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Addressing the Social and Behavioral Drivers of Prescribing

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Faculty Disclosures

Julia Szymczak, PhD has no financial relationships to disclose relating to the subject matter of this presentation.

Rita Mangione-Smith, MD, MPH has no financial relationships to disclose relating to the subject matter of this presentation.

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Objectives

- To state what is known about the social, emotional, and cultural factors that drive the overuse of antibiotics
- To present examples of sociobehavioral interventions that work to improve how antibiotics are prescribed
- To highlight practical strategies to overcome barriers to implementing antibiotic stewardship across contexts

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How does a sociologist think about healthcare quality improvement?

Hospital as Small Society

- **Clinical work**
  - People working together *on* sick people
- **Behavior in healthcare organizations shaped by social dynamics of groups**
  - Conflict
  - Status inequality and hierarchy
  - Face-saving and emotion management
  - Identity work
  - Management of uncertainty and risk
- **Medical and healthcare workplaces have distinct cultures that shape decision making in order to achieve *social* goals (vs. biomedical ones)**

Technical vs. Adaptive Problems

- **Technical**
  - Equipment, tools, supplies
  - Valid measures
  - Guidelines and protocols
  - Technology
- **Adaptive**
  - Local context and culture
  - Emotions and psychology
  - Social and political dynamics
  - History
  - People's priorities, beliefs, habits and loyalties

Pronovost PJ. Navigating adaptive challenges in quality improvement. BMJ Qual Saf. 2011 Jul;20(7):560-3.

Why think of antibiotic use as a sociological phenomenon?

"If I see a patient a week after surgery, and there's still a little redness, and Mom's nervous I am inclined to just put the kid on the antibiotic. It just makes everyone comfortable, and then a week later, the redness is gone. Did I treat an infection or was there just some redness? Some inflammatory post-operative discharge? I don't know. I'm more careful about how I give antibiotics than I used to be in the past. You don't want to be part of the societal issue of creating superbugs, but it is surprisingly difficult to look Mom in the face when she is convinced it's infected and you're trying to say 'look, it's not infected,' when you don't even know for sure yourself and a week later it could pus out and Mom's like 'see? Should have put her on antibiotics. I can't believe you did this to my kid!' That is what you imagine the scenario being if you don't do something. It's so much easier to say 'look, we'll put her on a little antibiotic.'"

Pediatric General Surgeon

Szymczak (2013) *The Complexity of Simple Things: An Ethnographic Study of the Challenges of Preventing Hospital-Acquired Infections*

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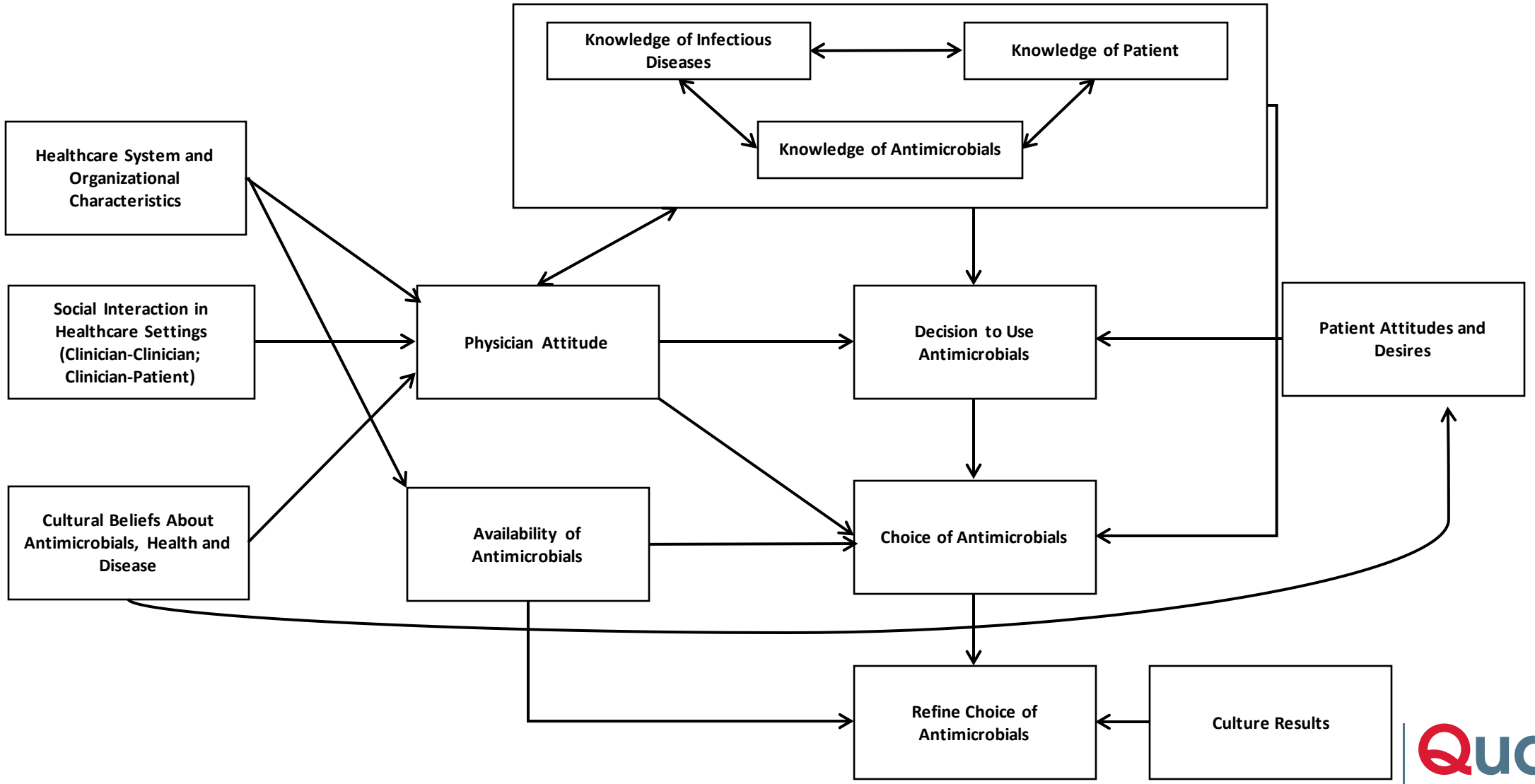
Prescribing is a Social Act

- **Means of communication – demonstrates concern**
- **Expresses power and facilitates social control**
- **Produces income**
- **A prescription is a tool to help clinician navigate practical social challenges of care delivery**
  - How to react to patient demands
  - How to project competence
  - How to manage uncertainty about cause/cure of sickness
  - How to end the clinical encounter

van der Geest et al. *Ann Rev Anthropology* 1996 (25): 153-178.

Conceptual Framework for Antibiotic Use



Szymczak, J.E. and J. Newland (2018). "The social determinants of antimicrobial prescribing: Implications for antimicrobial stewardship" in Barlam, T., Neuhauser, M., Tamma, P., & Trivedi, K. (Eds.). *Practical Implementation of an Antibiotic Stewardship Program*. Cambridge: Cambridge University Press.

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Social Determinants of Antibiotic Prescribing

1.) Relationships between clinicians

2.) Relationships between clinicians and patients

3.) Risk, fear, anxiety and emotion

4.) (Mis)perception of the problem

5.) Contextual and environmental factors

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Relationships Between Patients and Clinicians

Patient demand for unnecessary antibiotics[1,2,3]

- Don't want patient to go home empty-handed[4]
  - Fear of losing patients to other practices who use antibiotics more liberally
  - Fear of patients leaving bad reviews online – "Dr. Google is Forever"
- Explaining why antibiotics are unnecessary is unrewarding and time-consuming[5]
- Desire to avoid conflict[6]
- Overestimation of patient demand – prescribing on the basis of perceived rather than actual patient expectations[7-12]

(1) Bauchner et al. *Pediatrics* 1999:103, (2) Brookes-Howell et al. *BMJ Open* 2012:2, (3) Vazquez-Lago et al. *Fam Pract* 2012:29, (4) Butler et al. *BMJ* 1998:317, (5) Shapiro *Clin Ther* 2002:24, (6) Germeni et al. *Br J Gen Prac* 2018, (7) Mangione-Smith et al. *Pediatrics* 1999:103, (8) Stivers et al. *J Fam Pract* 2003:52, (9) Finkelstein et al. *Clin Pediatr (Phila)* 2014:53, (10) Szymczak et al. *JPIDS* 2017, (11) Mangione-Smith et al. *Arch Pediatr Adolesc Med* 2006:160, (12) Ong et al. *Ann Emerg Med* 2007:50

Risk, Fear, Anxiety, Emotion

Risk Perception and Discomfort with Uncertainty

- Perception that risk of under-treating > individual patient risk from receiving unnecessary antibiotics[1,2]
- Potential adverse effects of antibiotics have limited impact on decision-making[3,4]
- Uncertainty surrounding diagnosis– is it bacterial?[5]
- Fear of worst case scenario, prescribing "just to be safe," desire to avoid legal complications[6]

(1) May et al. *ICHE* 2014:35, (2) Bjorkman et al. *Qual Saf Health Care* 2010:19, (3) Livorsi et al. *ICHE* 2015: 36, (4) Klein et al. *JGIM* 2017 32(10): 1083-9, (5) Germeni et al. *Br J Gen Prac* 2018, (6) Szymczak, J.E. and J. Newland (2018). "The social determinants of antimicrobial prescribing: Implications for antimicrobial stewardship" in Barlam, T., Neuhauser, M., Tamma, P., & Trivedi, K. (Eds.). *Practical Implementation of an Antibiotic Stewardship Program*. Cambridge: Cambridge University Press.

Awareness and Exceptionalism

Clinician Perception About Their Role in Antibiotic Overuse

- Lack of awareness or disbelief that they prescribe inappropriately[1,2]
- Lack of systems for promoting accountability around the quality of antibiotic prescribing[3]
- "My patients are sicker" – clinical exceptionalism[2]
- Pointing to the role of others in causing the problem:

> *"Antibiotic overuse is a big problem, but pediatricians are probably the least offenders. Family practitioners, internists, ER doctors and the staff at urgent care or minute clinics, those are the greatest offenders."*
>
> -Interview, Primary Care Pediatrician[2]

(1) Dempsey et al. *BMC Fam Pract* 2014;15:194. (2) Szymczak et al. *ICHE* 2014 Oct;35 Suppl 3:S69-78. (3) Birgand et al. *Antimicrob Resist Infect Control* 2018; 7:28.

Contextual and Environmental Factors

What surrounds where care is delivered

- Time pressures - practice volume and throughput pressures discourage communication with patients[1]
- Time of day and decision fatigue[2]
- Time of the week and the "Friday prescription"[3]
- Competing priorities – patient satisfaction scores[4]
- Continuity of care – confidence in prescribing decisions through familiarity of what is "normal" for the patient[5]
- Social ecology of medical care in a region – patient expectations shaped by behaviors of others

(1) May et al. *ICHE* 2014:35, (2) Linder et al. *JAMA Internal Medicine* 2014 174(12):2029-31, (3) Brooks-Howell et al. *BMJ Open* 2012; 2:e000796, (4) Martinez et al. *JAMA Internal Medicine* 2018 Oct 1, (5) Ashdown et al. *BMJ Open* 2016;6(6):e011497

Patient Prescriber Relationship

- Comment on the role of patient level of trust in the treating physician
- Comment on the physician's role in providing information explaining why an antibiotic may not be indicated in viral illness and dangers of over prescribing (side-effects, adverse events, resistance, etc.)

References:

https://pubmed.ncbi.nlm.nih.gov/33543779/

https://pubmed.ncbi.nlm.nih.gov/32196870/

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Why should we care about the social determinants of antibiotic prescribing?

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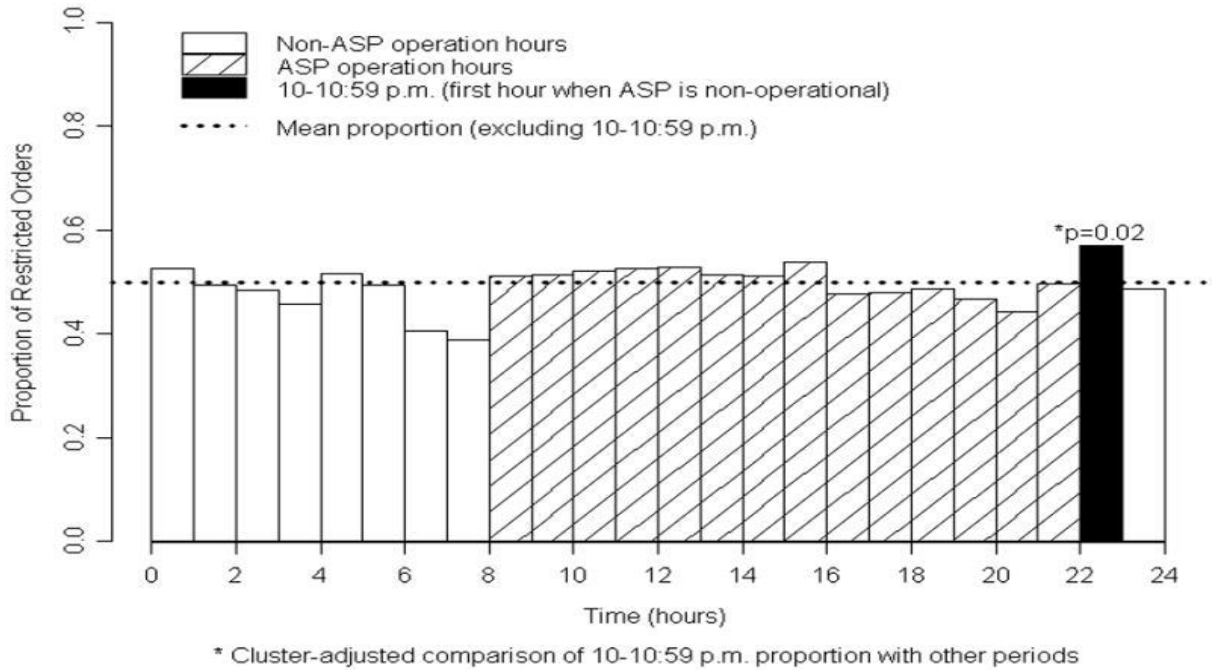
Implications for Antibiotic Stewardship

- Although interventions to improve antibiotic use have been successful to a degree, we can do better
  - Direct educational approaches generally do not result in sustained improvement
  - Restrictive policies can be circumvented
    - "Stealth dosing"
    - Misrepresenting clinical information
    - Combining non-restricted antibiotics to get desired coverage beyond AS recommendation



Linkin et al. ICHE 2007:28

(1) Arnold et al. Cochrane Database of Systematic Reviews 2005:4, (2) LaRosa et al. ICHE 2007:28, (3) Calfee et al. Jour Hosp Infec 2003:55, (4) Linkin et al. ICHE 2007:28, (5) Seemungal et al. ICHE 2012 33(4): 429-431 (6) Szymczak et al. ICHE 2014:35

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Implications for Antibiotic Stewardship

- Stewardship interventions have to consider the social and organizational context in which care is provided, the psychology of individuals (clinicians, patients) and the nature of their interactions

- The problem is multi-faceted, so a singular approach to solving it is not going to have the desired effect
  - Multi-part interventions are more effective that those with only one component[1]

(1) Van der Velden et al. *Br J Gen Pract* 2012:62:e801-7.

Implications for Antibiotic Stewardship

- For lasting change, clinicians and patients need to internalize **new social norms** surrounding antibiotic prescribing[1]
  - What is considered "prudent"
  - Antibiotics have an **image problem**
    - Adverse effects underappreciated
    - "I guess his ear does look a little red…"
  - Setting and managing expectations
  - Communication and interpersonal interactions
  - Supportive organizational environment for change

(1) Bosk et al. *Lancet* 2009:374)

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Sociobehavioral Antibiotic Stewardship Interventions That Work

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Antibiotic Stewardship in Outpatient Settings

Intervention	Considerations
Patient education	• The effectiveness of smaller scale interventions is uncertain • Mass media campaigns may be effective
Clinician education	• Active, in-person education is more effective than passive education • Factors that influence prescribing go beyond knowledge gaps, so education should be provided in combination with other interventions
Communication skills training	• Effective and has sustained benefits over time • May improve patient satisfaction • Effective elements of communication in conditions where antibiotics are not needed include: – Using both a negative and positive treatment recommendation – Providing a contingency plan
Diagnostics and point-of-care testing	• Can be useful in diagnosing bacterial causes – Accurate diagnosis decreases inappropriate use of antibiotics for viral infections • Diagnostic stewardship is needed for any intervention where diagnostics or point-of-care testing are used
Active monitoring and delayed prescribing	• Can reduce the use of antibiotics in conditions for which antibiotics are sometimes indicated • Guideline recommended for some conditions (acute otitis media in children and acute sinusitis) • Should never be used in conditions for which antibiotics are not indicated or are immediately indicated
Clinical decision support	• Evidence of effectiveness is mixed • Can range from low tech (such as printed clinical pathways) to high tech (integrated into electronic health record) • Low uptake can be a barrier to effectiveness – More effective if integrated into existing systems and easy to use
Audit and feedback plus peer comparison	• Peer comparison rooted in behavioral science • Effective in reducing inappropriate prescribing • Should provide an appropriate prescribing target (not mean) to prevent regression to the mean effect
Accountable justification	• Based in behavioral science • Effective in reducing inappropriate prescribing • Must be integrated into the electronic health record
Public commitment posters	• Based in behavioral science • Low cost, effective intervention • Intended to affect the clinician's behavior rather than the patient's – Should be placed in the examination room (not the waiting room) • Templates available from the US Centers for Disease Control and Prevention and some state health departments

- Communication skills training
- **Audit and feedback plus peer comparison**
- Accountable justification
- **Public commitment posters**

King et al. *BMJ* 2018;363:k3047

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Audit and Feedback with Peer Comparison

“You are a Top Performer”

You are in the top 10% of clinicians. You wrote 0 prescriptions out of 21 acute respiratory infection cases that did not warrant antibiotics.

“You are not a Top Performer”

Your inappropriate antibiotic prescribing rate is 15%. Top performers’ rate is 0%. You wrote 3 prescriptions out of 20 acute respiratory infection cases that did not warrant antibiotics.

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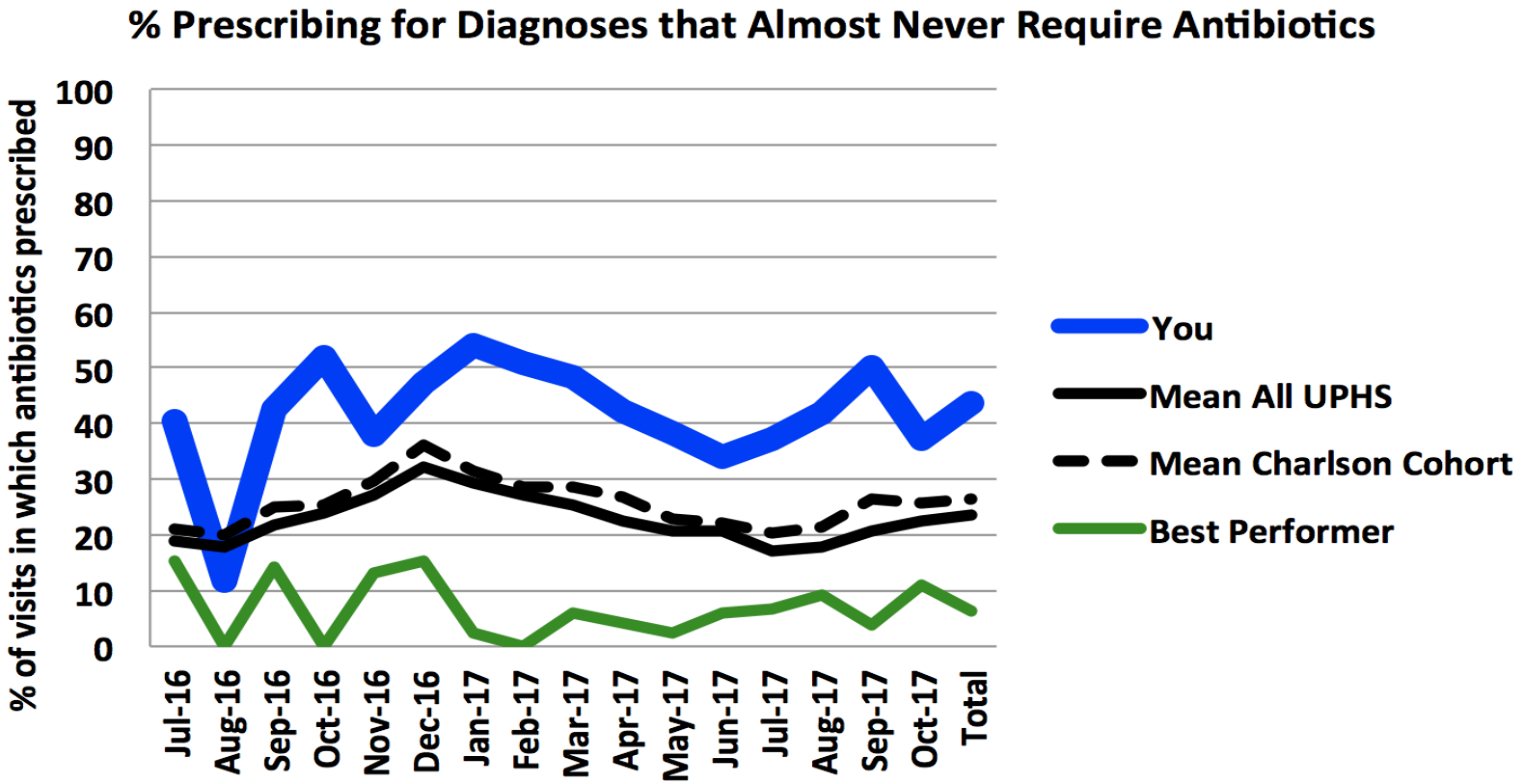
Meeker et al. *JAMA*. 2016;315(6):562-570.



You are in the **lowest performing** (4th) quartile of all prescribers for this metric.

