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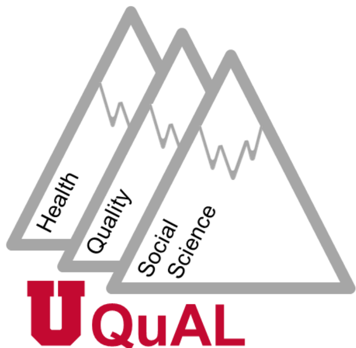
Advancing Engagement in Antimicrobial Stewardship through Effective Communication Strategies

Julia E. Szymczak, PhD
Associate Professor
Division of Epidemiology
Co-Director of Utah Quality Advancement Laboratory
University of Utah School of Medicine



Public Health Ontario Rounds
November 21, 2023

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Objectives

- Summarize the importance of social dynamics for change in healthcare with respect to antibiotic stewardship.
- Identify common communication challenges in antibiotic stewardship.
- Describe strategies to communicate effectively with prescribers and patients, to improve antibiotic prescribing.

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Quality improvement involves social change.

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I went into this line of work because I was interested in infectious disease epidemiology and hospital outbreak investigation. I love statistics and the use of epidemiologic methods in infection control.

When we see an uptick in MRSA in our ICU I like to be a disease detective within my own hospital — to figure out the source. And while all the tools I learned in public health school prepared me for that aspect of infection prevention, I didn't realize how much of it would be people management.

So, yes, our work is about microbiology, epidemiology, infectious disease and applying the best scientific evidence to control the spread of infection. But it is also about managing, cajoling and sometimes, nagging people to do the right thing every day when they come to work. My MPH coursework did not prepare me for a lot of that. So much of my job is trying to change hearts and minds — and I find that to be the most difficult thing.

Infection Preventionist

Szymczak (2013) *The Complexity of Simple Things: An Ethnographic Study of Efforts to Prevent Healthcare Associated Infection*. University of Pennsylvania.

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Don’t confuse an adaptive problem with a technical one.

Pronovost PJ. *BMJ Qual Saf*. 2011 Jul;20(7):560-3.

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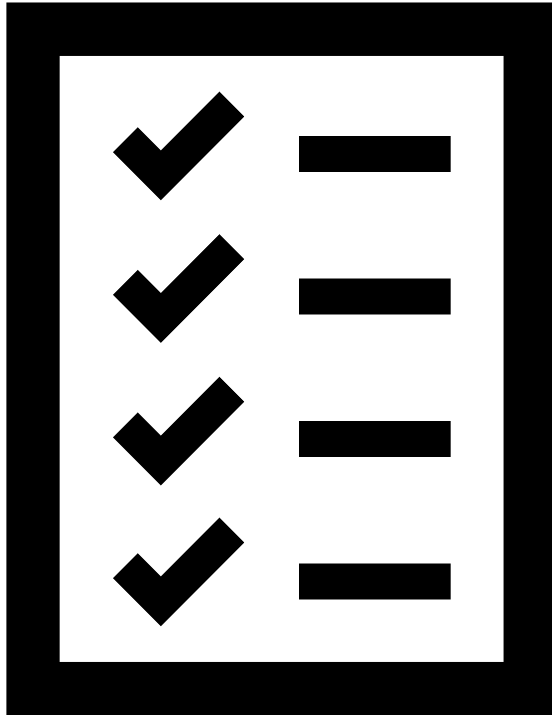

Central Lines, Checklists, Context, and Collective Social Action

Bosk et al. *The Lancet*, Volume 374, Issue 9688, 2009, Pages 444-445.

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Beware the "Simple Checklist" Story

- This narrative obscures social mechanisms that led to change
  - Engaged leadership
  - Social network of ICUs across the state encouraged institutional isomorphism
  - Leveraging infection data to promote accountability
  - Reframing CLABSI from "cost of doing business" to unacceptable
  - Bolstering climate where nurses felt empowered to speak up when they observed a breach in practice
- Just implementing the checklist without attention to these factors leads to failed replication of effects in other sites

Bion et al. *BMJ Qual Saf*. 2013 Feb;22(2):110-23.

Dixon-Woods et al. *Milbank Q*. 2011 Jun;89(2):167-205.

