

# RESISTANT MICROBES START SMALL

**B**efore I attended a 2016 gathering at the Vatican on antimicrobial resistance, I wasn't aware of how big an issue it had become. But as I sat through the discussions, listened to the facts and began to understand the realities, I began to recognize some patterns that go right back to my childhood.



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I grew up in a small town in central Illinois. My family and friends didn't use terms like "antimicrobial resistance," and we certainly didn't know what it was, even though we were contributing to it in multiple ways.

In a cabinet in our family's kitchen, there was a shoebox full of half-finished prescription medicines. My mother would save them — as soon as whoever was sick got to feeling better, Mom would put away any remaining doses. She was being thrifty, trying to save the \$30 or \$50 she would have to spend on a doctor visit and prescription the next time one of us came down with similar symptoms. None of us realized the shoebox system meant that "the potential for mis-application of antimicrobial therapy to non-susceptible organisms is significantly increased."<sup>1</sup>

One of my friends lived just outside of town, and his family raised hogs. As was routine for anyone growing livestock, my friend and his family gave their hogs feed enriched with antibiotics to promote health and quicker growth. No one knew the practice contributed to increasing microbes' resistance to antibiotics — and those microbes affect both animals and humans.

None of us, back then, realized there were long-term implications for what we were doing. We weren't acting maliciously, but we were contributing to a health problem that reaches far beyond central Illinois. At the Vatican gathering, I began to worry that in my adult world of international assistance with global health, my "friends and family" are unknowingly, but similarly, contributing to antimicrobial resistance.

## 2016 MEETING

Antimicrobial resistance is so important that the Dicastery for the Promotion of Integral Human Development at the Holy See hosted the 2016

meeting convened by the U.S. Department of State, Caritas Internationalis, Georgetown University's Berkley Center for Religion, Peace and World Affairs and the GHR Foundation. The goal was to identify opportunities to strengthen faith-based organizations' engagement in combatting the problem.

Listening to the content of the meetings, I began to recognize how my childhood experiences were relevant to antimicrobial resistance and how, similarly, there are areas associated with my current work in global outreach that inadvertently could be having a negative impact.

More importantly, I realized the importance of getting the message deep into society. Faith-based organizations like the Catholic Health Association have deep ties; we interact with those who will be affected by issues like antimicrobial resistance and with those who can help make change happen in the United States and around the world.

Today, thousands of Americans go on international mission trips to provide health care to poor and vulnerable people in the developing world. During these trips, many participants collect, deliver and prescribe pharmaceuticals to those they are trying to help. But do the individuals on those mission trips know whether language barriers or general misunderstanding result in misapplication of the pharmaceuticals?

Similarly, if the mission includes vaccine campaigns against various diseases, have the trip's organizers contacted the country's ministry of health, local health facilities and even other short-term missions to ascertain existing coverage in the area?

Both scenarios could lead to increased resistance of the microbes.

Combatting AMR also was a recommendation included in the National Academies of Sciences, Engineering and Medicine's report, *Global Health and the Future Role of the United States*.<sup>2</sup> According to that report, the current rate of development

of drug resistance could result in losses of 10 million lives per year and a cumulative loss of \$100 trillion in global economic output by 2050. In the United States, the U.S. Centers for Disease Control and Prevention estimates antimicrobial resistance results in 23,000 deaths and \$20 billion in excess direct health care costs annually, plus lost productivity costs as high as \$35 billion.<sup>3</sup>

Faith-based organizations have reach. They can reach individuals like my mother and my farming friend who had no idea that their actions can be part of a huge problem. If events happening in everyday life can be part of the problem, people who attend church, visit hospitals and clinics, and those who work in health care are an important part of the solution.

The report from the National Academies and the workshop report from the meeting I attended at the Vatican both have important considerations for our role as Americans, as members of Catholic health care and, most importantly, as individuals who are being affected by this crisis. