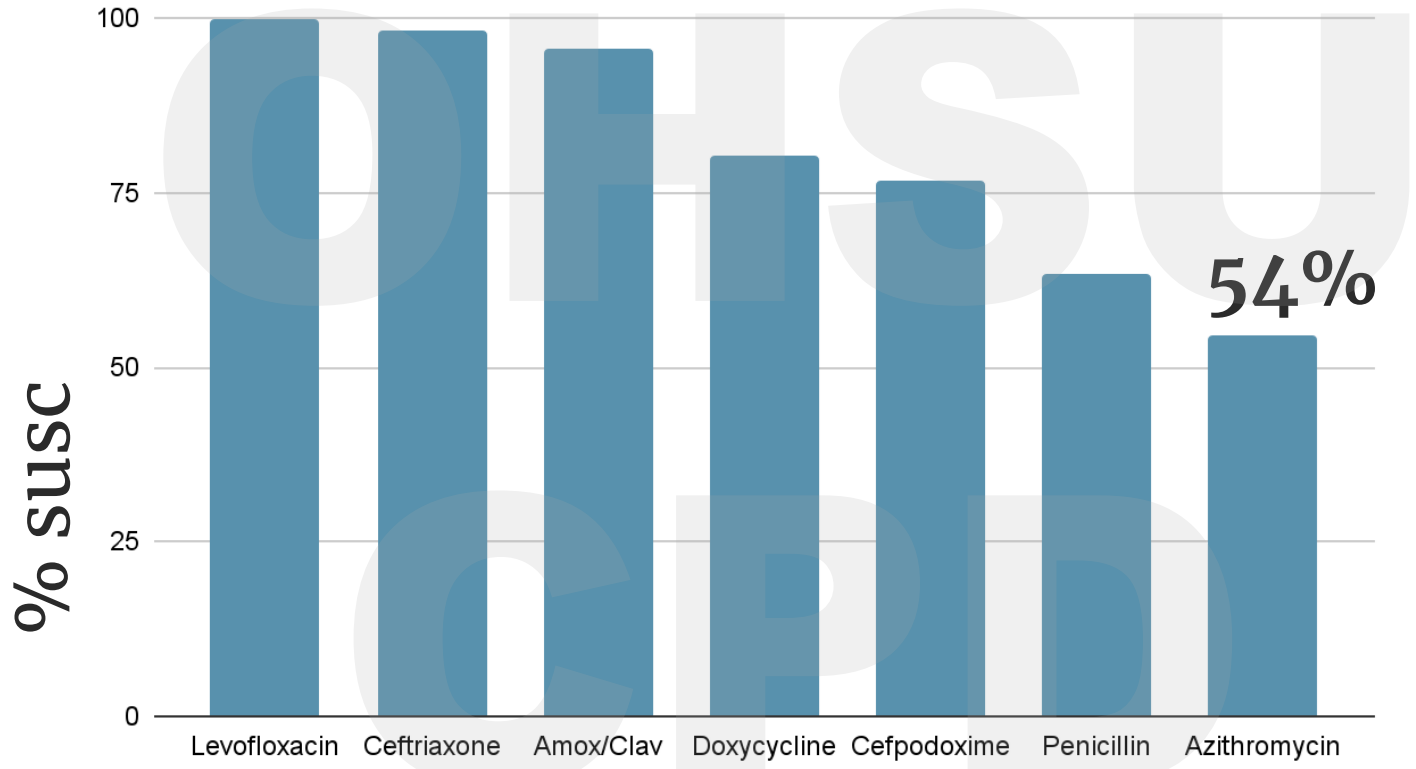
High Rates of Nonsusceptibility to Common Oral Antibiotics in *Streptococcus pneumoniae* Clinical Isolates From the United States (2019–2021)

Lalitagauri M. Deshpande, Michael D. Huband, Sarah Charbon, Mariana Castanheira, and Rodrigo E. Mendes