Reames et al. *JAMA Surg*. 2015 Mar 1;150(3):208-15.

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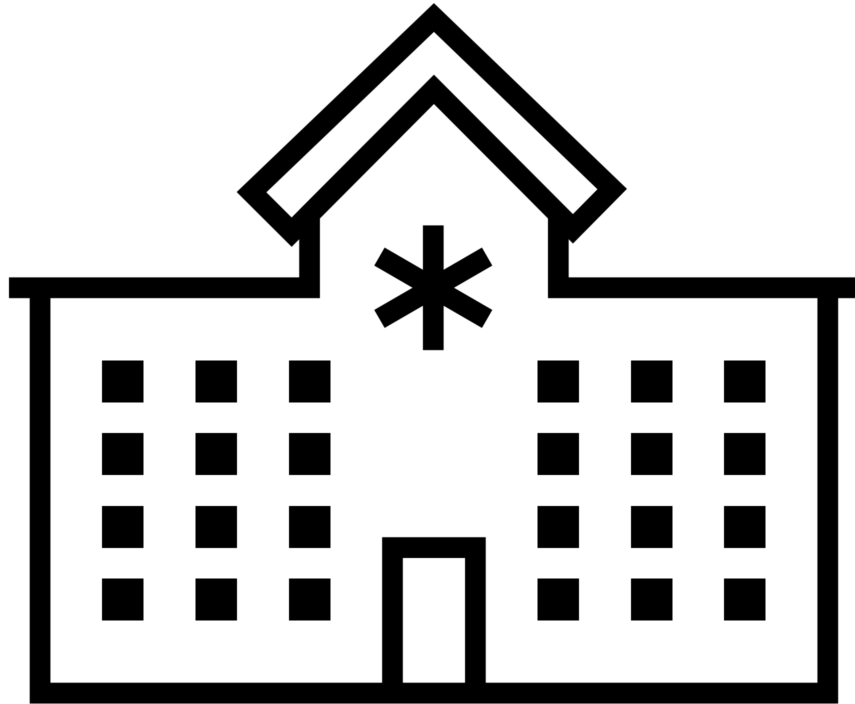
Adaptive vs. Technical Problems



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. *BMJ Qual Saf*. 2011 Jul;20(7):560-3.

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Hospital as Small Society

Photo Credit: Julie Szymczak

- **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 to achieve *social* goals (vs. biomedical ones)**

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What is a sociologist doing, researching antibiotics?

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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 Efforts to Prevent Healthcare Associated Infection*. University of Pennsylvania.

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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.