Dutcher et al. *Clin Infect Dis* 2021 Jul 2

Public Health Ontario | Santé publique Ontario | SGFP

Tools and resources from: Choosing Wisely Ontario

November 23, 2018

Dr. Jane Smith
123 Family Doctor Ave.
Toronto, ON
M1N 2O3

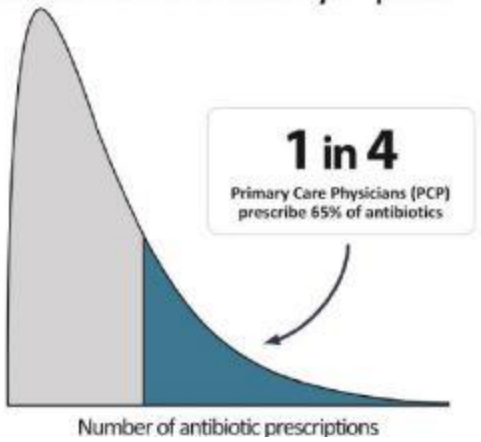
Dear Dr. Smith

Every day, family doctors like you are doing everything you can to help your patients become and stay healthy. Choosing when and how you prescribe antibiotics is a crucial decision-making step, especially during flu season. That's why we're writing to you personally, to support you in prescribing antibiotics appropriately for your patients.

Across care settings, research has shown that practice habits and expectations around antibiotic prescribing are leading causes of over-prescription. Knowing where each of us are on the spectrum of prescribing habits provides a chance to reflect and consider changes.

How you prescribe antibiotics compared to your peers

You are receiving this letter because you prescribe more antibiotics than 75% of your peers.



As context, it might be useful for you to be aware that **you're one of the 25% of primary care physicians who prescribe 65% of antibiotics.** Reviewing the reasons why that may be happening, and considering how unnecessary prescriptions can be avoided are important ways to improve the health of your patients. Enclosed, you'll find tools and information to help reduce antibiotics safely.

Schwartz et al. *JAMA Intern Med.* 2021;181(9):1165-1173.

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Audit and Feedback with Peer Comparison

- Well-studied and widely used outpatient antibiotic stewardship strategy[1]

- Has been demonstrated to reduce inappropriate antibiotic prescribing in outpatient settings
  - Variation in impact across studies[2,3,4,5,]
  - Impact not always sustained[6,7]

(1) Avent et al *BMC Family Practice* 2020, (2) Meeker et al. *JAMA* 2016, (3) Guilliford et al. *BMJ* 2019, (4) Hemkens et al. *JAMA Intern Med* 2017, (5) Hallsworth et al. *Lancet* 2016;315(6):562-579, (6)Gerber et al. *JAMA* 2014, (7) Linder et al. *JAMA* 2017

Why does Audit and Feedback with Peer Comparison Work?

- Provides people with information about social norms
  - People might change their behavior to conform with social norms when[1]
    - They want to fit in
    - They are perceived to be a useful source of information (especially in ambiguous situations)
    - They identify with the group exhibiting the norm

- Hawthorne Effect

(1) Reynolds *Nature Human Behavior* 3, 14-15 (2019)

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Changing Social Norms Through Public Commitment

Original Investigation

Nudging Guideline-Concordant Antibiotic Prescribing
A Randomized Clinical Trial

Daniella Meeker, PhD; Tara K. Knight, PhD; Mark W. Friedberg, MD, MPP; Jeffrey A. Linder, MD, MPH; Noah J. Goldstein, PhD; Craig R. Fox, PhD; Alan Rothfeld, MD; Guillermo Diaz, MD; Jason N. Doctor, PhD

JAMA Intern Med. 2014:174(3):425-431

- RCT of behavioral intervention to encourage the judicious use of antibiotics for acute respiratory infections
- 5 outpatient primary care clinics in Los Angeles
- Intervention = display of poster-size commitment letters in exam rooms for 12 weeks

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Your health is important to me.

That's why I'm signing the "Get Smart Guarantee."

Antibiotics don't work for viral infections like the common cold, most coughs, and most sore throats. Taking antibiotics when they don't work can do more harm than good by causing stomach upset, diarrhea, or allergic reactions.

I guarantee I will do my best to prescribe antibiotics only when you need them.

Antibiotics can be life-saving, but bacteria are becoming more resistant. If we're not careful about how we prescribe and use the antibiotics we've relied on for years, they might not work for us in the future.
To learn more visit: cdc.gov/getsmart.

Signature(s) _____

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NEW YORK STATE | Department of Health

10/16

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Table 4. Changes in Adjusted Rates[a] of Inappropriate Antibiotic Prescribing for ARIs

Characteristic	Poster Condition		Control Condition	
	Baseline	Final Measurement	Baseline	Final Measurement
Inappropriate prescribing rate, % (95% CI)	43.5 (38.5 to 49.0)	33.7 (25.1 to 43.1)	42.8 (38.1 to 48.1)	52.7 (44.2 to 61.9)
Absolute percentage change, baseline to final measurement (95% CI)	−9.8 (0.0 to −19.3)		9.9 (0.0 to 20.2)	
Difference in differences between poster condition and control (95% CI)	−19.7 (−5.8 to −33.04)[b]			

Abbreviation: ARI, acute respiratory infection.

[a] Adjusted for demographic characteristics and insurance status.

[b] P=.02 for the difference.

Why does the Commitment Poster Work?

- It was informed by a sociobehavioral theory of how humans act
- Individuals who make public commitments to specific behaviors are more likely to follow through with those expressed intentions
  - Increasing participation in hotel towel recycling programs
  - Boosting philanthropy
  - Enhancing voter turnout
- Two psychological factors drive the effectiveness of public commitment
  - People place a high value on consistency and follow through with their public commitments to avoid disapproval by their peers
  - Publicly committing to a behavior causes people to identify the behavior with their self-image, which enhances personal dedication to performing that behavior

