

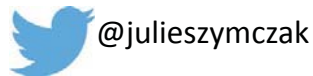
Towards a More “Human” Stewardship: The Sociology of Antimicrobial Prescribing

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Disclosures

- I have no financial relationships to disclose in relation to this presentation

Objectives

- To explain what it means to take a sociological approach to patient safety and quality improvement
- To state what we know about the social determinants of antibiotic prescribing and how this knowledge can be used to inform the development of stewardship interventions and inform future research
- Describe practical strategies to uncover and overcome social barriers to implementing antibiotic stewardship

A Sociologist Sees The Hospital as a Small Society



Charles Drew teaching interns and residents at Freedmen's Hospital in Washington, DC, 1947

- Behavior in healthcare organizations shaped by social dynamics of groups^{1,2,3}
 - Conflict
 - Status inequality
 - Face-saving and emotion management
 - Identity work
 - Hierarchies
- Medical and healthcare workplaces have distinct cultures that shape decision making and behavior⁴

(1) Becker et al. 1961 *Boys in White*, (2) Bosk 1979 *Forgive and Remember*, (3) Freidson 1970 *The Profession of Medicine*, (4) Heimer & Staffen 1998 *For the Sake of the Children*

FROM THE EDITOR-IN-CHIEF

DOI: 10.1377/hlthaff.2011.0287

Still Crossing The Quality Chasm—Or Suspended Over It?

BY SUSAN DENTZER

DATAWATCH

By Robert M. Wachter

Patient Safety At Ten: Unmistakable Progress, Troubling Gaps

doi: 10.1377/hlthaff.2009.0785
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Why study antibiotic use as a sociological
phenomenon?

