

Coaxing Commitment: Implementing Stewardship in Outpatient Settings

Julia E. Szymczak, PhD

Assistant Professor

Department of Biostatistics, Epidemiology and Informatics

Division of Infectious Diseases

 @julieszymczak

DEPARTMENT of
BI STATISTICS
EPIDEMIOLOGY &
INFORMATICS



Philadelphia Department of Public Health
Healthcare-associated Infections/Antimicrobial Resistance
(HAI/AR) Collaborative Meeting
November 9, 2018

Disclosures

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

Objectives

1. Outpatient antibiotic prescribing is a sociobehavioral phenomenon

- To review what we know about the social, emotional and cultural factors that drive excessive antibiotic prescribing in outpatient settings
- To present an example of a sociobehavioral intervention that works to reduce unnecessary prescribing

2. Implementing antibiotic stewardship interventions involves sociobehavioral work

- To present a tool you can use to identify sociobehavioral factors that impact implementation success and strategies to address them

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 (Becker 1961; Bosk 1979; Friedson 1970)
 - Conflict
 - Status inequality and hierarchy
 - Face-saving and emotion management
 - Identity work
- Medical and healthcare workplaces have distinct cultures that shape decision making and behavior (Heimer & Staffen 1998)

1.) Why think of outpatient antibiotic use as a sociobehavioral phenomenon?

“I need to meet them in some way that not just recognizes that I care about them but also don’t want them to suffer. Oftentimes, people think if I don’t give them something, I want them to suffer with their illness. That’s not the situation, as physicians know, but dealing with patient perception and getting over that hurdle is not always something I can do in 15 minutes.” (Physician, Community Family Medicine Clinic)¹

“I need to meet them in some way that not just recognizes that I care about them but also don’t want them to suffer. Oftentimes, people think if I don’t give them something, I want them to suffer with their illness. That’s not the situation, as physicians know, but dealing with patient perception and **getting over that hurdle is not always something I can do in 15 minutes.**” (Physician, Community Family Medicine Clinic)¹

“The patient who comes in and says, I’ve had this before, **my doctor upstairs always gives me an antibiotic** even if only two to three days, I really just need you to be a clearing house. **You’re like my vending machine. I swipe my insurance card, just give me the antibiotic.**” (Physician, Health System Affiliated Urgent Care)¹

“I need to meet them in some way that not just recognizes that I care about them but also don’t want them to suffer. Oftentimes, people think if I don’t give them something, I want them to suffer with their illness. That’s not the situation, as physicians know, but dealing with patient perception and **getting over that hurdle is not always something I can do in 15 minutes.**” (Physician, Community Family Medicine Clinic)¹

“The patient who comes in and says, I’ve had this before, **my doctor upstairs always gives me an antibiotic** even if only two to three days, I really just need you to be a clearing house. **You’re like my vending machine. I swipe my insurance card, just give me the antibiotic.**” (Physician, Health System Affiliated Urgent Care)¹

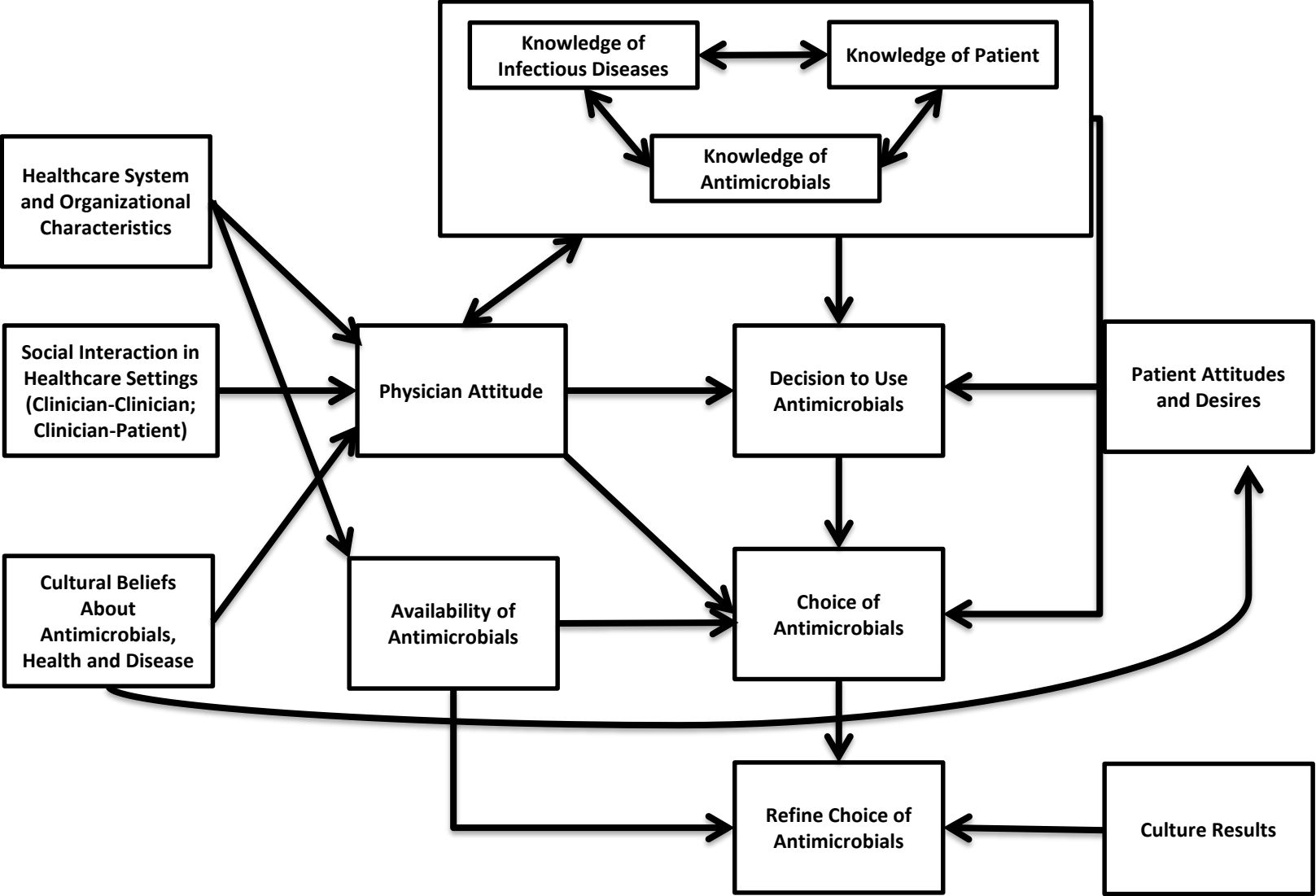
“I was a hospitalist for a while and antimicrobial stewardship in the inpatient setting is much more black and white. Whereas in an outpatient setting there are so many variables. It’s more floating and flowing. **For instance, you have a parent saying ‘we’re leaving in two days for Cape Cod. We haven’t had a vacation alone in six years’ and then you’re like ‘well, he does look a little red.’ [Laughter] You know, I’m a parent too so I understand.**” (Pediatrician, Academic Pediatric Primary Care Practice)²