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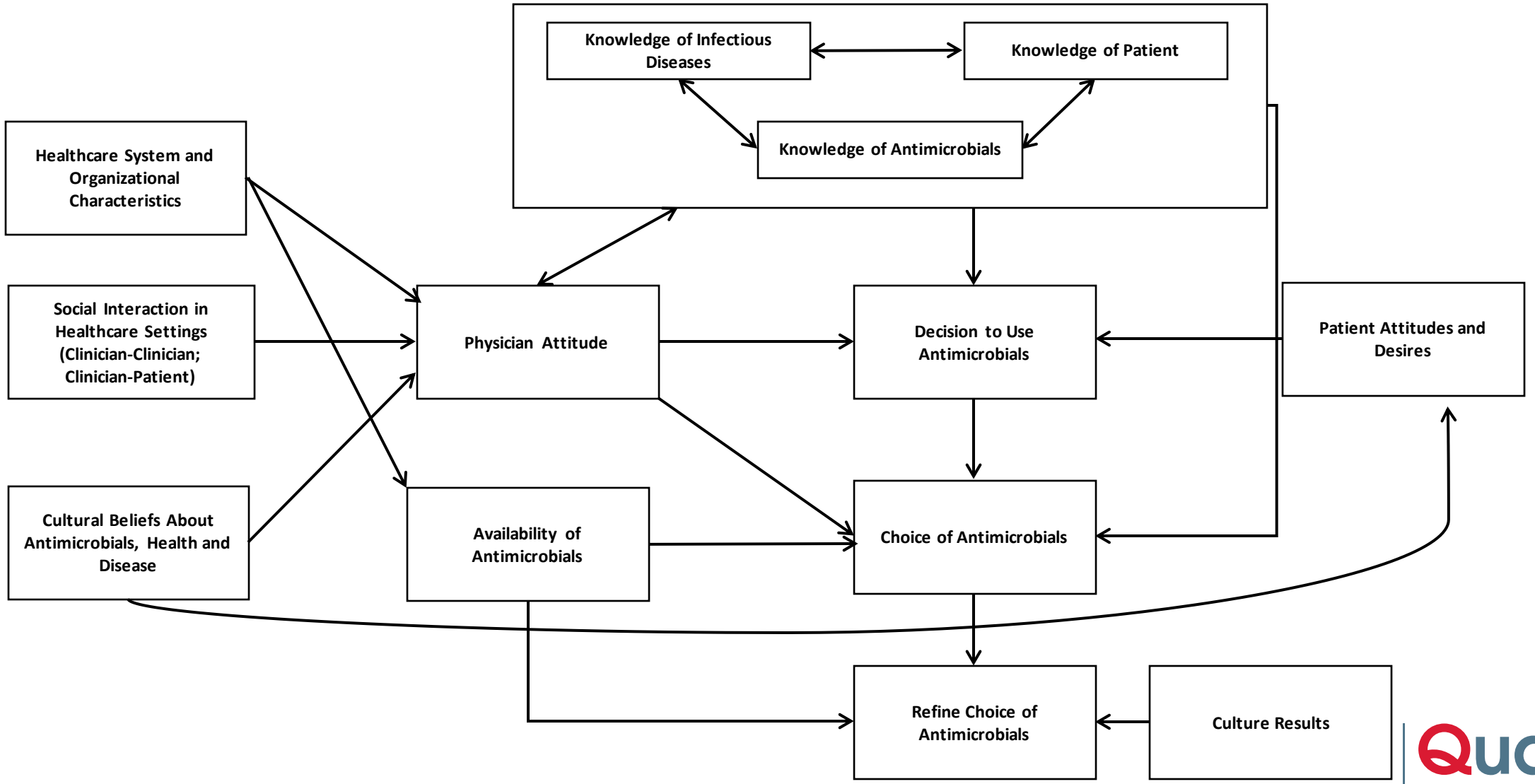
Deciding Where to Start and How to Implement: Figuring out Why

- Investigate motivations of those who need to change how they do something
  - Reinterpret resistance and recalcitrance
  - How do those that resist define the problem?
  - Try to understand what is at stake surrounding behavior that is target of change and what people want to preserve
- Investigate barriers to change
  - Match strategies to barriers

[1]Saint et al. Jt. Comm J Qual Patient Saf. 2009 35(5): 239-46; [2]Pronovost BMJ Qual Saf 2011(20):560-563

Conceptual Framework for Antibiotic Use



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Barrier	Strategy
Lack of updated knowledge on evidence-based prescribing guidelines	•Conduct trainings •Distribute educational materials
Lack of knowledge or belief that one over-prescribes	•Audit and feedback of prescribing performance with peer comparison
Antibiotic stewardship is not seen as a priority by the frontline	•Identify local champions •Secure leadership support •Alter incentive structures •Obtain public commitment •Communicate harms creatively
Forgetfulness	•Clinical decision support prompts •Prospective audit and feedback •Engage diverse stakeholders to participate (pharmacists, nurses, even patients/families)
Communication difficulties	•Communication training and simulation

Livorsi DJ, Drainoni ML, Reisinger HS, Nanda N, McGregor JC, Barlam TF, Morris AM, Szymczak JE. Leveraging implementation science to advance antibiotic stewardship practice and research. Infect Control Hosp Epidemiol. 2021 Dec 2:1-8. doi: 10.1017/ice.2021.480.

Design and Implementation Details Matter

Fox et al. *BMJ* 2020;370:m3256

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Cautionary Tales in Stewardship Implementation

- When stewardship interventions that worked in one place don't work in another
  - Audit and Feedback with Peer Comparison[1]
  - Commitment Posters[2,3]

- To avoid this
  - Consider fidelity to original intervention protocol, including both design and implementation details
  - Remember the theorized mechanism by which the intervention is thought to work to change behavior and design for that

(1) Hemkens et al. *JAMA Intern Med* 2017, (2) Sallis et al. *Antibiotics* 2020, 9(8), 490, (3) Kullgren et al. *BMJ Qual Saf* 2018 May;27(5):355-364

A Commitment to Our Patients about Antibiotics

What we will do as your healthcare team

Your health is important to us. When you have an illness, we promise to provide the best possible treatments for your condition. If an antibiotic is not needed, or would do more harm than good, we will explain this to you and offer other treatments that are better for you.

Antibiotics only fight infections caused by bacteria

- Antibiotics don't work for viral infections like the common cold, most coughs, and most sore throats.
- If you're sick from a virus and you take antibiotics, you won't get better and you could get bad side effects.
- Antibiotics should only be taken when necessary.
- Buying medications that won't help you is a waste of your money.

Problems with using antibiotics

Antibiotics make bacteria more resistant and can make future infections harder to treat.

Side effects include:

- Drug-resistant infections ("superbugs")
- Skin rashes
- Diarrhea (including *C.difficile* which can be serious and difficult to treat)
- Yeast infections

What should you do?

- If you get an antibiotic, take it as prescribed.
- If you don't get an antibiotic but think you need one, discuss your concerns with us.

Our promise

As your healthcare team, we promise to provide the best possible treatments for your condition. We are dedicated to prescribing antibiotics only when they are needed, and we will avoid giving them to you when they might do more harm than good.

If you have any questions, please feel free to ask your doctor, nurse, or pharmacist.

Clinic Picture Here

Clinic Name Here

Clinic Logo Here

Recommendations for using antibiotics in dentistry have changed

Many patients with heart conditions or prosthetic joints no longer require antibiotics before procedures

Dear Patient,

I want to give you some important information about antibiotics:

Antibiotics can save lives but they only work on bacteria, not viruses or any other type of germs.

If you take antibiotics when you don't really need them, they can cause more harm than good

- ✓ **You can get diarrhea, rashes or yeast infections**
- ✓ **Antibiotics may NOT work when you need them**

antibiotics make bacteria more resistant to them, this can make future infections harder to treat

As a patient:

- Do not pressure your dentist to give you an antibiotic when antibiotics are not necessary
- Ask how some oral infections can be treated without antibiotics
- Tell your dentist if you have had any serious side effects or allergic reactions to antibiotics in the past
- Ask your dentist if a shorter duration of antibiotics is appropriate

As your dental provider, I promise to give you the best care possible

I am dedicated to avoiding prescribing antibiotics when they are likely to do more harm than good

Please feel free to ask me if you have any questions

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Your health is important to me.

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Antibiotics don't work for viral infections like the common cold, most coughs, and most sore throats. Taking antibiotics when they don't work can do more harm than good by causing stomach upset, diarrhea, or allergic reactions.

I guarantee I will do my best to prescribe antibiotics only when you need them.

Antibiotics can be life-saving, but bacteria are becoming more resistant. If we're not careful about how we prescribe and use the antibiotics we've relied on for years, they might not work for us in the future.
To learn more visit: cdc.gov/getsmart.

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Safe antibiotic use:

An important message from your providers

To our patients,

Here is some important information about antibiotics:

- **Antibiotics only fight infections caused by bacteria.**
- **Antibiotics will NOT help you feel better if you have a viral infection such as:**
  - A cold or runny nose
  - Bronchitis or a chest cold
  - Flu.
- **If you take antibiotics when you don't really need them, they can cause more harm than good:**
  - You might feel worse.
  - You can get diarrhea, rashes or yeast infections.
  - You might get an infection later that is harder to treat because it has become resistant to antibiotics.

How can you help? Talk to me about the best treatment for you. Follow the plan we discuss.