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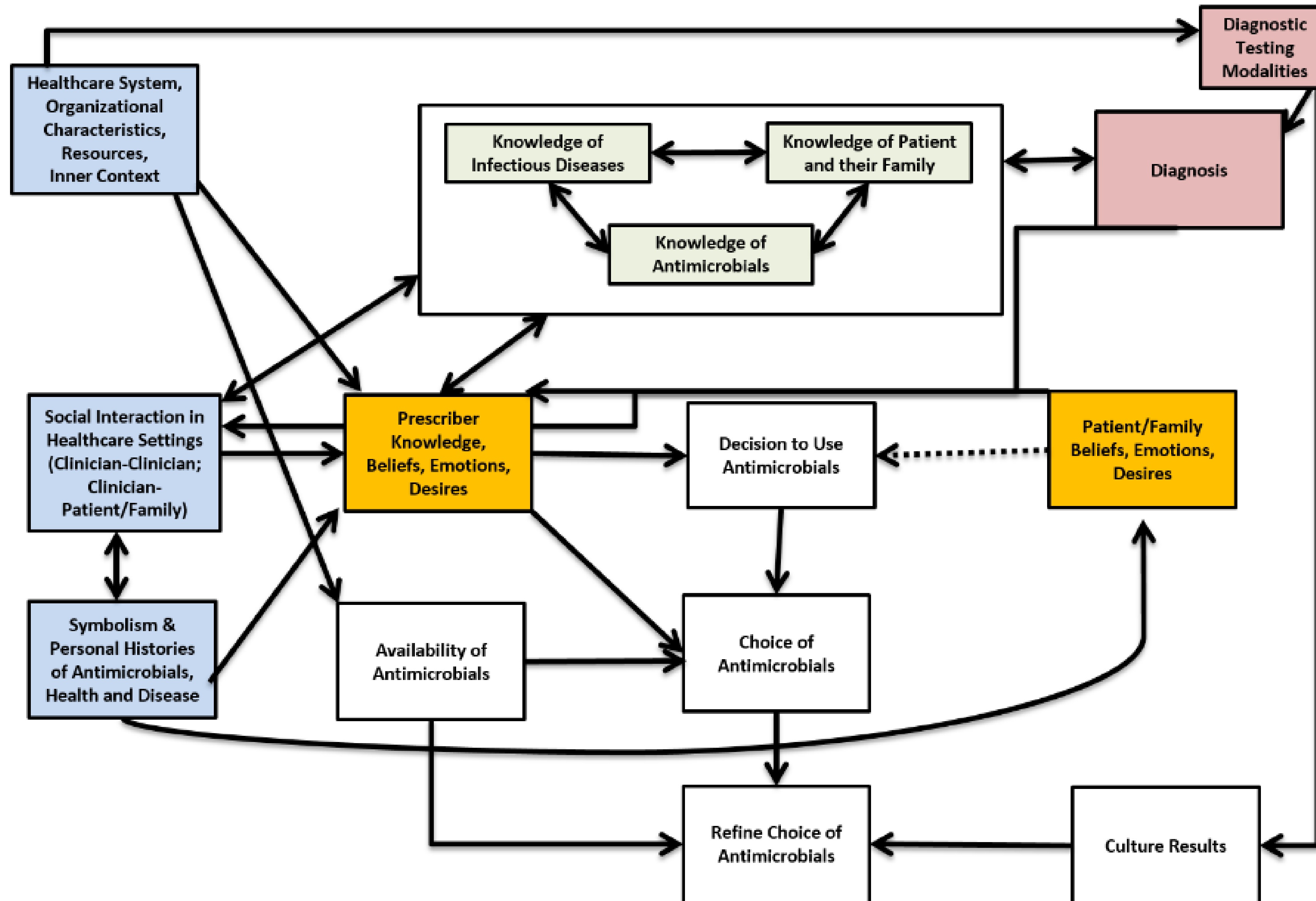
Conceptual Framework for Antimicrobial Use



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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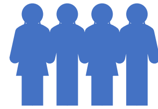
The Social Determinants of Antibiotic Prescribing

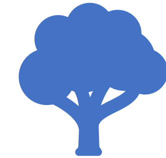
Relationships between clinicians



Relationships between clinicians and patients

Risk, fear, anxiety and emotion

(Mis)perception of the problem



Contextual and environmental factors

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Why Focus on Communication in Stewardship?

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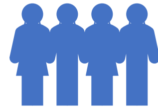
The Social Determinants of Antibiotic Prescribing

Relationships between clinicians



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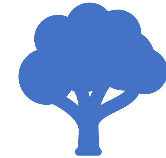

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The Social Determinants of Antibiotic Prescribing

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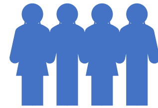

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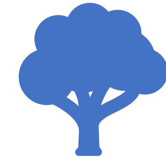

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Communicating with Prescribers

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Communication and Stewardship

- **Core hospital-based antimicrobial stewardship interventions influence prescribing via communication**
  - Prospective audit and feedback
  - Preauthorization
  - Handshake stewardship
- **Stewardship personnel need more than proficiency in ID, microbiology, data analytics, informatics**
  - Social and communicative skills to implement change in complex organizations

CDC. Core Elements of Hospital Antimicrobial Stewardship Programs. Atlanta, GA: US Department of Health and Human Services, CDC;2019.

Cosgrove SE et al. ICHE. 2014;35(12):1444-1451.

Hurst AL et al. J Pediatric Infect Dis Soc. 2019 May 11;8(2):162-165.

Hurst AL et al. Pediatr Infect Dis J. 2016 Oct;35(10):1104-10.

Baker DW et al. J Qual Patient Saf. 2019 Jul;45(7):517-523.

Stenehjem EA et al. Infect Control Hosp Epidemiol. 2022 Oct 13:1-8.

