Making Antibiotic Resistance Real Through Storytelling

A Guide for Clinicians to Drive Action on Antibiotic Resistance Using Their Personal Experience

As clinicians, you see firsthand the effects of antibiotic resistance on your patients and public health. Not only are you in a position to prevent detrimental outcomes, but polls show that doctors are among the most trusted professions. Your experiences and insight can illustrate the problem in a compelling way that leads to action.

Last year Dr. Scott Weissman, a member of the Clinician Comprehensive Antibiotic Stewardship (CCCAS) Collaborative, testified to Congress about his battle with a nearly untreatable infection that presented in one of his patients. His testimony is an example of how stories can change minds and policy. Health Care Without Harm and the CCCAS Collaborative offer the following guidance to help clinicians tell their stories to motivate transformative policy change.

Early in my career as a Pediatric Disease specialist, I was asked to consult on a patient who had been born with a condition called bladder exstrophy, where her bladder was not fully enclosed at birth. She had had dozens of surgeries in her life to provide her with normal functioning and quality of life. She had suffered urinary tract infections more frequently than other children her age, and had received more than her fair share of antibiotics to treat them, but was being referred to me because the bacteria were increasingly difficult to treat.

For the next three years, we struggled to get these infections under control, but had only brief periods of symptom-free health before infection would return, showing up as stomach pain, flank pain, headache. We tried antibiotics by mouth, antibiotics by IV, antibiotics into the muscle, even antibiotics directly into the bladder. We tried antibiotics one at a time and in combination. We tried probiotics, cranberry

KNOW YOUR AUDIENCE. Who is listening? Are they well-informed? Although you may have a deep understanding of the issue, it doesn't mean your audience does. Aim to balance the details you want to give them with what they need to hear.

Prompt: What does your audience care about: the health of their family, their community, reducing costs, etc.?

MAKE THE ISSUE PERSONAL. Starting the testimony with a story about a patient creates a space where the audience can connect with the issue on a personal level.

Prompt: Think of a time when you had a patient or loved one struggle with antibiotic resistance. How did that change your perspective?

juice, and a full array of alternative therapies that I learned about as we went.

This patient taught me much of what I know about managing resistant infections in complicated patients. But being a specialist at an academic referral center, I didn't fully appreciate how this kind of antibiotic resistance was changing medicine even for the community pediatrician. What I learned during her care was that she was infected with an E. coli strain called Sequence Type 131. First described in 2008, after having already swept the globe, this single nasty, vicious strain has reshaped the treatment of urinary tract infections, just as the community-associated methicillin-resistant Staphylococcus aureus strain USA300 had done for skin and soft tissue infections.

According to data from the Centers for Disease Control, for every 10 residents in Washington state (where I practice), healthcare prescribers give out six antibiotic prescriptions. On average, more than half of us in Washington are getting an antibiotic prescription every year. Kids actually get more than that, on average receiving at least one antibiotic prescription a year through their first decade of life.

If that sounds like a lot, consider that Washington state is among the lowest in all 50 states in terms of prescribing antibiotics. For every 10 residents of southern and southeastern states, the rate is double that of Washington state—some 12 prescriptions per year.

If we add up all the antibiotics used for human health in the United States every year, given to children, given to adults, given to the previously healthy, given to the chronically ill, in clinics and in hospitals, around seven million pounds of antibiotics are sold. That's a big pile of antibiotics. In comparison, we use four piles of that size in animals, and up to three of those piles for healthy animals that we are raising for food.

EXPLAIN WHY YOU CARE, WHY YOU ARE TELLING THIS STORY. You have the personal experience and understanding of the implications if the problem goes unchecked. From your perspective, what do we need to do about it? Look for ways to present information and opportunities to audiences in accessible ways, both verbally and visually.

Prompt: How does the rising threat of antibiotic resistance impact you, your family, your professional role?

ZOOM OUT AND EXPLAIN THE BROADER ISSUE AS YOU SEE IT. Now you have established the personal connection, you can paint a picture of the broader issue. An effective way to do this is to learn along with the audience, don't lecture or talk down to your audience. Allow your experience and observations to color the explanation and use your own voice (avoid academic or jargony words).