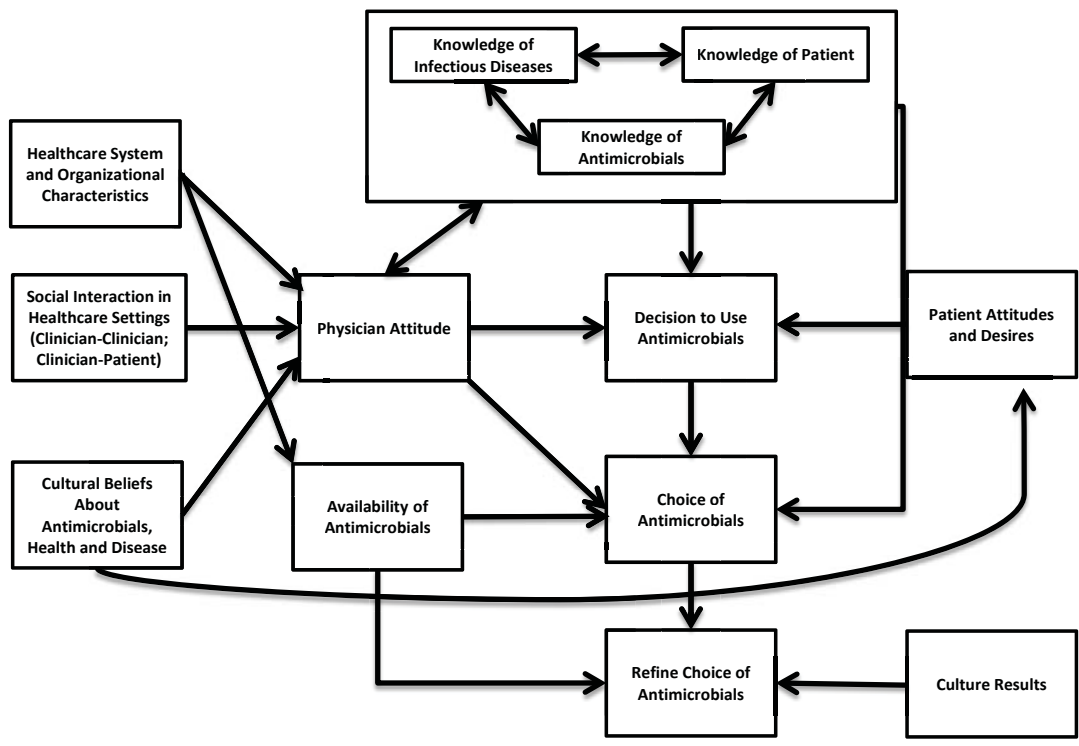


KEEP
CALM
AND DO
**Antimicrobial
Stewardship**

Antibiotic Stewardship and Behavior Change

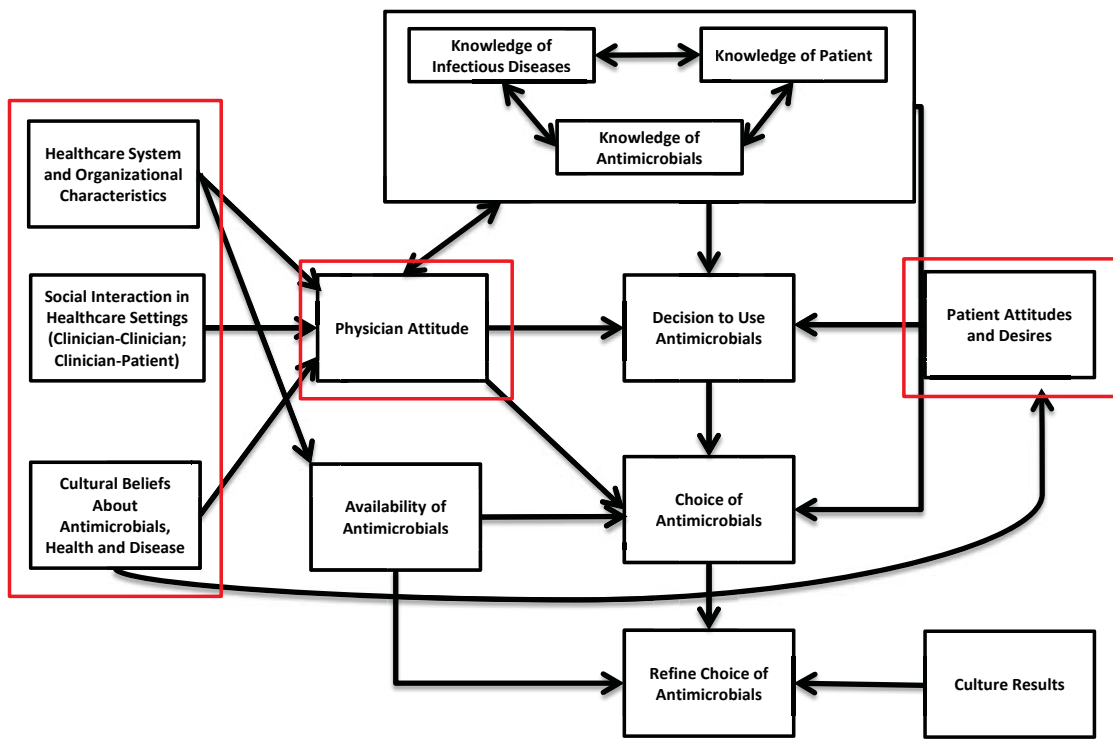
- Antibiotic Stewardship (AS) interventions use different strategies (both persuasive and restrictive) to **change the prescribing behaviors** of frontline clinicians
 - Education
 - Audit and Feedback
 - Restricted Formularies
 - Prior Approval
- Prescribing behavior is a complex, multifactorial process

Conceptual Framework for Antibiotic Use



Adapted from Fishman, N. 2006. "Antimicrobial Stewardship" American Journal of Infection Control. 34(5)S1: S55-63.

Conceptual Framework for Antibiotic Use



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Social Determinants of Antibiotic Prescribing

- Emerging literature identifies factors that drive antibiotic prescribing decisions **beyond clinician knowledge** of appropriate practice or **medical need**
- Medical sociologists and anthropologists have long-identified that prescribing a drug is **a highly social as well as clinical act**¹

¹van der Geest et al. Ann Rev Anthropology 1996 (25): 153-178.

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

1.) Relationships Between Clinicians

- “Prescribing etiquette”^{1, 2, 3}
 - Strong **norm of noninterference**²
 - Avoid altering other prescribers’ decisions
 - Ok to intervene on prescribing decisions that are **immediately harmful** but not for those that are **apparently inappropriate**
 - Reluctance to provide critique/feedback/advice⁴
 - Ok sometimes, but only in “appropriate” forum (handoffs)
 - Lack of opportunity to give face-to-face feedback

(1) Charani et al. CID 2013:57, (2) Lewis et al. J R Soc Med 2009:102, (3) Armstrong et al. Soc Health Ill 2006:28, (4) Livorsi et al. ICHE 2015:36

1.) Relationships Between Clinicians

- Role of hierarchy
 - Junior physicians defer to senior colleagues^{1, 2}
- Opinion of senior colleagues and social networks³ more influential than guidelines
 - Variation in attitudes by medical specialty⁴