Element Iowa City (JMI Laboratories), North Liberty, Iowa, USA

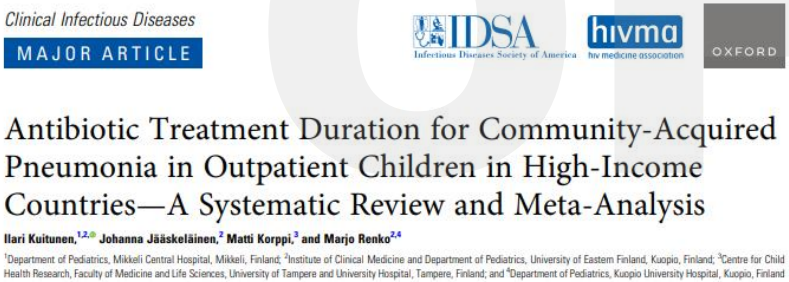
1038 *S pneumoniae* isolates recovered from patients in 31 US medical centers (32.1% pediatric)

What percentage were susc to Azithromycin?



Sept 2024 OFID

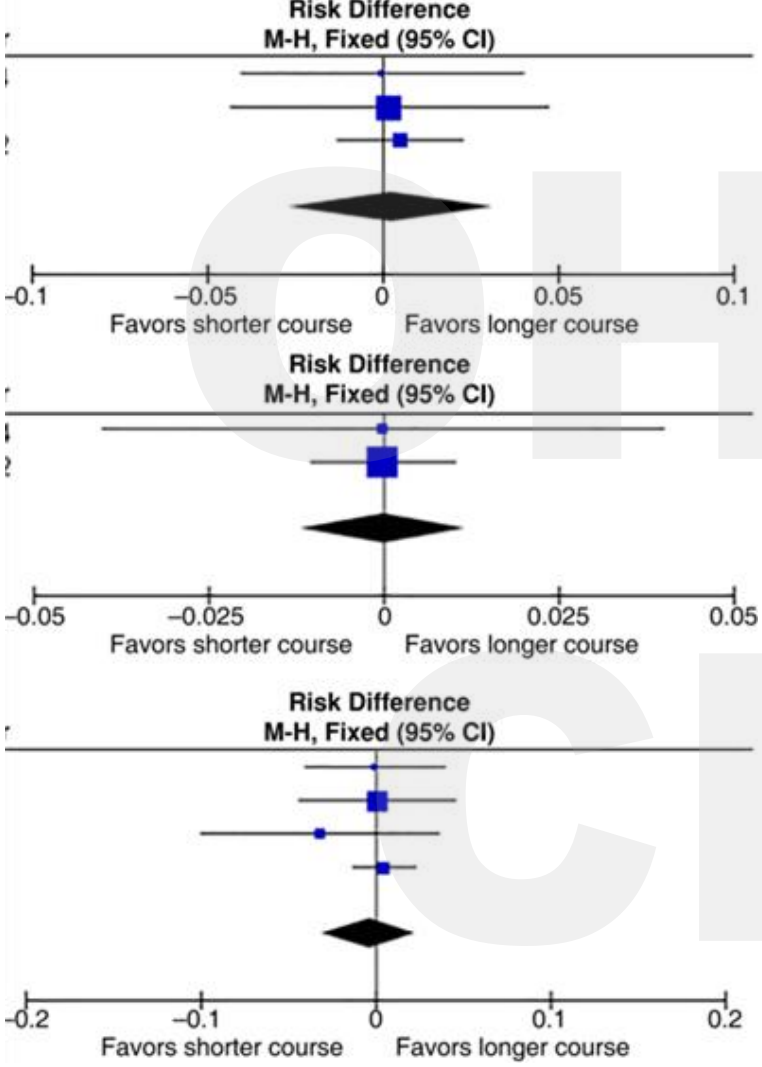
https://doi.org/10.1093/ofid/ofae470



Meta of kids 6mo and older treatment of outpatient CAP comparing short (3-5d) to longer (7-10d). Four studies included.