Antibiotic Stewardship and Behavior Change

- Traditional Antibiotic Stewardship (AS) interventions use different strategies (both persuasive and restrictive) to **change the prescribing behaviors** of frontline clinicians¹
 - Education
 - Audit and Feedback
 - Restricted Formularies
 - Prior Approval
- Prescribing behavior is a complex, multifactorial process

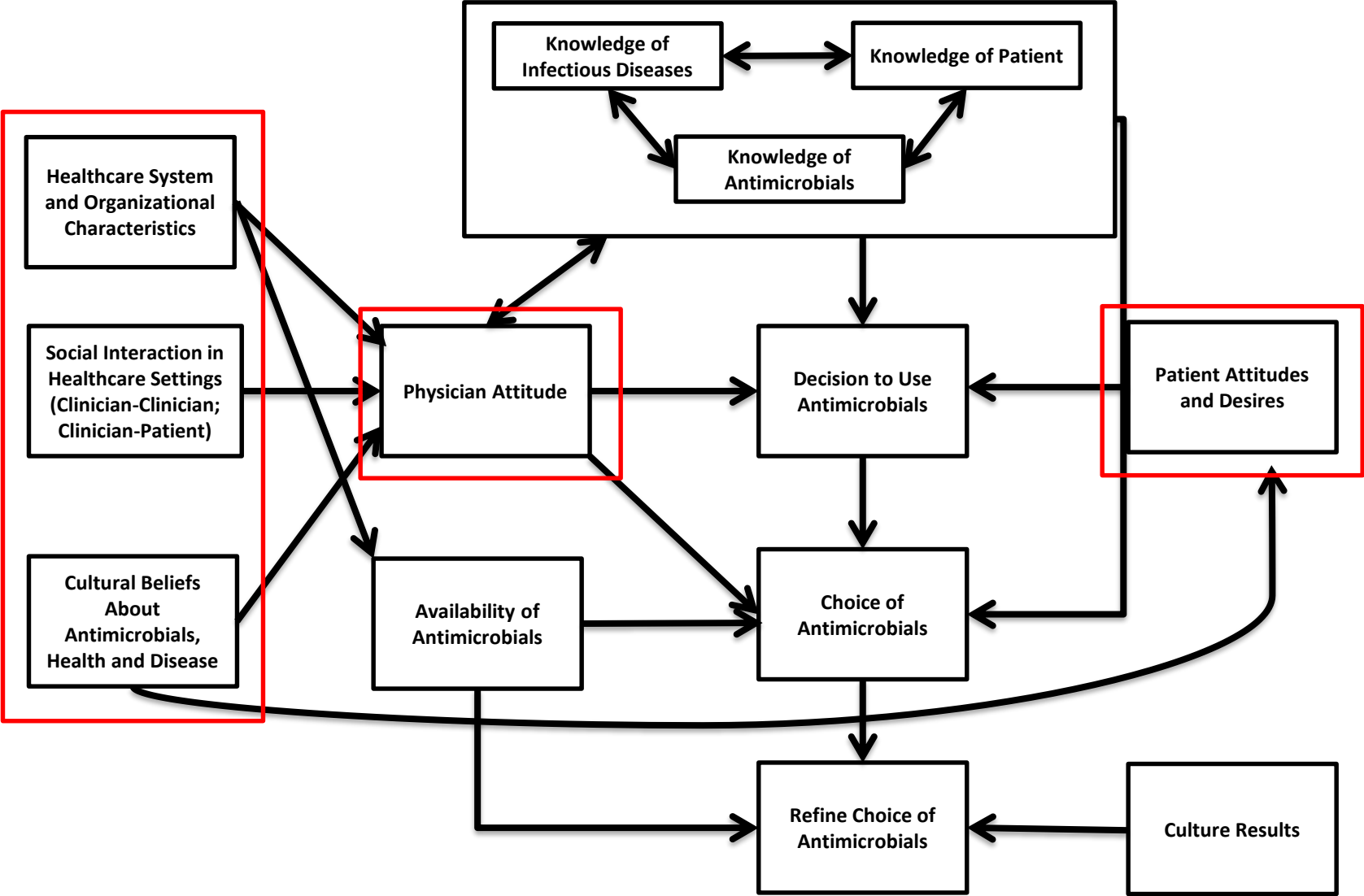
(1) Davey et al. (2017) Feb 9 *Cochrane Database Syst Rev*

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.