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Communication and Stewardship

- **Stewards must navigate complex social and cultural dynamics in daily work**
  - Delivering advice to people who have not requested it
  - Restricting access and gate keeping role
    - May be perceived as introducing inefficiencies to workflow
  - Contending with "prescribing etiquette" and the norm of non-interference surrounding antimicrobial use
    - "Antibiotic police"

Charani E et al. Clin Infect Dis. 2013;57(2):188-196.

Szymczak JE et al. Infect Control Hosp Epidemiol. 2019 May;40(5):522-527.

Szymczak, J.E. and J. Newland (2018). Practical Implementation of an Antibiotic Stewardship Program. Cambridge: Cambridge University Press.

Yager RC, et al. BMC Health Serv Res. 2022 Apr 18;22(1):514.

Barlam TF et al . Open Forum Infect Dis. 2020 Jun 15;7(7):ofaa229.

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Communication and Stewardship

- **Stewards must navigate complex social and cultural dynamics in daily work**
  - Interprofessional stewardship communication can cause conflict (MD-PharmD)
    - Asymmetry in authority, accountability
    - Hierarchy
    - Professional identity and subcultures
  - Recognizing emotional influences on prescribing
    - Fear, relationship with patient, tolerance of uncertainty

Broom A et al. BMC health services research. 2016;16:43.
Kirby E et al. BMJ Open. 2020 Oct.
Broom et al. Qual Health Res. 2017 Nov;27(13):1924-1935.
Szymczak, JE Clin Infect Dis. 2019 June 18;69(1):21-23.
Broom A et al. Qual Health Res. 2017 Nov;27(13):1994-2005.

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Why does this matter?

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Impact of Interventions

- **Variation in impact of communication-based stewardship interventions**
  - Wide variation observed in acceptance rates of prospective audit and feedback (11-90%)
  - We know some factors associated with acceptance
    - Face to face
    - Professional role of steward
    - Type of recommendation
    - Sociodemographics of steward
    - Location of patient

Hurst AL et al. J Pediatric Infect Dis Soc. 2019;8(2):162-165.
Howell CK et al. Hospital pharmacy. 2019;54(1):51-56.
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Ausman SE et al. Infect Control Hosp Epidemiol. 2023 May 24:1-7.
Shively, NR et al. Open Forum Infect Dis 2022;9:ofac458.
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Antimicrobial Steward Job Satisfaction

- **Impact of job satisfaction and engagement of antimicrobial stewards who enact policy and guidelines in everyday work**
  - Occupational burnout
    - Emotional exhaustion
    - Feelings of cynicism and detachment from work
    - Sense of low personal accomplishment
  - Turnover of stewardship personnel
    - Loss of relationships, institutional expertise

Szymczak et al. *Open Forum Infect Dis*, Volume 9, Issue Supplement_2, December 2022, ofac492.808.

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Communication and Stewardship

- **While communication has been identified as driver of success in stewardship, we lack an understanding of specific attributes of effective communication**
  - How stewards communicate
    - How do they navigate tension?
    - How do they secure prescriber engagement?
    - What microdynamics influence stewardship interactions?
  - How prescribers perceive communication in stewardship
    - What messages are credible?
    - What promotes trust in stewardship recommendations?

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Identifying the Attributes of Effective Communication in Antimicrobial Stewardship

University of Pennsylvania
Brandi M. Muller
Keith Hamilton
Jeffrey S. Gerber
Ebbing Lautenbach

Duke University
Elizabeth Dodds-Ashley
Rebekah W. Moehring
Deverick Anderson

Washington University in St. Louis
Jason G. Newland
Michael Durkin
Hilary Babcock

Research supported by CDC Cooperative Agreement FOA#CK16-004-Epicenters for the Prevention of Healthcare Associated Infections.