Prompt: Why do you feel antibiotics are overused?

In fact, we use more of a single class of antibiotics–the tetracyclines–for food animal production than we use antibiotics of all classes for humans.

My patient has come through her bouts of recurrent infection with the highly resistant E. coli strain, and has reached a new normal where she experiences occasional infections with a different and much easier to treat E. coli strain. But the seven years she spent under a cloud of anxiety and dread, never more than a month away from her last bout of nausea, vomiting and back pain or her last dose of broad-spectrum antibiotics, gave us both a frightening glimpse of a future that is arriving for more patients around the globe every day.

Our current practice of medicine in the United States is built on the back of life-saving antibiotics. If these agents lose their therapeutic power, we will be left with a healthcare system that we do not recognize. What is now routine will no longer be routine. Not only will we lose the power to save lives with chemotherapy and bone marrow transplant, we will be unable to restore function and hope with cardiac bypass surgery and joint replacements. We may lose the ability to treat what have become routine infections of the skin and bones in pediatric patients. Preserving these agents will require that each of us consider how we may become effective stewards for these precious resources in our capacities as patients, parents, prescribers and policymakers, whether in a clinic, in a committee, or at the cashier when buying food.

REVISIT THE START OF THE STORY, BUT WITH THESE NEW DETAILS AND PERSPECTIVE. What is the hope you have, the opportunity you would like to see for your patients (and by extension the audience)?

Prompt: What do you think could change if meat production no longer used massive amounts of antibiotics?

LEAVE THE AUDIENCE WITH A CALL TO ACTION. Now that they're on your side, what can your audience do to address the issue?

Prompt: How can your facility transition to meat raised without routine antibiotics?

IMPORTANT! Review your story for any protected health Information. To ensure you do not violate HIPAA regulations and divulge any information that would threaten the privacy of your patients, abstain from noting any demographics of patients. Here are some additional helpful tips from the Association of Health Care Journalism: http://healthjournalism.org/resources-tips-details.php?id=12#.V4kjZ_krLIV

Key Facts on Antibiotic Resistance

Incorporate the following (or other relevant) key facts into your story to provide scientific context.

- CDC estimates that in the United States, more than two million people are sickened every year with antibiotic-resistant infections, with at least 23,000 dying as a result.[1]
- Antibiotics are among the most commonly prescribed drugs used in human medicine. However, up to 50% of all the antibiotics prescribed for people are not needed or are not optimally effective as prescribed.[1]
- Antibiotics are responsible for nearly one out of five emergency department visits for adverse drug events.[1]
- [Antibiotic misuse results in] at least $1 billion in excess medical costs per year.[1]
- Approximately 80% of the overall tonnage of antimicrobial agents sold in the United States in 2012 was for animal use, and approximately 60% of those agents are considered important for human medicine.[2]
- Methicillin-resistant Staphylococcus aureus (MRSA) is prevalent in meat and poultry in the United States; samples from 5 U.S. cities demonstrated S. aureus contamination in 77% of turkey samples, 42% of pork samples, 41% of chicken samples, and 37% of beef samples. Ninety-six percent of S. aureus isolates were resistant to at least 1 antimicrobial agent, and many were additionally resistant to other antimicrobial classes.[2]
- Infants and children are affected by transmission of susceptible and resistant food zoonotic pathogens through the food supply, direct contact with animals, and environmental pathways.[2]
- In 2013, a total of 19,056 infections, 4,200 hospitalizations, and 80 deaths were reported to the Foodborne Diseases Active Surveillance Network, a CDC surveillance system covering 15% of the U.S. population.[2]
- About 90% of the antibiotics used in agriculture are given as growth-promoting and prophylactic agents, rather than to treat infection.[3]
- The recommended levels of antibiotics for feeds were just 5-10 ppm in the 1950s but have been increased by 10- to 20-fold since then.[3]
- The scale of agricultural use of antibiotics is enormous: in terms of annual quantities, their use in animals is 100 to 1000 times that in the human population.[3]
- The U.S. Interagency Task Force for Combating Antibiotic-Resistant Bacteria outlines five core goals for implementing the National Strategy on Combating Antibiotic-Resistant Bacteria and addressing the policy recommendations of the President's Council of Advisors on Science and Technology (PCAST) report on Combating Antibiotic Resistance.[4]
- Current actions to address antibiotic use in animal agriculture is limited to pursuing additional research and data collection rather than action to reduce use.[4]