- Retreatment
- Hospitalization
- Failure(above combined)

10.1093/cid/ciac374



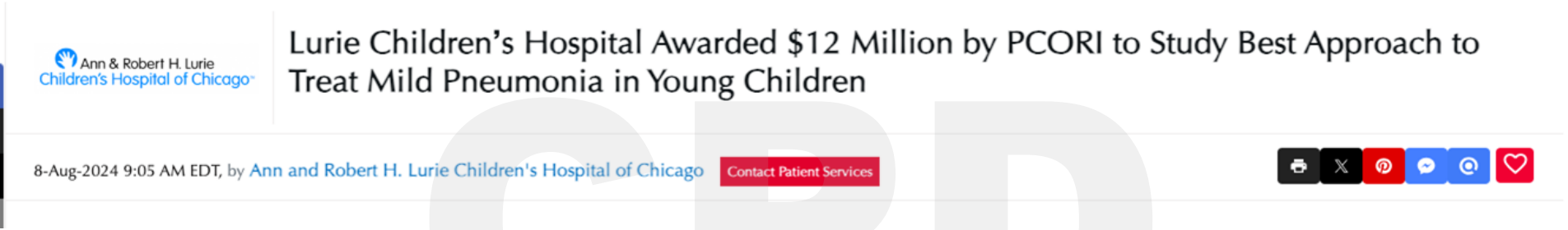
Retreatment

Hospitalization

Failure(both combined)

OHSU CPD

Immediate vs Safety Net Antibiotic Rx for pediatric CAP



Parent and Clinician Views on Not Using Antibiotics for Mild Community-Acquired Pneumonia

Julia E. Szymczak, PhD,[a] Ashley A. Hayes, BA,[b] Patricia Labellarte, MPH,[b] Julian Zighelboim, BA,[b] Amandeep Toor, MD,[b] Adam B. Becker, PhD,[b] Jeffrey S. Gerber, MD, PhD,[c] Nathan Kuppermann, MD, MPH,[d] Todd A. Florin, MD, MSCE[e]

Semi Structured interviews of parents of kids 1-6 with mild CAP and outpatient clinicians.

https://doi.org/10.1542/peds.2023-063782

Parents

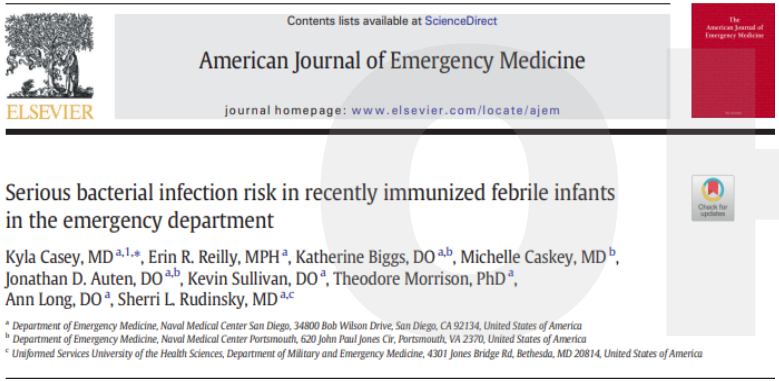
Positive	Mixed	Negative
Medication side effect Trust in clinicians Ability to return	Emotional experience of caring for a suffering child **Contingent on being offered another treatment to facilitate speedy symptom resolution** Feel like their child's clinician was withholding needed treatment	Their assessment of the child's course of illness, even if that assessment differed from the clinician's Perceived risks of unnecessary antibiotics are worth accepting; for example, "I'd rather take a diaper rash to labored breathing"

- Azithro sucks
- Short (5d) is fine for outpatient CAP
- More data for not treating on the horizon?

OHSU
CPD

Febrile Babies

OHSU
CPD



Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajem

Serious bacterial infection risk in recently immunized febrile infants in the emergency department

Kyla Casey, MD [a,1,*], Erin R. Reilly, MPH [a], Katherine Biggs, DO [a,b], Michelle Caskey, MD [b], Jonathan D. Auten, DO [a,b], Kevin Sullivan, DO [a], Theodore Morrison, PhD [a], Ann Long, DO [a], Sherri L. Rudinsky, MD [a,c]

[a] Department of Emergency Medicine, Naval Medical Center San Diego, 34800 Bob Wilson Drive, San Diego, CA 92134, United States of America
[b] Department of Emergency Medicine, Naval Medical Center Portsmouth, 620 John Paul Jones Cir, Portsmouth, VA 2370, United States of America
[c] Uniformed Services University of the Health Sciences, Department of Military and Emergency Medicine, 4301 Jones Bridge Rd, Bethesda, MD 20814, United States of America