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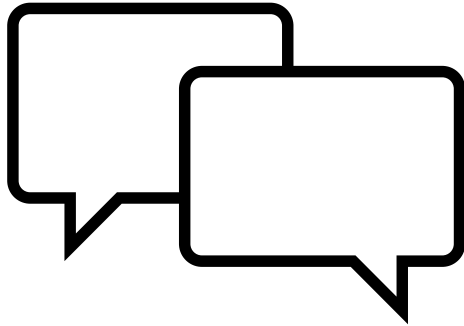

- **Multi-site qualitative study**
  - 10 U.S. Hospitals – academic medical centers, community hospitals, pediatric hospitals
- **Interviews to understand communication dynamics in stewardship**
  - 146 prescribers (critical care, neonatology, surgery, internal medicine)
  - 58 stewards (pharmacists, physicians)
- **Data gathered before COVID-19**

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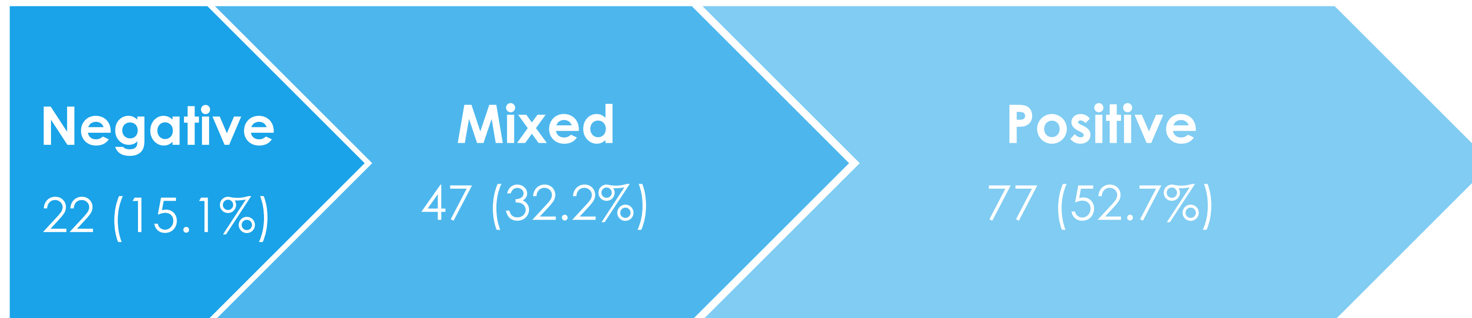
Sentiment of Prescriber Perceptions



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What Underpins Negative Perceptions?

- **Stewardship symbolizes unpalatable trends in medicine more broadly**
  - Encroachment of bureaucracy that puts profits over patients
  - "Cookbook" medicine
- **Stewardship a threat to a prescriber's professional identity or sense of self**
  - Discomfort with being wrong
  - Feeling as if expertise is not acknowledged
- **Goals of stewardship and goals of prescriber appear to be at odds**
  - Inefficiency of systems
  - Different motivations by clinical area (surgery, oncology, neonatology)

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What Underpins Positive Perceptions?

- **Stewards communicate things of value in a thoughtful manner**
  - Education
  - Updated evidence
  - Catches errors

- **Stewardship attempts to understand where prescriber is coming from**
  - Non aggressive approach
  - Acknowledges prescriber's experience clinically and with the specific patient in question
  - Thinks critically about where and when to interject

- **Shared sense of mission and motivation between steward and prescriber**

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Stewards - Communication Strategies

Language

- Purposeful moderation of language to reduce defensive reaction
- Language is way to adapt intervention to prescribing etiquette

Framing

- Communicates that ultimate goal of stewardship is to improve patient care
- Avoids discussion of finances, regulatory pressures or assessments of medical knowledge
- Acknowledge prescriber expertise and level of responsibility
- Purposefully avoids adopting a conflict orientation in their interactions

Strategy

- Thinks about communication over time, "invests" in future interactions
- Knows which battles to fight, leaves some things on the table
- Meets prescribers where they are at physically and emotionally
- Talks about things other than antibiotics

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Conclusions

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Prescribers

- **Prescribers in our study generally felt favorably towards stewardship**

- **Communication viewed positively was:**
  - Not dogmatic or aggressive or agenda-driven
  - Conveyed a shared sense of mission: the patient
  - Conveyed a desire to understand
  - Efficient and value-added

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Stewards

- **Communication in stewardship is purposeful and multi-modal**
  - Consider language, framing, strategy
  - A way to navigate "prescribing etiquette"

- **Work to establish credibility and legitimacy is paramount**

- **Relationship building**
  - Thinking about relationships as "chains" of interactions
  - Sets the stage for acceptance down the line
    - Prescribers stewarding themselves?