1) Centers for Disease Control and Prevention. (2013). Antibiotic Resistance Threats in the United States, 2013. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/drugresistance/threat-report-2013/

2) Paulson, J. A., Zaoutis, T. E., Health, T. C. on E., & Diseases, T. C. on I. (2015). Nontherapeutic Use of Antimicrobial Agents in Animal Agriculture: Implications for Pediatrics. Pediatrics, 136(6), e1670–e1677. http://doi.org/10.1542/peds.2015-3630

3) Khachatourians, G. G. (1998). Agricultural use of antibiotics and the evolution and transfer of antibiotic-resistant bacteria. CMAJ: Canadian Medical Association Journal, 159(9), 1129–1136. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1229782/

4) Interagency Task Force for Combating Antibiotic-Resistant Bacteria. (2015). National Action Plan for Combating Antibiotic-resistant Bacteria. The White House. Retrieved from www.whitehouse.gov/the-press-office/2015/03/27/fact-sheet-obama-administration-releases-national-action-plan-

Putting Your Story into Action

Your story can be used in many forms to engage multiple audiences in driving change. As a clinician your voice has a powerful effect among multiple spheres of influence. Share your story in everyday education, in conversation with peers, in testimony to legislators, in communicating with your health facility leadership to motivate action towards comprehensive stewardship.

WITH YOUR LEGISLATORS. Use your story to convey urgency with legislators to address the use of antibiotics in animal agriculture through swift policy action and well-funded implementation of the responsible use of these life-saving medicines. As a clinician, you have a unique and respected voice that can speak to the public health implication unlike any other. Use this voice to advocate for healthy food policy through sign-on letters, in-person testimonials, and legislative visits.

WITH YOUR PEERS. Incorporate your story into discussions at interdisciplinary meetings or more formally via presentations at grand rounds or professional conferences. It is likely your personal experience will resonate with them and ignite the recollection of their own experience. Encourage them to develop a story from their own experience to do the same.

IN YOUR HOSPITAL. Tell your story as a key component in conversations with your facility administration to encourage the development of a Antibiotics Purchasing Resolution within your facility. Conveying how this issue impacts your ability to provide effective clinical care is a powerful way to motivate organizational change that has ripples beyond the hospital walls and into the food production system where the majority of antibiotics are used.

IN YOUR COMMUNITY. Telling your personal story and how antibiotic resistance has personally impacted your experience is an effective way to connect with your patients, family, and community at an individual level. Providing opportunities for action whether through individual purchases, or when cost-prohibitive, through policy advocacy is a way to empower those you interact with.

Additional Resources

The following resources offer additional guidance and support for the storytelling process.

- www.narrativepractice.org - The Center for Narrative Practice believes that narrative, stories, and storytelling should be recognized as a part of all disciplines and fields, and that storytelling is a learned skill that can aid the world in becoming a more humane, accepting, and moral place.
- www.centerforcommunicatingscience.org/ - The Alan Alda Center for Communicating Science works to enhance understanding of science by helping train the next generation of scientists and health professionals to communicate more effectively with the public, public officials, the media, and others outside their own discipline.
- www.narrativemedicine.org/ - The Columbia University Program in Narrative Medicine fortifies clinical practice with the narrative competence to recognize, absorb, metabolize, interpret, and be moved by the stories of illness.
- www.hatchforgood.org/ - Hatch offers a suite of tools and a growing community that can help leverage the power of narrative to increase reach, resources and impact for social impact organizations.

Get Involved

Interested in joining a clinician network active in promoting comprehensive antibiotic stewardship through policy, education, and procurement? Learn more and sign up for the Clinician Champions in Comprehensive Stewardship (CCCAS) collaborative at https://noharm.org/CCCAS.