6-12 weeks of age presenting to ED with temp of 38°

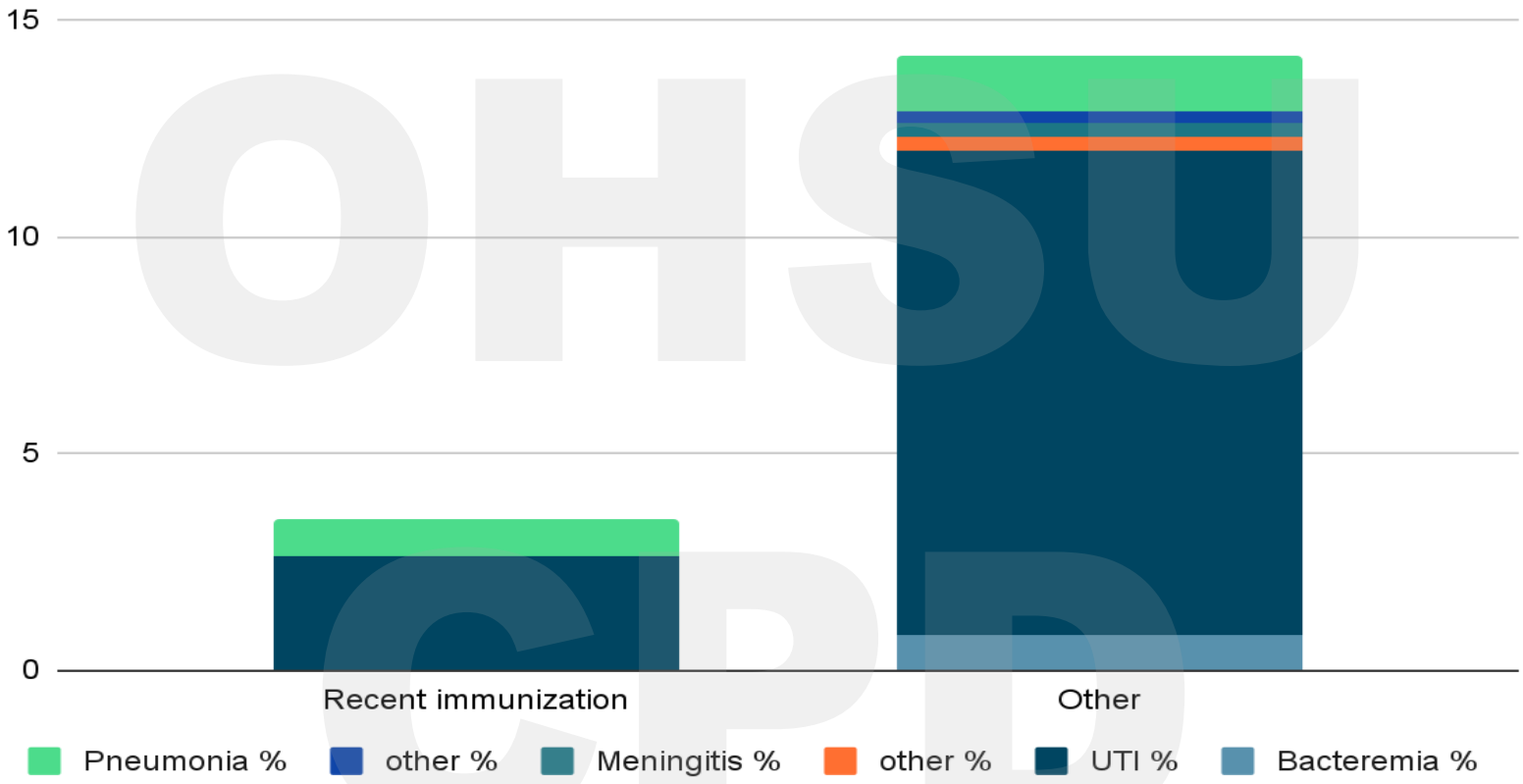
508 total and 114 recently immunized (72h).

Compare rates of SBI (IBI+UTI+PNA)
Overall rate 11.4%

What percentage had SBI in the recently vaccinated ?