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The 3Ps/3Ds/3Cs Framework

Table 1. The 3Ps/3Ds/3Cs Framework for Antimicrobial Stewardship

Place	• What is/are the infection(s) or potential infection(s)? • From what possible places is/are infection(s) coming (eg, skin, gastrointestinal tract, oropharynx, health care environment)? • Are there tests that need to be performed to determine location?
Pathogen	• What organism(s) could be or is/are causing the infection? • If the organism(s) is/are not known yet, which organisms tend to live in the potential locations (eg, skin = *Streptococcus* and *Staphylococcus*) • Are there tests that should be performed to identify the organism(s)?
Patient	• Is the patient sick or not sick? • Are there risks for resistance (eg, health care exposure, recent antibiotics)? • Does the patient have characteristics that affect antibiotic choice (eg, renal insufficiency, prolonged QTc interval, antibiotic allergies)?
Drug	• What antibiotic(s) is/are patient on? What do you want them to be on? • What sort of monitoring is needed for antibiotics (eg, drug levels, labs, electrocardiograms)? • Are there drug characteristics that affect antibiotic choice (eg, cost, efficacy data, drug–drug interactions, spectrum of activity)?
Dose	• What is the dosing frequency of the antibiotic(s)? • Does the dose need to be adjusted for renal function/liver function? • Does the antibiotic need to be dosed by weight? Which weight (ideal body weight, adjusted body weight, actual body weight)?
Duration	• Is there an evidence-based duration for the indication(s) being treated? • Is there an evidence-based duration for the antibiotic(s) being used? • If the duration cannot yet be determined, is there additional testing or follow-up that needs to be done to determine duration?
Context	• What professional or cultural factors may be motivating the provider or team in making antibiotic decisions? • What questions need to be asked to better determine the motivations and context of the provider or team?
Communication	• How should the recommendations be framed to the provider or team considering the context of antibiotic prescribing? • What team member should be contacted to have effective discussion (eg, intern, resident, advanced practice provider, attending, consultant)?
Collaboration	• How can you work together with the provider or team to increase trust and decrease future conflict? • Is follow-up with the team needed? • Should an infectious disease or other consultation be suggested?

Wang R et al. Open Forum Infect Dis. 2021 May 8;8(6):ofab231.

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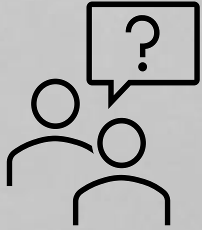
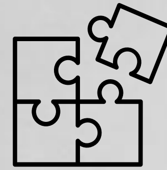
The 3 Cs of Stewardship



Communication

- In what format will you communicate your antimicrobial stewardship recommendation to prescribers?
- What team member should be contacted to have an effective discussion? (e.g., intern, resident, advanced practice provider, attending, consultant)
- How will you frame the motivation around your stewardship recommendation?



Context

- What are the circumstances (physical, workload, emotional) surrounding the person you will be communicating with?
- How will you take into account their challenges, perspectives and professional culture when you convey your stewardship message?
- What questions need to be asked to better determine the motivation and context of the prescriber?

Collaboration

- How will you approach the stewardship interaction with relationship-building in mind?
- How can your communication in this moment facilitate trust-building in the future?
- If conflict might occur, how might you manage it?
- Is follow up with the team needed?
- Should other resources be suggested?

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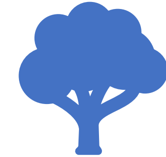
The Social Determinants of Antibiotic Prescribing

Relationships between clinicians

Relationships between clinicians and patients

Risk, fear, anxiety and emotion

(Mis)perception of the problem



Contextual and environmental factors

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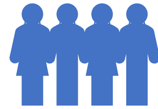

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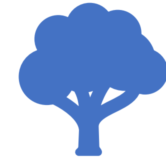

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Communicating with Patients

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Clinician-Patient Relationship

- Clinicians identify patient expectation and pressure for antibiotics as a key driver of unnecessary prescribing
- Especially in pediatrics, urgent care, the emergency department, and telemedicine