As your health care provider, I will give you the best care possible. I am dedicated to not prescribing antibiotics when they are likely to do more harm than good. If you have any questions, please ask me, your nurse or your pharmacist.

Sincerely,

Steven Alles, MD,MS
Director, Division of Disease Control

Susan Coffin, MD,MPH
Medical Director, HAI/AR Program

Jane Gould, MD
Medical Epidemiologist, HAI/AR Program

Department of Public Health CITY OF PHILADELPHIA LIFE · LIBERTY · AND YOU

Oregon Health Authority

AWARE Oregon Alliance Working for Antibiotic Resistance Education

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Considerations When Implementing the Commitment Poster

1. Think twice about omitting the signature and the photo

2. Think about why the poster worked and what you might need to do at your site to ensure conditions facilitate that
   - Peer approval
   - Professional identity and clinician sense of self
   - Shared awareness between clinician and patient of what is to be expected, "this is just what we do here"

Considerations When Implementing the Commitment Poster

3. Think about the context in which the poster is hung
   - Beware "sign blindness"
   - Hang in the exam room, NOT the waiting room

4. Think about possible **adaptive challenges** to implementing the commitment poster and how you'd address them
   - A physician does not want to put their photo on a poster
   - A practice manager objects to hanging the poster in the exam rooms and would prefer the poster is hung on a bulletin board with many other posters
   - An administrator of a system with an urgent care clinic doesn't want the commitment posters hung in the urgent care setting because she is worried about losing business

KEY TAKEAWAYS

Antibiotic prescribing is a sociobehavioral phenomenon

- Antibiotic overuse is not simply caused by lack of knowledge or lack of belief in guidelines - social, emotional, environmental and cultural factors are at play
- Interventions that are sociobehaviorally-informed are more successful than those that are not

Implementation details matter in antibiotic stewardship

- Don't over-focus on the tool, remember the people and the context in which they are embedded
- Always plan for adaptive challenges

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Dialogue Around Respiratory Illness Treatment

Optimizing Communication During Visits for Acute Respiratory Infection

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Research Institute

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Objectives

1. Briefly review what we know from prior research

2. View and discuss video examples of key communication strategies

3. Questions and Answers

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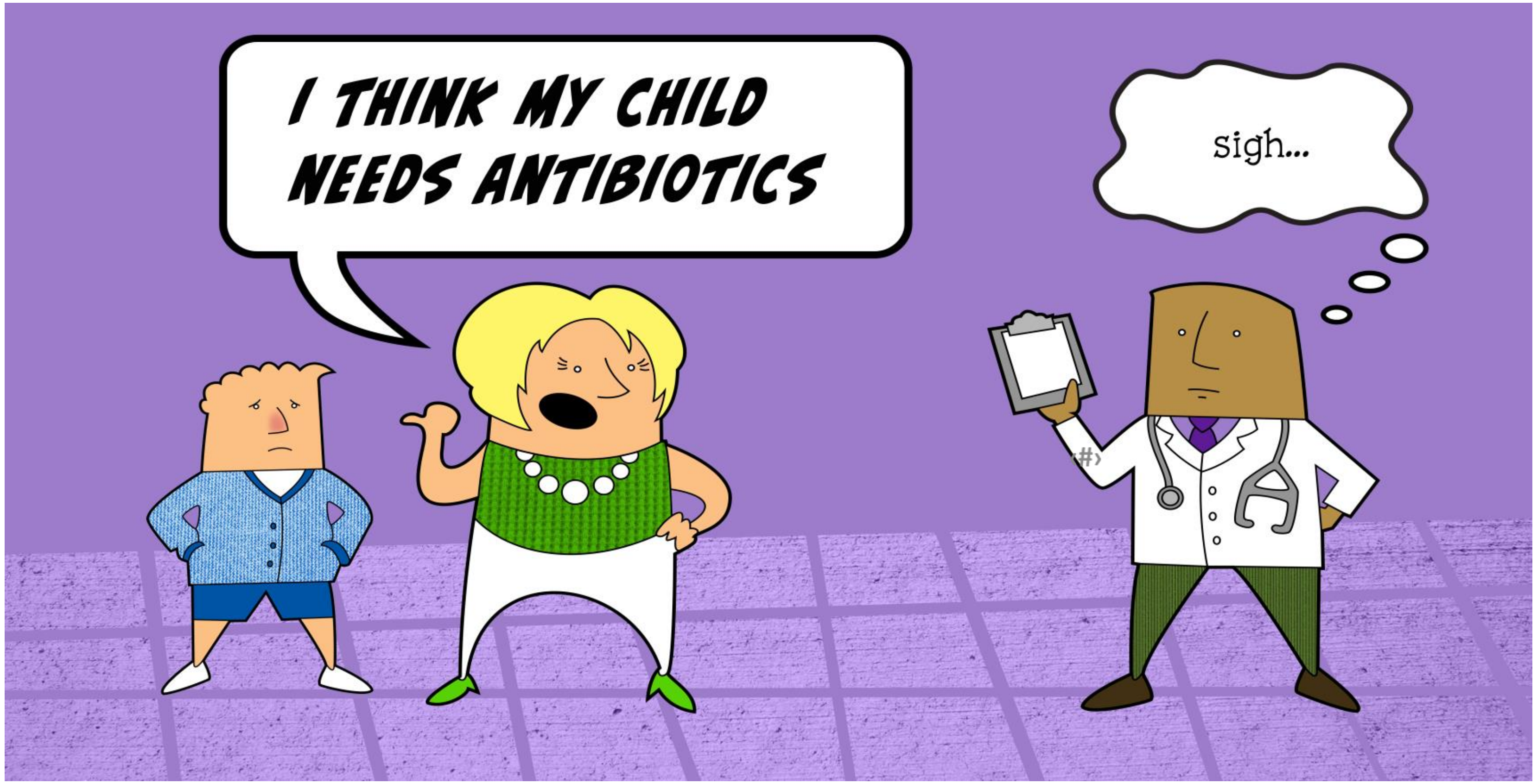
What we know from prior research



3. There are effective communication techniques that we can use to successfully manage this pressure to prescribe and at the same time maintain satisfaction with care

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What does prior research tell us?

- Many parents expect antibiotics for their child's ARTI, but rarely directly ask for them
  - Managing those expectations to avoid unwarranted prescribing is important

- Parents commonly use indirect communication practices that lead us to perceive them as expecting antibiotics

- *Perceiving* that the child's parent expects to receive antibiotics *is a key driver of unwarranted prescribing*

- It's important to understand what parent communication practices drive us to perceive them as wanting antibiotics

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How do parents *indirectly* communicate expectations for antibiotics?

Understanding Parent Communication

- Parent expectations for antibiotics affect how they communicate during visits
- One place where parents indirectly communicate their expectations for antibiotics is during the presentation of their child's problem
- One type of problem presentation a parent may use when they expect antibiotics is offering a Candidate Diagnosis

Stivers, *J Fam Pract* 2003

Candidate Diagnosis Presentation

- The Candidate Diagnosis can be ***explicit:***
  - The parent actually names a potential diagnosis:

    "I'm really worried that she might be coming down with bronchitis.."

- Or ***implicit***:
  - The parent describes symptoms in a way that implies a particular diagnosis:

    "The stuff coming out of her nose just won't quit and it's getting really thick and green."

  - The parent asserts that someone else in the family, or at school, has been diagnosed with a "sinus infection" or has "strep throat":

    "I've heard that a bunch of kids in his class have been out sick with strep throat."