Sept 2023 Am. J. Emerg. Med

https://doi.org/10.1016/j.ajem.2024.03.025



OHSU CPD

https://doi.org/10.1016/j.ajem.2024.03.025

New Guidelines

OHSU CPD

Received: 22 September 2023 | Accepted: 10 May 2024
DOI: 10.1002/jpn3.12314

JPGN

PRACTICE GUIDELINES

Updated joint ESPGHAN/NASPGHAN guidelines for management of *Helicobacter pylori* infection in children and adolescents (2023)

Matjaž Homan[1] | Nicola L. Jones[2] | Patrick Bontems[3] | Matthew W. Carroll[4] | Steven J. Czinn[5] | Benjamin D. Gold[6] | Karen Goodman[7] | Paul R. Harris[8] | Robert Jerris[9] | Nicolas Kalach[10] | Michal Kori[11] | Francis Megraud[12] | Marion Rowland[13] | Marta Tavares[14] | on behalf of ESPGHAN/NASPGHAN

Recommending **Against** non-invasive testing for H. pylori for:

- IDA
- Short stature
- Ethnic group with higher rates of gastric cancer
- Disorder of gut–brain interaction

Recommending **For** non-invasive testing for H. pylori for:

- Gastric cancer in first degree relative

OHSU CPD

10.1002/jpn3.12314

Should only cause symptoms if erosions.

Recurrent abdominal pain absent alarm symptoms likely DGBI independent of presence or absence of H. Pylori

Eradication not proven to help symptoms.

Non-invasive test might have harm like unneeded endoscopy

IF THERE ARE ULCERS GI will test and treat as treatment prevents recurrence

OHSU CPD

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Recommendations and Reports / Vol. 72 / No. 4
November 3, 2023

CDC Recommendations for Hepatitis C Testing Among Perinatally Exposed Infants and Children — United States, 2023

https://www.cdc.gov/mmwr/volumes/72/rr/pdfs/rr7204a1-H.pdf

BOX. CDC recommendations for hepatitis C testing among perinatally exposed infants and children — United States, 2023

- All infants and children born to pregnant persons with current or probable hepatitis C virus infection should be tested for hepatitis C.
  - Pregnant persons with detectable HCV RNA are considered to have current HCV infection. If anti-HCV testing is reactive and HCV RNA results are not available, pregnant persons are considered to have probable HCV infection.*
- Perinatally exposed infants should receive a NAT for HCV RNA at age 2–6 months to identify children in whom chronic HCV infection might develop.†
  - Infants with detectable HCV RNA should be managed in consultation with a health care provider with expertise in pediatric hepatitis C management.
  - Infants with undetectable HCV RNA do not require further follow-up.§
- Other considerations
  - Infants and children aged 7–17 months who have not previously been tested should receive a NAT for HCV RNA.
  - Children aged ≥18 months who previously have not been tested should receive an anti-HCV test with reflex¶ to NAT for HCV RNA.

Abbreviations: anti-HCV = hepatitis C virus antibody; FDA = Food and Drug Administration; HCV = hepatitis C virus; NAT = nucleic acid test.

*Because a pregnant person with a detectable HCV RNA test anytime during pregnancy (even if followed by an undetectable HCV RNA test) can potentially transmit HCV during the infectious period, the infant should be tested for HCV RNA. If no HCV test is available from pregnancy and the most recent NAT indicates detectable HCV RNA in the absence of treatment, a pregnant person is considered to have current HCV infection. Similarly, if no HCV test is available from pregnancy and the most recent anti-HCV test is reactive in the absence of an undetectable HCV RNA or treatment, a pregnant person is considered to have probable HCV infection.