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.

Sociobehavioral Determinants of Antibiotic Prescribing

- Research 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
 - 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

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

Sociobehavioral Drivers of Excessive Antibiotic Prescribing in Outpatient Settings

1.) Patient demand^{1,2,3}

- Don't want patient to go home empty-handed⁴
- Explaining why antibiotics are unnecessary is unrewarding and time-consuming⁵
- Desire to avoid conflict⁶
- Fear losing patients to other practices who use antibiotics more liberally
- Fear of patients leaving bad reviews online
- Overestimation of patient demand – prescribing on the basis of perceived rather than actual patient expectations⁷⁻¹²

(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) Germani et al. *Br J Gen Pract* 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

Sociobehavioral Drivers of Excessive Antibiotic Prescribing in Outpatient Settings

2.) Risk Perception, Discomfort with Uncertainty and Fear

- 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 and management of ARTIs – is it viral or bacterial?⁵
- Fear of worst case scenario, prescribing “just to be safe”
- Fear of being sued

(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) Germani et al. *Br J Gen Pract* 2018

Sociobehavioral Drivers of Excessive Antibiotic Prescribing in Outpatient Settings

3.) Contextual and Environmental Factors

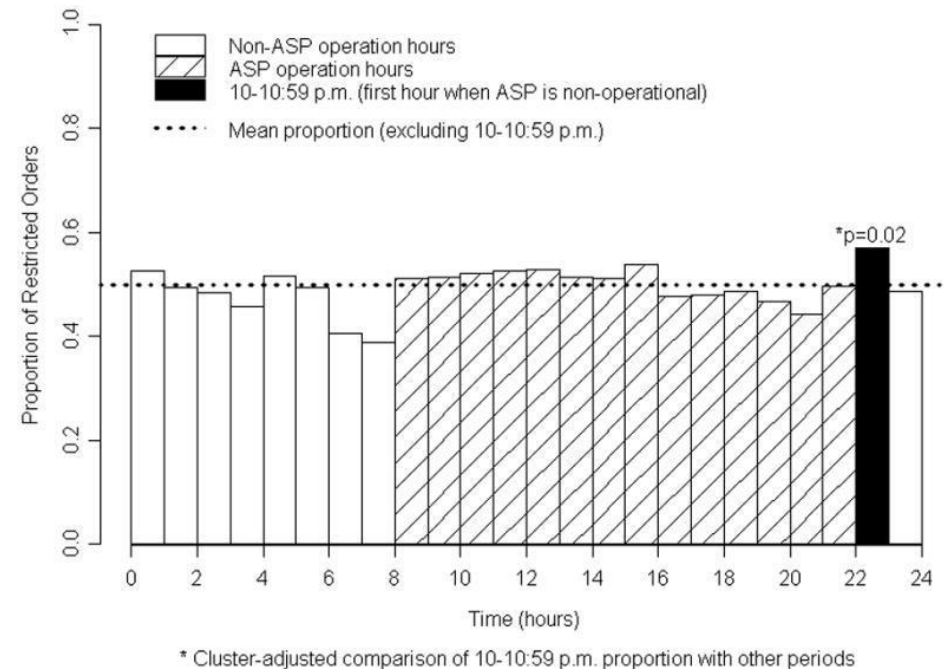
- Time pressures - practice volume and throughput pressures discourage communication with patients¹
- Time of day and decision fatigue²
- Time of the week and the “Friday prescription”³
- Competing priorities – patient satisfaction scores⁴
- Continuity of care – confidence in prescribing decisions through familiarity of what is “normal” for the patient⁵
- 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

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

Implications for Stewardship

- Although stewardship 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



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**
 - Adverse effects underappreciated²
 - “I guess his ear does look a little red...”
 - Setting and managing expectations



How do you change social norms?

Engage in a Little “Antibiotic Judo”

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



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) _____

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](https://www.cdc.gov/getsmart).

Signature(s) _____

A black ink signature is written on a light grey horizontal line. The signature is cursive and appears to be a woman's name.

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.

^b $P=.02$ for the difference.

^a Adjusted for demographic characteristics and insurance status.

Why Did 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

2. The importance of thinking of change in healthcare as a sociobehavioral process

*“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)



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
HEALTH AFFAIRS 29,
NO. 1 (2010): 165–173
©2009 Project HOPE—
The People-to-People Health
Foundation, Inc.

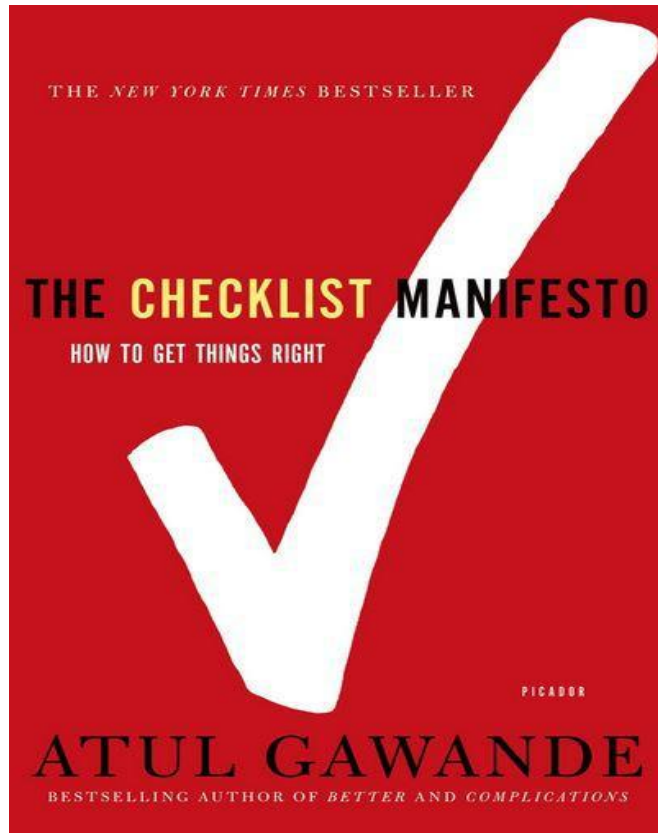
Patient Safety and Healthcare Quality Improvement: Inconsistency and Variation