Bauchner et al. Pediatrics 1999:103
Brookes-Howell et al. BMJ Open 2012:2
Vazquez-Lago et al. Fam Pract 2012:29
Szymczak et al. ICHE 2014:35(S3): S69-78
Kohut MR et al. Fam Pract. 2020 Mar 25;37(2):276-282
Zetts RM et al. Open Forum Infect Dis. 2020 Jun 20;7(7):ofaa244.
Szymczak JE et al. Mayo Clin Proc. 2021 Mar;96(3):543-546
Spencer HJJ et al. Antimicrob Steward Healthc Epidemiol. 2022 Jun 29;2(1):e107.

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“Sometimes you just don’t have time to argue with a parent. You just don’t. It can be a war zone. It is in the middle of the winter, and the kid is outside throwing up in the hall, and the mom says ‘I need an antibiotic prescription.’ Most of the time you can reason with her. You say ‘look, we don’t need to treat this.’ And she says ‘but my neighbor says this. I have an uncle who’s a doctor and he said yes, I need it.’ They come up with a million reasons why they need it. And you just don’t have time.”

Primary Care Pediatrician

Szymczak et al. ICHE 2014 35(S3):S69-S78

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Patient Expectations and Pressure

- Relationship between receipt of antibiotic and patient satisfaction varies across studies
- Patients who expect to receive an antibiotic are more satisfied when they are prescribed one
- When a clinician perceives that a patient expects an antibiotic, they are more likely to prescribe

Cziner MJ et al. Antimicrob Steward Healthc Epidemiol. 2023 Apr 26;3(1):e83.
Sirota M et al. Heal Psychol 2017;36:402–409.
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Clinician-Patient Relationship

- Evidence to suggest that clinicians over-estimate patient demand for antibiotics

- Patients becoming more aware (and wary) of antibiotic overuse
  -Primary concern is gaining clarity about symptoms

- Clinicians prescribe on the basis of **perceived** rather than **actual** patient expectations

Mangione-Smith et al. Pediatrics 1999:103
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Finkelstein et al. Clin Pediatr (Phila) 2014:53
Mangione-Smith et al. Arch Pediatr Adolesc Med 2006:160
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What Can You Do? Communication is Key!

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Content and Technique

- Content of messages in response to patient appeals for unnecessary antibiotics

- Simple techniques to communicate with patients to reduce unnecessary antibiotic use while maintaining satisfaction

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Content and Technique

- **Content of messages in response to patient appeals for unnecessary antibiotics**

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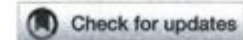
Addressing the Content of Patient Appeals

PERSPECTIVE AND CONTROVERSY

"I *Never* Get Better Without an Antibiotic": Antibiotic Appeals and How to Respond



Julia E. Szymczak, PhD; Sara C. Keller, MD, MPH, MSHP; and Jeffrey A. Linder, MD, MPH

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Appeal #1: Another Clinician

- …an observation that in the past, another clinician has prescribed antibiotics for similar symptoms.

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Appeal #1: Another Clinician

- …an observation that in the past, another clinician has prescribed antibiotics for similar symptoms.

"Well, Dr. Smith always gives me an antibiotic when I have symptoms like this."

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Appeal #1: Another Clinician

- …an observation that in the past, another clinician has prescribed antibiotics for similar symptoms.

"Well, Dr. Smith always gives me an antibiotic when I have symptoms like this."

"While it is helpful to know how you've been treated for this in the past, I'm focused most intently on how you are feeling today. Also, there has been more recognition lately about the harms of antibiotics. All physicians are being urged to use antibiotics only when they are more likely to help than hurt."

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Appeal #2: Past Symptom Relief

- … the observation that, in the past when they have had similar symptoms and were prescribed an antibiotic they felt better quickly.

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Appeal #2: Past Symptom Relief

- … the observation that, in the past when they have had similar symptoms and were prescribed an antibiotic they felt better quickly.

"When I've been sick like this in the past antibiotics were the only thing that worked."

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Appeal #2: Past Symptom Relief

"You have a virus and antibiotics do not fight viruses. What you experienced in the past was the natural resolution of your illness. Your body has an amazing capacity to heal itself. Also, we want to avoid putting a chemical in your body that cannot help but could hurt you."