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Candidate Diagnoses Signal the Need to Manage Expectations for Antibiotics

- A parent who uses a candidate diagnosis is ***25% more likely*** to expect antibiotics for their child
- There are communication practices you can use to successfully manage these expectations
- How your treatment recommendations are structured is key!

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Key communication practices for managing parent expectations:

#1) Review your PE findings

#2) Deliver a clear diagnosis

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Making the case for your diagnosis is important

- When you perceive parents as expecting antibiotics for their child, you can decrease unwarranted prescribing by:

  #1) Reviewing your physical examination findings

  "His ears look good, and his lungs sound great - so no ear infection or signs of pneumonia. His nose is pretty congested though and his throat is a little red, but nothing concerning for strep."

  #2) Delivering a clear diagnosis

  "So, what we have here is a really bad cold."

Key communication practices for managing parent expectations:

#3) Use a two-part negative/positive treatment recommendation

Treatment Recommendations: What does the Evidence tell us?

Two main ways that we tend to make treatment recommendations during visits for ARTI:

1) Negative treatment recommendations that 'rule out' the need for antibiotics:

   "This is just a cold, nothing an antibiotic will touch."

2) Positive treatment recommendations for symptom relief:

   "Raising the head of her bed will help with the drainage from her nose when she's sleeping so she won't cough so much."

Stivers, *Soc Sci Med* 2005

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Treatment Recommendations: What does the evidence tell us?

- Parents generally expect to get advice on how their child's symptoms can be treated
  - Parents are frustrated when the provider ***only recommends that no treatment is needed***

- ***On their own, negative treatment recommendations*** increase parent questioning of the treatment plan
  - Shifting provider decision-making into provider-parent negotiation
  - Increasing the probability of unwarranted prescribing

- Parent questioning of the treatment plan
  - Extends the visit length, by forcing providers to re-explain why antibiotics are not needed

Treatment Recommendations: What does the Evidence tell us?

- *When combined, a negative treatment recommendation followed by a positive one:*
  - Is associated with a ***40% decrease*** in prescribing antibiotics for viral ARTIs
  - Has the strongest association with higher parent satisfaction
  - Leads to shorter visit lengths

- A win-win outcome!

- How you structure your treatment recommendation is key

Kronman, *Pediatrics* 2020
Mangione-Smith, *Ann Fam Med* 2015

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How Treatment Recommendations are Structured is Key

- The tendency for parents to question the treatment plan is more likely to happen in two cases:
  1. When the provider ***only presents a negative treatment recommendation***
  2. When the provider ***starts with a positive*** recommendation and ***ends with a negative*** recommendation

- How you lay out the overall treatment recommendation is important
  - We recommend ***always leading with a negative and ending with a positive treatment recommendation***

Stivers, *Soc Sci Med* 2005

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How Treatment Recommendations are Structured is Key

- It's important not to provide an open space for parents to respond to the negative part of your treatment recommendation

- How can you prevent this from happening?
  - By using the following type of structure:
    - "**On the one hand** antibiotics won't help him get better" {negative treatment recommendation}
    - "**On the other hand**, there are lots of things you can do to help with his symptoms like giving him a teaspoonful of honey before bedtime to help with the cough…." {positive treatment recommendation}

- This structure decreases the likelihood parents will interrupt and question the negative recommendation

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Key communication practices for managing parent expectations:

#4) Providing a contingency plan

Provider Communication and Parent Satisfaction

Parents are more satisfied with their child's visit when the provider outlines a *Contingency Plan*

- *Contingency Plans* involve indicating that if the child doesn't improve in the next few days, the parent should re-contact you and the treatment plan may change

- Re-contact can be via telephone or a return visit

> *"Definitely call me if she starts having high fevers or is having a hard time catching her breath. I don't expect that to happen, but that's what you should watch for."*

Mangione-Smith, *Arch Pediatr Adolesc Med* 2001

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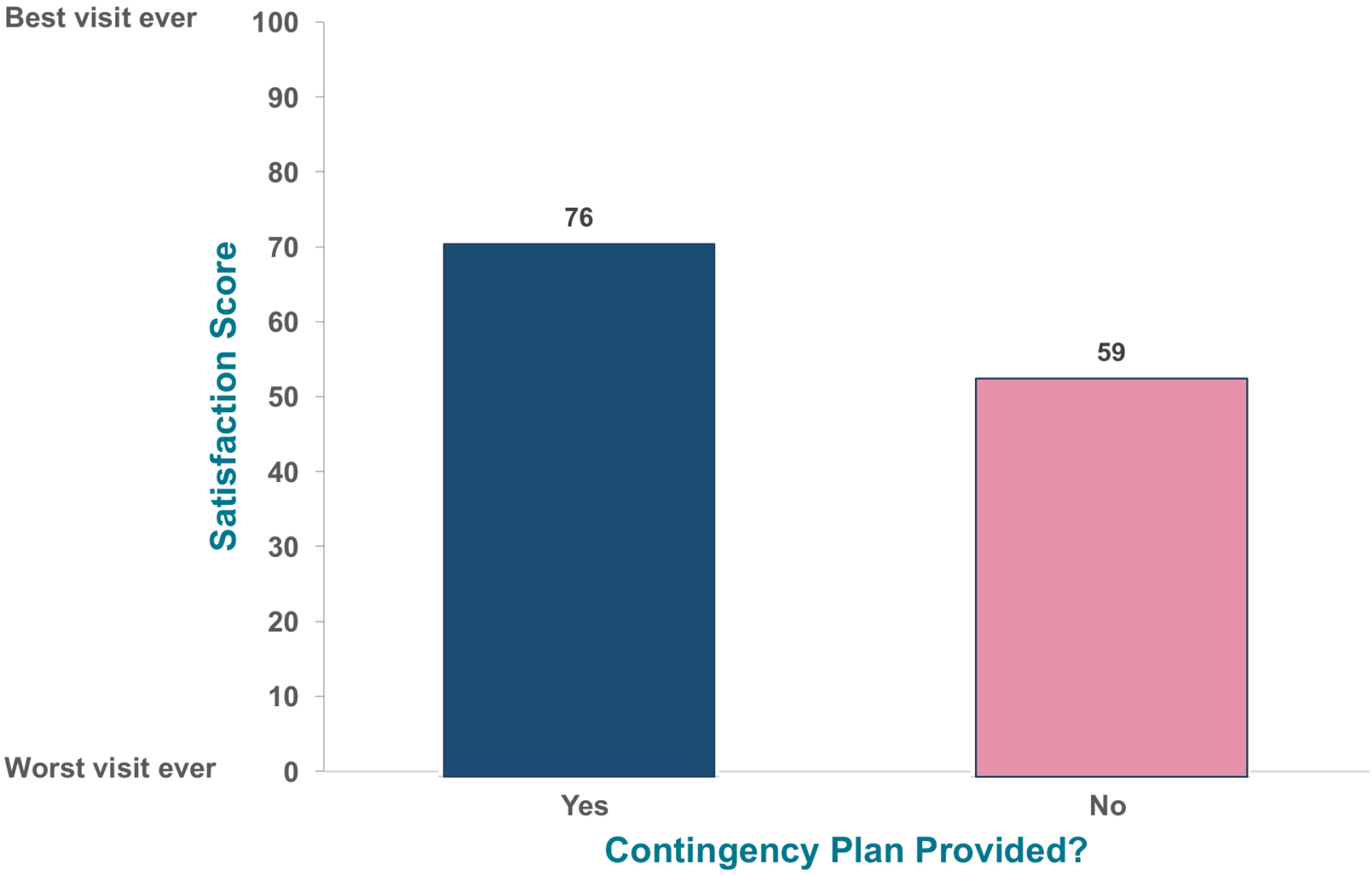
When You Don't Provide Antibiotics Contingency Plans Increase Satisfaction with Care



Mangione-Smith, *Arch Pediatr Adolesc Med* 2001

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Video Example #1:

What happens when you only give a negative treatment recommendation?