- Enduring gaps between clinical practice and recommendations based on evidence (Grol & Grimshaw 2003)
- Variation in success of QI interventions when implemented across settings (Dixon-Woods 2014; Szymczak 2018)
 - Only 30% of healthcare organizations involved in QI collaboratives may achieve “significant improvements” and another 30% drop out before the end (Øvretveit et al. 2002)

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



Beware the “Simple Checklist” Story!



THE
NEW YORKER

News Culture Books Business & Tech Humor Cartoons Magazine Video Pod

THE CHECKLIST

If something so simple can transform intensive care, what else can it do?

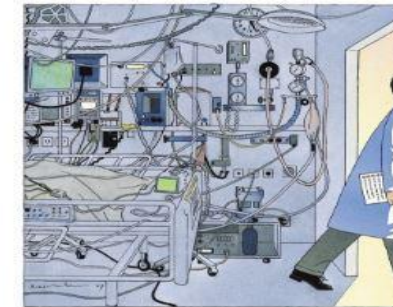


By Atul Gawande



The damage that the human body can survive these days is as awesome as it is horrible: crushing, burning, bombing, a burst blood vessel in the brain, a ruptured colon, a massive heart attack, rampaging infection. These conditions had once been uniformly fatal. Now survival is commonplace, and a large part of the credit goes to the irreplaceable component of medicine known as intensive care.

It's an opaque term. Specialists in the field prefer to call what they do “critical care,” but



If a new drug were as effective at saving lives as Peter Pronovost's checklist, there would be a nationwide marketing campaign urging doctors to use it.

Illustration by Yan Nascimbene

Beware the “Simple Checklist” Story!

- This narrative obscures social mechanisms that led to change (Bosk et al. 2009; Dixon-Woods et al. 2013)
 - Engaged leadership
 - Social network of ICUs across the state
 - Leveraging infection data to promote accountability
 - Reframing CLABSI from “cost of doing business” to unacceptable
 - Bolstering culture 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 (Reames et al. 2015; Bion et al. 2013)

Adaptive vs. Technical Problems in Healthcare Organizations



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

(Pronovost 2011)

**“The Simple Checklist Story:”
A Cautionary Tale for Commitment Posters?**

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







Your Logo Here



Antibiotics: handle with care!

Our hospital

In this hospital we are committed to use antibiotics prudently and to ensure that they remain effective

-  We follow infection prevention and control guidance
-  We initiate antibiotic treatment as soon as possible in patients with severe infection
-  We ensure that relevant cultures are taken timely
-  We re-evaluate treatment after 48–72 hours, or when results from microbiological samples are available
-  We prescribe according to evidence-based hospital antibiotic guidelines for common infections and for surgical prophylaxis
-  We inform our patients of any antibiotics prescribed, and their potential adverse effects



If you want to know more about the antibiotic stewardship programme in your hospital, contact [email address] or call [phone number]. See more information at [hospital website].

The statements in this poster are supported by scientific evidence. Visit <http://antibiotic-stewardship.europa.eu> or scan the QR code.




Your Health is Important to Us

That's why we guarantee we will do our best to prescribe

antibiotics only when you need them.



Antibiotics don't work for viral infections like the common cold, most coughs, and most sore throats.

Antibiotics kill "good" bacteria in your body which can cause side effects such as diarrhea or yeast infections.

We promise to prescribe antibiotics only when the benefits outweigh the risks.

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.

Your Logo Here



I made a commitment
to responsible
antibiotic prescribing!



Susan E. Coffin, MD, MPH

Susan Coffin

Medical Director
HAI/AR Program
Philadelphia Department of Public Health

Cold or Flu? Antibiotics Won't Help You!

The Philadelphia Department of Public Health
is committed to only prescribing antibiotics for bacterial infections.



Antibiotics are used to treat infections caused by bacteria.

They don't work for viral infections like
the common cold, flu, bronchitis, or sinusitis.

When not needed, antibiotics will not help you, and
they might cause you harm.

Learn more about antibiotic resistance and stewardship at:
www.health.state.mn.us/onehealthabx



Eva Teszner

Susan Coffin

Phillip Hahn

Kristin Privette

Tina Peritz

Jane Gould



Learn more about antibiotic resistance and stewardship at:
www.health.state.mn.us/onehealthabx



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



4 Sociological Tips for Implementing the Commitment Poster

1. Don't omit the signature and the photo!

Sociological Tips for Implementing the Commitment Poster

1. Don't omit 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 are right to allow the “special sauce” to cause behavior change
 - 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”

Sociological Tips for Implementing the Commitment Poster

3. Think about the context in which the poster is hung
 - Beware “sign blindness”

Sociological Tips for Implementing the Commitment Poster

3. Think about the context in which the poster is hung
 - Beware “sign blindness”

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

Social Driver Diagrams: A Way to Identify and Address Adaptive Challenges to Implementation

Driver Diagrams

- Visual display of a team's theory of what “drives” the achievement of project aim
- Shows the relationship between overall aim of the project
 - Primary drivers
 - Secondary drivers
 - Specific change ideas to address secondary drivers
- Institute for Healthcare Improvement has lots of great resources on driver diagrams
 - <http://www.ihp.org/resources/Pages/Tools/Driver-Diagram.aspx>