(1) DeSouza et al. J Antimicrob Chemother 2006:58, (2) Charani et al. CID 2013:57, (3) Grant et al. Imp Sci 2013:8, (4) Cortoos et al. J Antimicrob Chemother 2008:62

2.) Patient Demand

- Clinicians identify patient pressure for antibiotics as major barrier to more judicious prescribing^{1, 2, 3, 4}
 - Especially in ambulatory settings and pediatrics

(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) Szymczak et al. ICHE 2014:35(S3): S69-78

2.) Patient Demand

- Why capitulate to patient pressure?^{1,2}
 - Want to please patient
 - Don't want patients to go home "empty-handed"
 - Competing performance measures – fear of leadership sanctions following poor patient satisfaction scores³
 - Explaining why antibiotics are not necessary is too time-consuming and unrewarding
 - Fear medicolegal sanctions

(1) Butler et al. BMJ 1998:317, (2) Shapiro Clin Ther 2002:24, (3) May et al. ICHE 2014 35(9): 114-1125

2.) Patient Demand

- Evidence to suggest that clinicians overestimate patient demand for antibiotics^{1,2}
- Patients becoming more aware (and wary) of antibiotic overuse^{3, 4}
 - Primary concern is gaining clarity about symptoms
- Clinicians prescribe on the basis of perceived rather than actual patient expectations^{5, 6}

(1) Mangione-Smith et al. Pediatrics 1999:103, (2) Stivers et al. J Fam Pract 2003:52, (3) Finkelstein et al. Clin Pediatr (Phila) 2014:53, (4) Szymczak et al. JPIDS 2017, (5) Mangione-Smith et al. Arch Pediatr Adolesc Med 2006:160, (6) Ong et al. Ann Emerg Med 2007:50

3.) Risk, Fear, Anxiety and Emotion

- 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-making³
- Resident risk perceptions re: broad spectrum abx⁴
 - Overly dire consequences for initiating coverage that is too narrow
 - Broad spectrum drugs feel “safe,” more “comfortable”
 - Overarching goal is “prevention of disaster in next 24 hrs”

(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) Laake et al. IDWeek 2013

3.) Risk, Fear, Anxiety and Emotion

- Emotional desire to provide all immediate therapeutic options regardless of wider population consequences¹
 - Shaped by face to face interactions with patients and their families
 - The “pull” of social relationships stronger than the “push” of guidelines or restrictive policies

(1) Broom et al. Soc Sci Med 2014:110

4.) (Mis)Perception of the Problem

- Numerous survey studies find that clinicians perceive antibiotic overuse is a problem generally, but not locally^{1,2,3,4}

(1) Giblin et al. Arch Intern Med 2004:164, (2) Wood et al. J Antimicrob Chemother 2013:68, (3) Abbo et al. ICHE 2011 32(7): 714-718, (4) Stach et al. JPIDS 2012 1(3):190-7

4.) (Mis)Perception of the Problem

- Numerous survey studies find that clinicians perceive antibiotic overuse is a problem generally, but not locally^{1,2,3, 4}
- Other medical specialties responsible for overuse⁵

“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

(1) Giblin et al. Arch Intern Med 2004:164, (2) Wood et al. J Antimicrob Chemother 2013:68, (3) Abbo et al. ICHE 2011 32(7): 714-718, (4) Stach et al. JPIDS 2012 1(3):190-7, (5) Szymczak et al. ICHE 2014:35

4.) (Mis)Perception of the Problem

- Exceptionalism¹
 - Guidelines do not apply to my patients
 - My past experience and expertise trump guidelines²
 - Guidelines are “academic” and are not always practical in application³
 - Disbelief that one overprescribes^{3,4}

(1) Charani et al. CID 2013:57; (2) Grant et al. Implementation Science 2013 8(72), (3) Szymczak et al. ICHE 2014:35; (4) Abbo et al. ICHE 2011 32(7): 714-718

4.) (Mis)Perception of the Problem

- Antibiotic resistance a macro problem but of limited concern at the bedside
 - Resistance is a “theoretical”¹ or “intellectual”² concern, not a practical one
 - Emergent problems take precedence

(1) Bjorkman et al. Qual Saf Health Care 2010:19, (2) Broom et al. Soc Sci Med 2014:110