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Video Example 1: Only giving a negative treatment recommendations

DOC: So he's got a virus.

Vague diagnosis

Video Example 1: Only giving a negative treatment recommendations

DOC: So he's got a virus. **Not much we can do about that.**

<u>Only</u> provides a Negative Treatment Recommendation

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Video Example 1: Only giving a negative treatment recommendations

DOC: So he's got a virus. Not much we can do about that.

MOM: **But don't you think it might be bronchitis? His cough is so chesty.**

Mom challenges the treatment plan by questioning the diagnosis

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Video Example 1: Only giving a negative treatment recommendations

DOC: So he's got a virus. Not much we can do about that.
MOM: But don't you think it might be bronchitis? His cough is so chesty.
DOC: Even if it is, antibiotics won't help. You just have to wait it out.

Doctor hears candidate diagnosis as an indirect request for antibiotics & Provides a second, stand-alone Negative Treatment Recommendation

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Video Example 1: Only giving a negative treatment recommendations

DOC: So he's got a virus. Not much we can do about that.
MOM: But don't you think it might be bronchitis? His cough is so chesty.
DOC: Even if it is, antibiotics won't help. You just have to wait it out.
MOM: Hmmm. That's interesting. Whenever I have bronchitis going on, my doctor prescribes an antibiotic. So I'm a little surprised to hear you say that.

Mom continues to question/challenge the treatment plan

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Video Example 1: Only giving a negative treatment recommendations

DOC: So he's got a virus. Not much we can do about that.
MOM: But don't you think it might be bronchitis? His cough is so chesty.
DOC: Even if it is, antibiotics won't help. You just have to wait it out.
MOM: Hmmm. That's interesting. Whenever I have bronchitis going on, my doctor prescribes an antibiotic. So I'm a little surprised to hear you say that.

DOC: Well it can be a different process in adults, but even for adults, antibiotics really don't help.
MOM: So there isn't anything we can do to help with this terrible cough? I mean he really isn't sleeping very well.

This cycle continues and escalates:

1. **Wastes time**
2. **Leads to negotiation**
3. **Leaves parents dissatisfied**

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Video Example #2:

What happens when you give a positive treatment recommendation first?

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Video Example 2: Starting with a positive treatment recommendation

DOC: **What I want you to do to make her more comfortable is to give her some Children's Advil every 6 to 8 hours – that'll help with the muscle aching. I also want you to give her some herbal tea with about 1 teaspoonful of honey to help with the cough. Keep that up for the next 2-3 days and I expect that'll be when she will start feeling more herself.**

Positive Treatment Recommendation

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Video Example 2: Starting with a positive treatment recommendation

DOC: What I want you to do to make her more comfortable is to give her some Children's Advil every 6 to 8 hours – that'll help with the muscle aching. I also want you to give her some herbal tea with about 1 teaspoonful of honey to help with the cough. Keep that up for the next 2-3 days and I expect that'll be when she will start feeling more herself.

MOM: Okay, we'll give that a try. Should I keep her home from school?

DOC: That might be sensible while she's dealing with the symptoms.

Mom pursues treatment with a procedural question

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Video Example 2: Starting with a positive treatment recommendation

DOC: What I want you to do to make her more comfortable is to give her some Children's Advil every 6 to 8 hours – that'll help with the muscle aching. I also want you to give her some herbal tea with about 1 teaspoonful of honey to help with the cough. Keep that up for the next 2-3 days and I expect that'll be when she will start feeling more herself.

MOM: Okay, we'll give that a try. Should I keep her home from school?

DOC: That might be sensible while she's dealing with the symptoms.

MOM: What about antibiotics? Could they help her get better faster?

Mom continues to pursue treatment by effectively requesting ABX

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Video Example 2: Starting with a positive treatment recommendation

DOC: What I want you to do to make her more comfortable is to give her some Children's Advil every 6 to 8 hours – that'll help with the muscle aching. I also want you to give her some herbal tea with about 1 teaspoonful of honey to help with the cough. Keep that up for the next 2-3 days and I expect that'll be when she will start feeling more herself.

MOM: Okay, we'll give that a try. Should I keep her home from school?

DOC: That might be sensible while she's dealing with the symptoms.

MOM: What about antibiotics? Could they help her get better faster?

DOC: Well her infection is a viral one, and actually antibiotics don't have any effect on viruses.

Forces doctor to explain and defend antibiotic prescribing decision

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Video Example #3:

What happens when you start with a negative recommendation and end with a positive one?

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Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: **So it looks like he has a yucky cold.**

Doctor gives a clear diagnosis

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Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: So it looks like he has a yucky cold. **On the one hand, there's no medicine that'll make it go away. Having yellow-green mucous doesn't mean he has a bacterial infection, so antibiotics won't help.**

Negative Treatment Recommendation

Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: So it looks like he has a yucky cold. **On the one hand,** there's no medicine that'll make it go away. Having yellow-green mucous doesn't mean he has a bacterial infection, so antibiotics won't help.

Begins with "On the one hand…", which foreshadows more is coming and prevents interruption

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Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: So it looks like he has a yucky cold. On the one hand, there's no medicine that'll make it go away. Having yellow-green mucous doesn't mean he has a bacterial infection, so antibiotics won't help. **On the other hand, there are a bunch of things you can do to make him feel better.**

Continues by foreshadowing positive treatment recommendation

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Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: So it looks like he has a yucky cold. On the one hand, there's no medicine that'll make it go away. Having yellow-green mucous doesn't mean he has a bacterial infection, so antibiotics won't help. On the other hand, there are a bunch of things you can do to make him feel better.

DAD: Okay

Note that Dad waits for more

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Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: So it looks like he has a yucky cold. On the one hand, there's no medicine that'll make it go away. Having yellow-green mucous doesn't mean he has a bacterial infection, so antibiotics won't help. On the other hand, there are a bunch of things you can do to make him feel better.

DAD: Okay

DOC: First thing is lots of rest and lots of fluids. Raising his head at night can help drain his congestion, so you might give him another pillow. You can also run a humidifier in his bedroom at night, which can help loosen his congestion.
And a teaspoon of honey can help his cough.

Positive treatment recommendation

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Video Example 3: Starting with a negative recommendation and ending with a positive one

DOC: So it looks like he has a yucky cold. On the one hand, there's no medicine that'll make it go away. Having yellow-green mucous doesn't mean he has a bacterial infection, so antibiotics won't help. On the other hand, there are a bunch of things you can do to make him feel better.

DAD: Okay

DOC: First thing is lots of rest and lots of fluids. Raising his head at night can help drain his congestion, so you might give him another pillow. You can also run a humidifier in his bedroom at night, which can help loosen his congestion.
And a teaspoon of honey can help his cough.

DAD: Alright ← **Dad Accepts; no further pursuit**

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KEY TAKEAWAYS

- How Treatment Recommendations are Structured is Key

What we recommend:

Keep in mind that the treatment recommendation is one package comprising 4 key parts

If a parent expects antibiotics and you determine they are unnecessary, you should structure your treatment recommendation so that it includes the following components:

1) Review PE findings to make the case for your diagnosis
2) Deliver a clear the diagnosis
3) Deliver a 2-part treatment recommendation:
   ***Negative recommendation* followed by a *Positive* one**
   Use the **"On the one hand…On the other hand"** structure
4) Provide a contingency plan

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Q&A

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Thank You

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