Driver Diagrams

- Represents team members' current theories of cause and effect in the system
 - What changes will likely cause desired effects?
- Helps focus efforts on specific things to work on to achieve aim
- 3 components
 - Primary Drivers – big categories of work needed to reach aim
 - Secondary Drivers – changes needed to make to influence primary drivers
 - Change Package – what you actually have to do to make the changes work

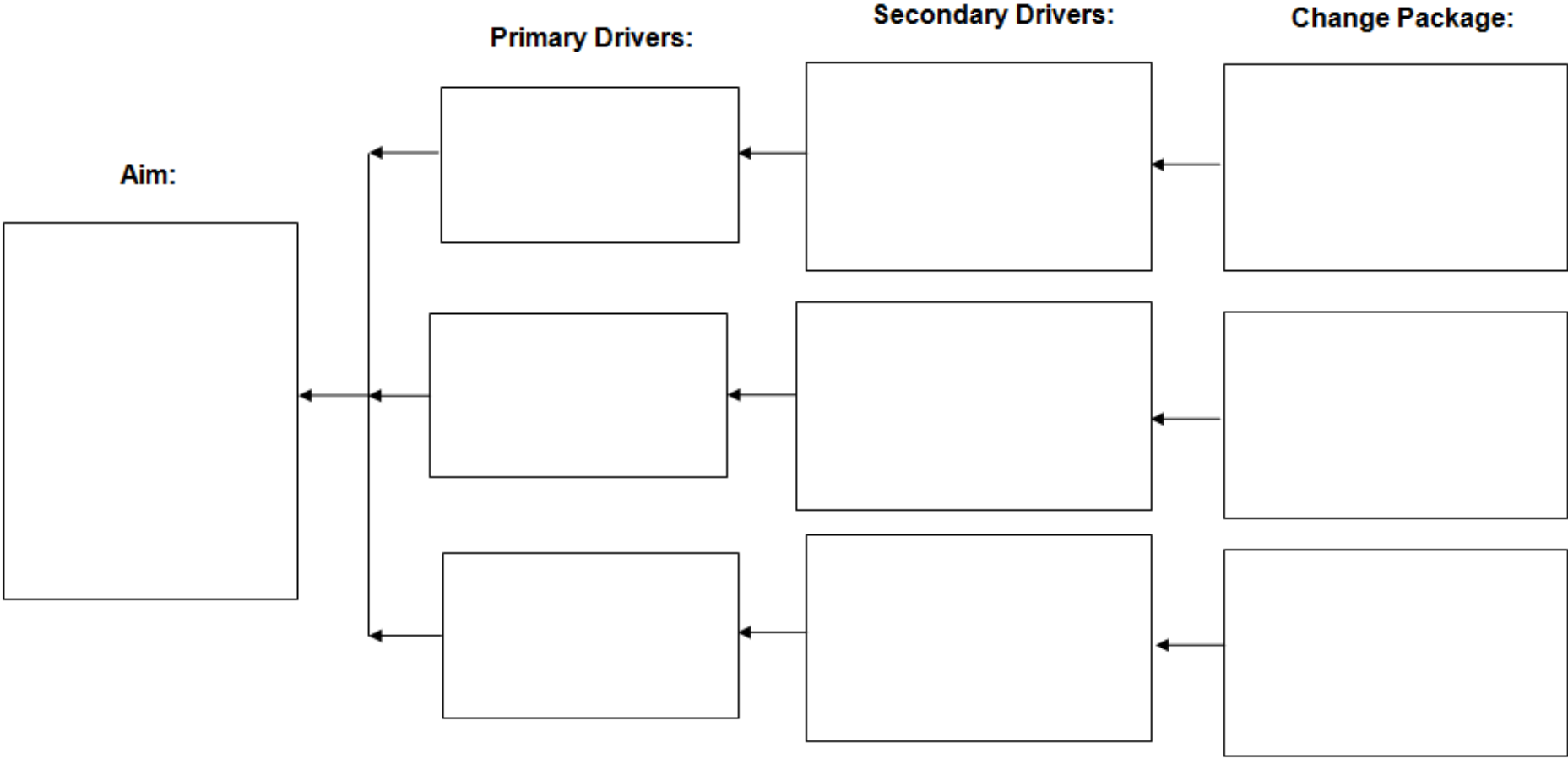
Social Driver Diagrams

- Adaptation of driver diagram concept to focus on the social, cultural, emotional and psychological factors that shape improvement efforts
- Often these drivers are very complex and require focused attention above and beyond what is typically allocated for system transformation
 - Not just “let’s change the culture”
 - Avoid unintended consequences and inaction by being specific (Szymczak 2014)

Social Driver Diagrams

- Can be used in conjunction with a traditional driver diagram
- Goal is to sensitize you to the possible sociobehavioral factors that shape aim
 - Or point you to areas where more investigation is needed
- Primary drivers should all be sociobehavioral in nature