- … the observation that, in the past when they have had similar symptoms and were prescribed an antibiotic they felt better quickly.

"When I've been sick like this in the past antibiotics were the only thing that worked."

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Appeal #3: Future Plans

- …with an important life event scheduled in the near future that they do not want their symptoms to interfere with

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Appeal #3: Future Plans

- …with an important life event scheduled in the near future that they do not want their symptoms to interfere with

“We’re going on vacation for 10 days starting tomorrow. Can’t you give me something, just in case?”

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Appeal #3: Future Plans

- …with an important life event scheduled in the near future that they do not want their symptoms to interfere with

"We're going on vacation for 10 days starting tomorrow. Can't you give me something, just in case?"

"Antibiotics won't help you get better faster and they can cause problems like diarrhea that might ruin your vacation. There are some effective things you can do to manage your symptoms including staying hydrated, taking ibuprofen and saline nasal spray."

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Appeal #4: Something is Going Around

- … with the observation that a spouse, child, colleague or friend whom they have spent time with is experiencing similar symptoms and was prescribed an antibiotic by another clinician.

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Appeal #4: Something is Going Around

- … with the observation that a spouse, child, colleague or friend whom they have spent time with is experiencing similar symptoms and was prescribed an antibiotic by another clinician.

  "Something is going around my office and everyone is sick. Many of my colleagues have been given an antibiotic for this and seem to be better, so I think I need one too."

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Appeal #4: Something is Going Around

- … with the observation that a spouse, child, colleague or friend whom they have spent time with is experiencing similar symptoms and was prescribed an antibiotic by another clinician.

"Something is going around my office and everyone is sick. Many of my colleagues have been given an antibiotic for this and seem to be better, so I think I need one too."

"My chief concern is your wellbeing since you are my patient and I will treat you as an individual. My examination shows you have a viral infection. The fact that your colleagues are sick makes it all the more likely that it is a virus, and antibiotics don't fight viruses."

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Appeal #5: Is the Customer Always Right?

- …with an economic or consumerist reason why they should receive an antibiotic, even if one is not warranted.

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Appeal #5: Is the Customer Always Right?

- …with an economic or consumerist reason why they should receive an antibiotic, even if one is not warranted.

"But I took a whole morning off of work to come here. Are you telling me that there is really nothing you can give me?!?"

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Appeal #5: Is the Customer Always Right?

- …with an economic or consumerist reason why they should receive an antibiotic, even if one is not warranted.

"But I took a whole morning off of work to come here. Are you telling me that there is really nothing you can give me?!?"

"I'm so glad you came in to see me today so I could evaluate these uncomfortable symptoms you are experiencing to make sure it's not dangerous. You are sick with a virus. While we can't make the virus go away faster, you can feel better sooner by supporting your body with rest, lots of fluids and ibuprofen for your muscle aches."

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Messages to Convey in Response to Appeals

- Convey that the patient's well-being in the moment is your primary concern and motivation behind the recommendation
- Recognize the patient's suffering as real
- Empathize with the patient about the burdensome impact of illness on daily life
- Affirm the patient's decision to seek medical attention to rule out more serious illness

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Conclusion

- Efforts to improve how antibiotics are used need to engage with the social, behavioral, and cultural drivers of prescribing
- Social interaction between stakeholders (clinicians, patients, public health professionals, antibiotic stewards) matters in changing perceptions of antibiotics
- Purposeful attention to communication dynamics in different contexts can yield insights about the best way approach stakeholders

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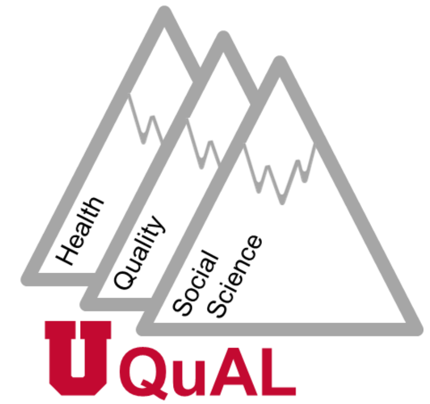

Questions?

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