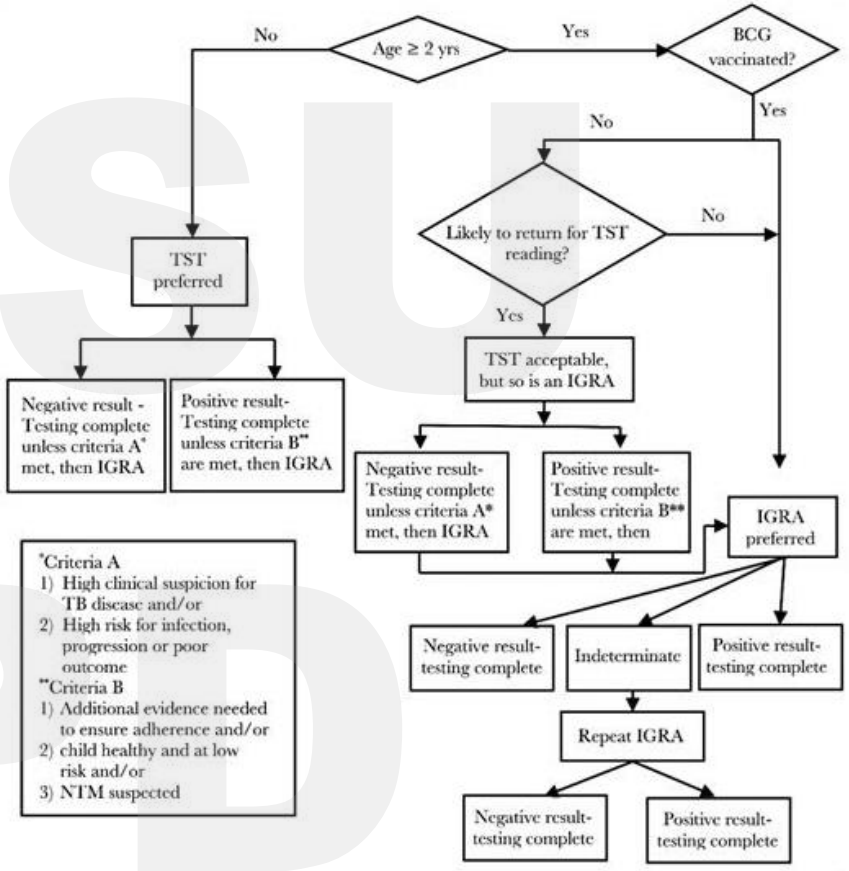
JOURNAL ARTICLE

Use of Interferon-Gamma Release Assays in Children <2 Years Old

Nicholas A Turner ✉, Amina Ahmed, Connie A Haley, Jeffrey R Starke, Jason E Stout

Journal of the Pediatric Infectious Diseases Society, Volume 12, Issue 8, August 2023, Pages 481–485, https://doi.org/10.1093/jpids/piad053

Published: 21 July 2023 **Article history** ▾



2021-2024 redbook ->

https://doi.org/10.1093/jpids/piad053

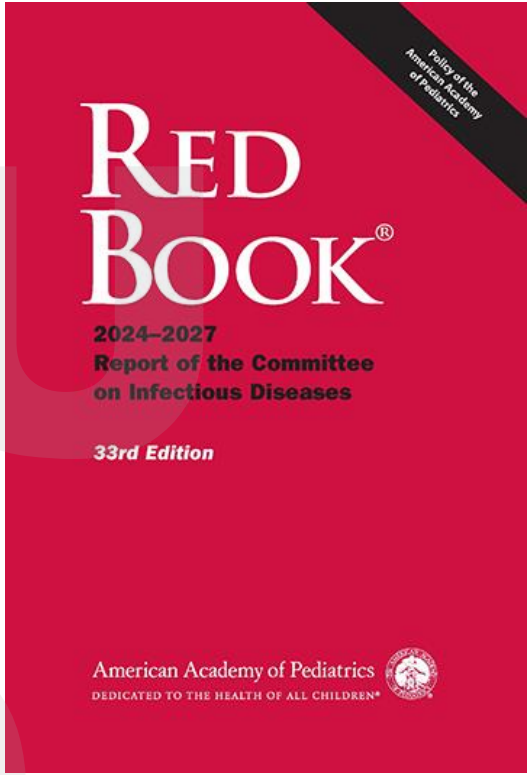
70 children in the US at risk (often foreign born or exposed) who were TST+ and IGRA- and untreated collected from four studies.

How many progressed to tuberculosis disease?

OHSU CPD

Children for whom immediate TST or IGRA is indicated[b]:

- Contacts of people with confirmed or suspected contagious tuberculosis (contact tracing)
- Radiographic or clinical findings suggesting TB disease
- Immigrating from countries with endemic infection
- Children with history of significant[c] travel to countries with endemic infection who have substantial contact with the resident population[d]



“IGRA is preferred for children who have received a BCG vaccine or who are unlikely to return for the TST reading.”

- Hep C in mom? screen baby with PCR 2-6mo.
- BCG vaccinated kid needs screened for latent TB? IGRA OK under 2 now.
- H pylori? …. Leave it to GI I guess

OHSU CPD