DRIVER DIAGRAM



Creating a Social Driver Diagram

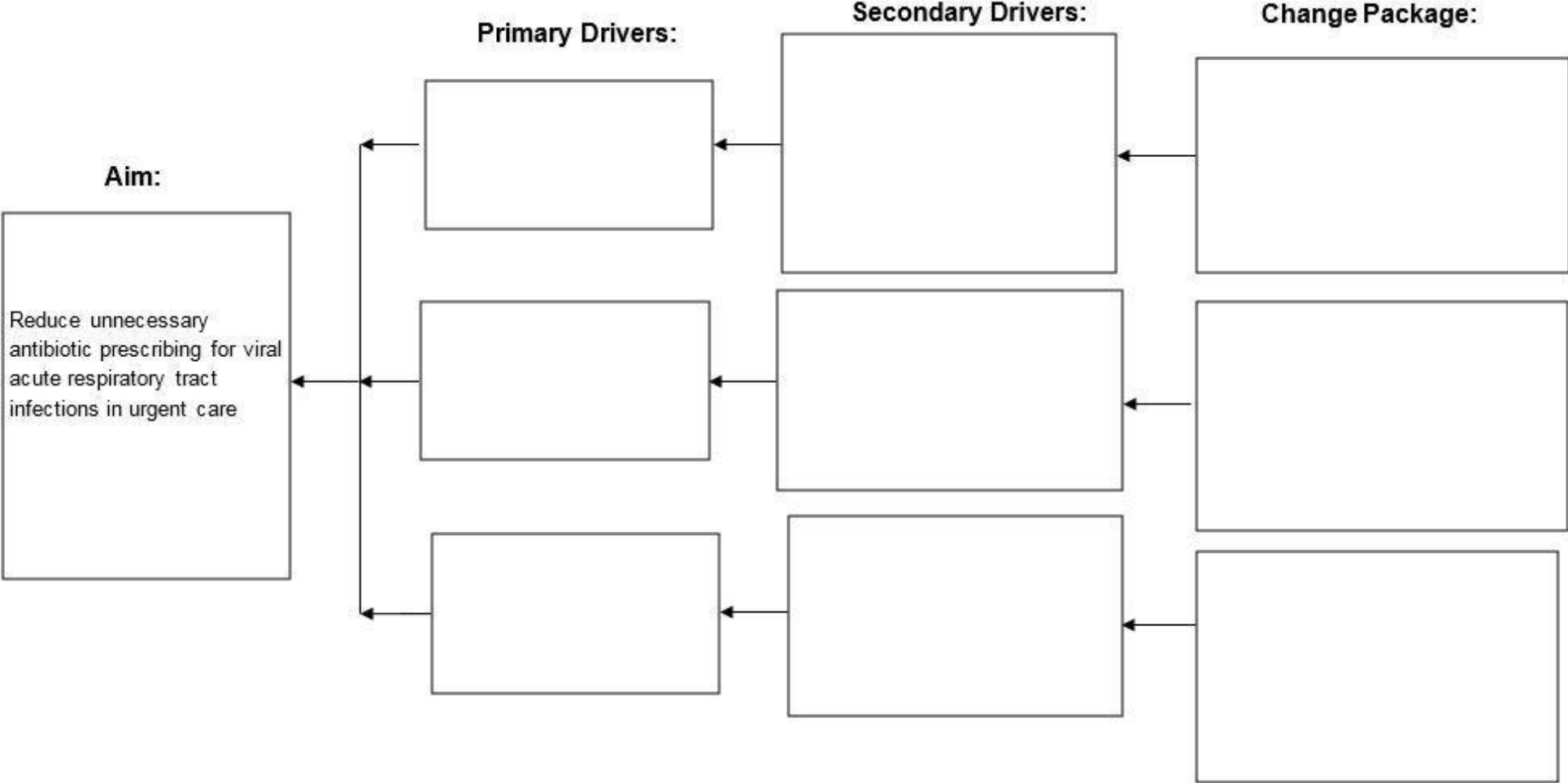
- 1.) Determine the “aim” – what do you want to change?
- 2.) Brainstorm all of the social or cultural drivers that might impact the aim (don’t worry about whether drivers are primary or secondary)
 - Consider whether more investigation needs to be done
 - Consider who is identifying these drivers
 - Consider if others need to be brought to the table
- 3.) Thematically group the drivers and give them headings to summarize the content of the group
 - The **headings** are the **primary drivers**
 - The **grouped items** are the **secondary drivers**
- 4.) Brainstorm possible interventions or steps you need to take to impact each secondary driver

A Social Driver Diagram in Practice

Example

Reducing unnecessary antibiotic prescribing for viral acute respiratory tract infections in an urgent care practice affiliated with your hospital.