5.) Contextual and Environmental Factors

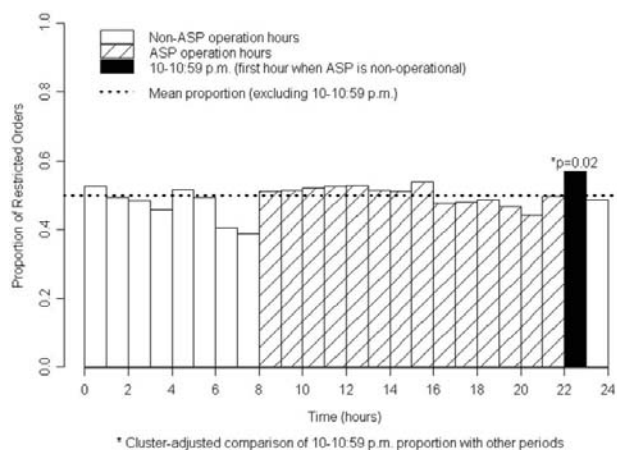
- Time pressures
 - Pressure to discharge quickly discourages a “watch and wait” approach¹
 - Practice volume and throughput pressures discourage communication with patients²
- Ease of accessing diagnostic testing systems and ability to act on the results
- Time of day³
 - Decision fatigue – erosion of self control over time (tired, hungry, etc.) – GPs make more inappropriate abx decisions later in the day

(1) Avorn et al. Ann Intern Med 2000:133, (2) May et al. ICHE 2014:35, (3) Linder et al. JAMA Internal Medicine 2014 174(12):2029-31

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

Implications for Stewardship

- Although AS interventions have been successful to a degree, we can do better
 - Direct educational approaches generally do not result in sustained improvement¹
 - Restrictive policies can be circumvented
 - “Stealth dosing”²
 - Misrepresenting clinical information^{3,4,5}
 - Combining non-restricted antibiotics to get desired coverage beyond AS recommendation
 - Audits can be “gamed”⁶



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



Stewardship from the ground up instead of top-down?

Implications for Stewardship

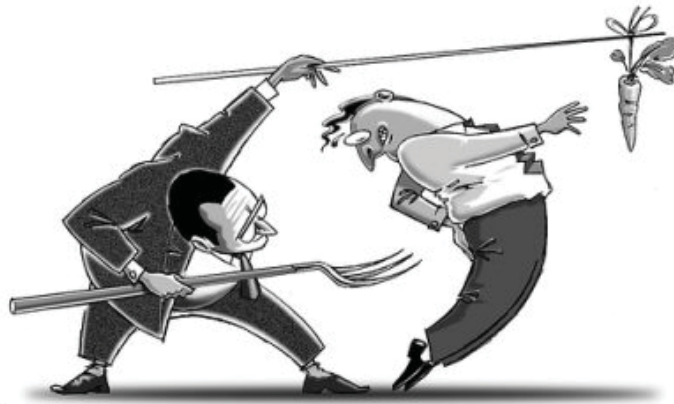
- For lasting change, clinicians need to internalize **new social norms** surrounding antibiotic prescribing¹
 - What is considered “prudent”
 - Antibiotics have an **image problem**
 - “We’ll just put her on a *little antibiotic*”
 - Adverse effects underappreciated²
 - Openness to questioning and being questioned about prescribing decisions

(1) Bosk et al. Lancet 2009:374;
(2) Livorsi et al. ICHE 2015:36(9)

Implications for Stewardship

- When developing any QI intervention, need to understand
 - **attitudes, motivation and intentions** of those whose behavior is the target of change¹
 - **local social/environmental context**²
- Despite evidence to suggest the importance of these factors, **frequently overlooked in design and implementation of AS interventions**³

(1) Pronovost BMJ 2011:20, (2) Aveling et al. J Health Organ Manag 2012:26, (3) Charani et al. Clin Infect Dis 2011:53



Can we work *with* culture and context to make sustainable changes in antibiotic prescribing behavior?