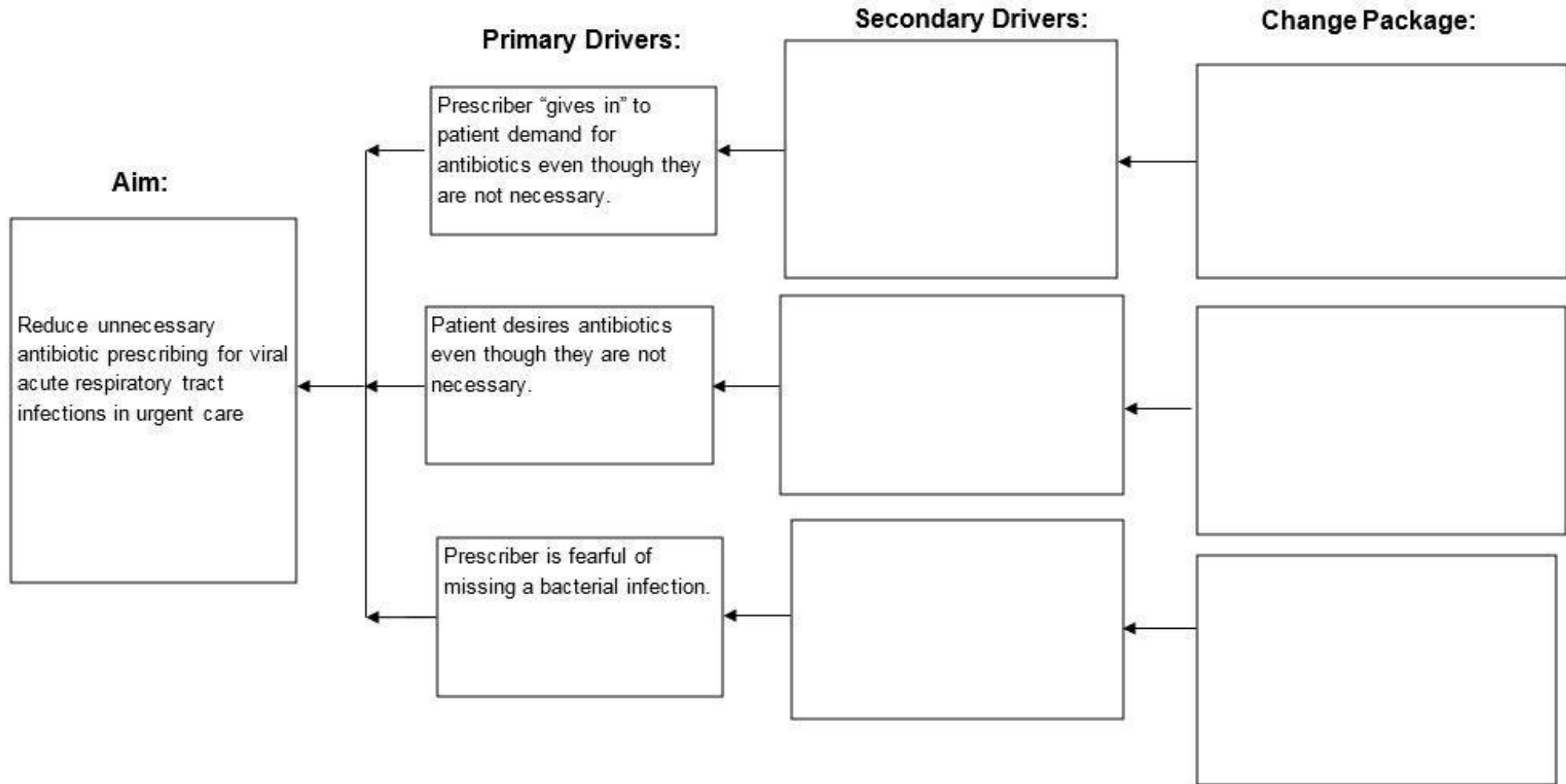
SOCIAL DRIVER DIAGRAM



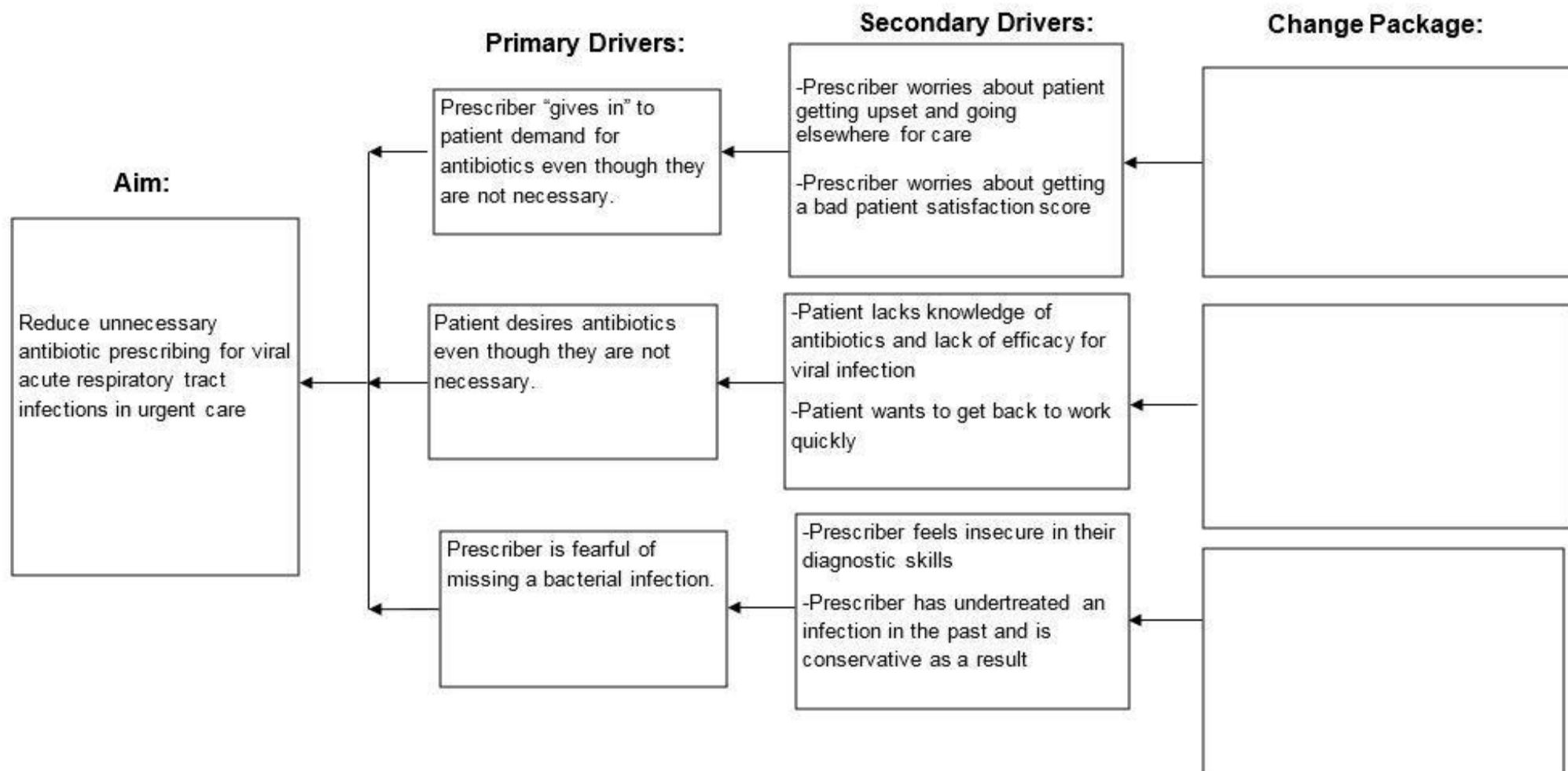
Creating a Social Driver Diagram

- Assemble your team
 - Who do you know from the practice that is even remotely sympathetic to your aim?
 - What resources do you need to investigate possible drivers?
- Conduct a sociobehavioral evaluation to understand the drivers of antibiotic overuse in the practice
 - One on one interviews or over-lunch focus group discussions
 - Keep it simple
 - Do you think antibiotic overuse is a problem in this practice?
 - What might drive antibiotic overuse in this practice?
 - What tools could help improve antibiotic overuse?
 - Think of another intervention you've implemented here. How well did it go? What, in your opinion, influenced it's success?

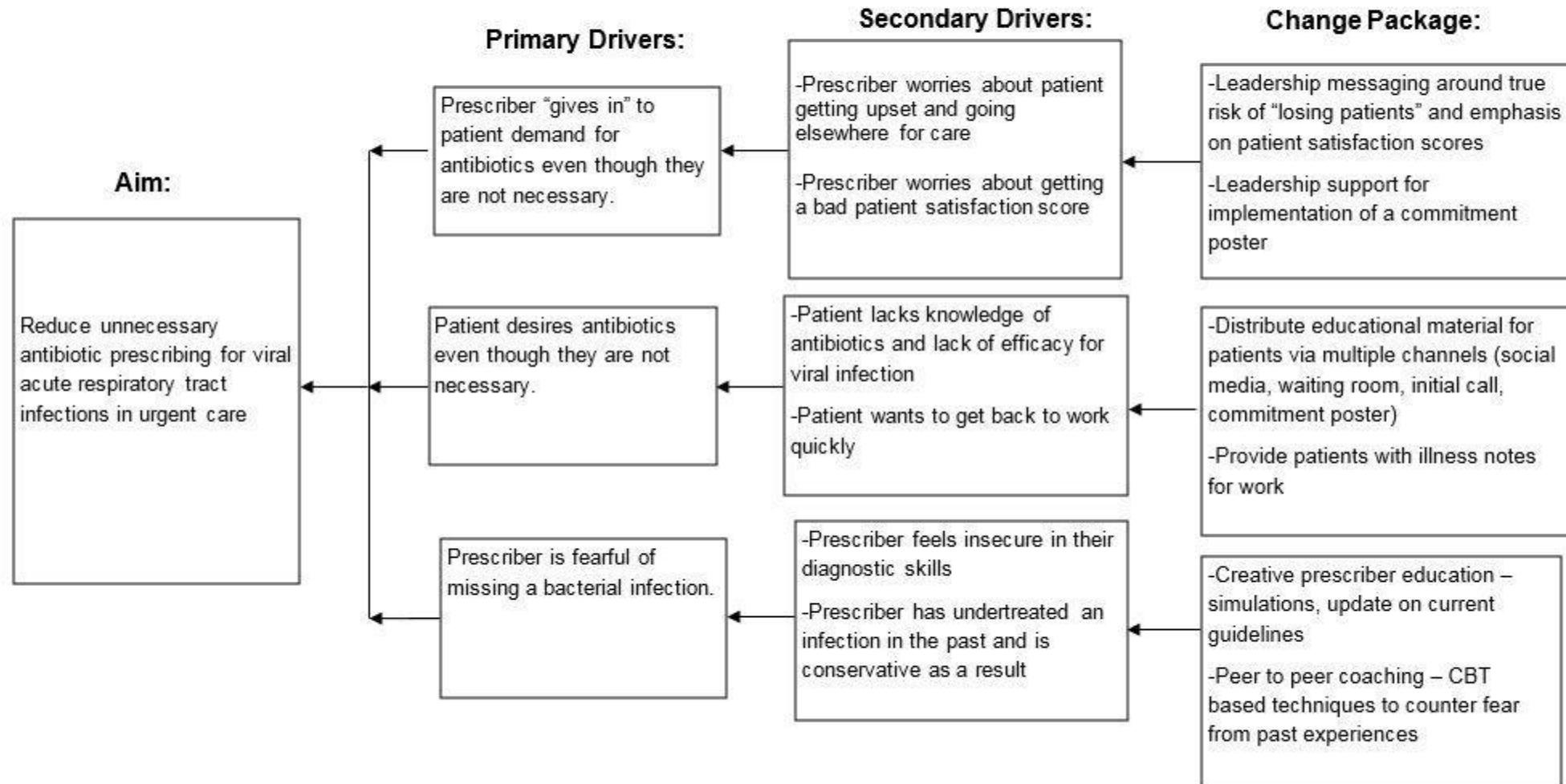
SOCIAL DRIVER DIAGRAM



SOCIAL DRIVER DIAGRAM



SOCIAL DRIVER DIAGRAM



Creating a Social Driver Diagram

- This tool can fit into already-existing quality improvement interventions and be used for anything you are trying to implement
- The key is that you take the time to explicitly define your aim in sociobehavioral terms
 - Identify possible interventions that are informed by realities of the social, behavioral, environmental and cultural context of the place where you want change to occur

Key Take-Aways

1. Outpatient 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

2. Implementing antibiotic stewardship interventions involves sociobehavioral work

- As you begin your efforts to implement stewardship in your setting take the time to think specifically about the adaptive challenges you might face and the resources you'll need to counter them
- The key = relationship-building, communication and efforts to understand

Questions?

jszymcza@pennmedicine.upenn.edu

(215) 898-1793



"Don't forget to take a handful of our complimentary antibiotics on your way out."