Participatory Action Research: The Dutch Unique Method for Antimicrobial Stewardship (DUMAS)



From: **Behavioral Approach to Appropriate Antimicrobial Prescribing in Hospitals** The Dutch Unique Method for Antimicrobial Stewardship (DUMAS) Participatory Intervention Study

JAMA Intern Med. 2017;177(8):1130-1138. doi:10.1001/jamainternmed.2017.0946

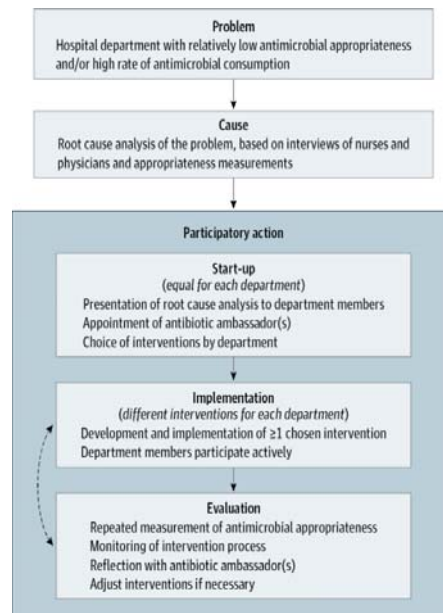
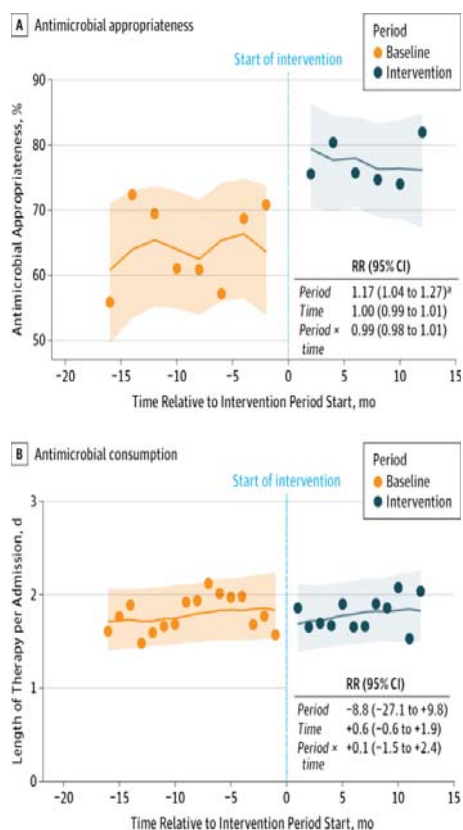


Figure Legend:

Intervention Approach Used in the Current Study

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- Intervention draws on 3 behavioral principles
 - Respect for prescriber autonomy to avoid resistance
 - Inclination of people to value a product higher and feel more ownership if they made it themselves
 - Tendency for people to follow up on an active and public commitment



Thinking Sociologically about Stewardship

- Investigate motivations of frontline prescribers
 - Reinterpret resistance and recalcitrance
 - How do “active resisters and organizational constipators”¹ define the problem?
 - Try to understand what is at stake surrounding behavior that is target of change and what people want to preserve²

¹Saint et al. Jt. Comm J Qual Patient Saf. 2009 35(5): 239-46;

²Pronovost BMJ Qual Saf 2011(20):560-563

Thinking Sociologically about Stewardship

- Explore social dynamics that characterize optimal way of “doing stewardship”
 - Leverage the power of face to face interaction¹
 - Trust accumulates over time based on repeated interactions²
 - “Handshake stewardship” has shown promise without relying on restriction or preauthorization – fostering a culture of more judicious prescribing³

(1) Pakyz et al. AJIC 2014 42: S257-S263; (2) Collins 2004 *Interaction Ritual Chains* Princeton University Press; (3) Hurst et al. PIDJ 2016 35(10): 1104-1110

Thinking Sociologically about Stewardship

- Research on social dynamics surrounding implementation of stewardship suggests^{1,2,3, 4}
 - Communication style and content of message matters
 - Develop collegial relationships based on trust to increase engagement to create a “we” instead of a “you” and “us” mentality
 - Have a plan to deal with conflict and prescriber resistance; develop a “thick skin”
 - Gain credibility quickly

(1) Pakyz et al. AJIC 2014: 42, (2) Jeffs et al. JCPH 2015:68(5), (3) Patel et al. Interdisc Perspect on Infect Dis 2012, (4) Szymczak & Newland Forthcoming

The Importance of Relationship-Building

Messaging Matters

Finding Creative Ways to Change Perceptions

Summary

- Use of antibiotics shaped by social, behavioral and contextual factors
- More attention needs to be paid to these factors
 - How they unfold in day to day work of stewardship
 - Qualitative research to identify **novel sociobehavioral targets** for intervention
 - Develop **social tools for stewardship** that address adaptive challenges, communication, conflict
 - Explicitly **address and plan for social dynamics** when implementing a stewardship program

Questions?

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Getting unnecessary antibiotics in Lusaka, Zambia while doing research in Summer 2016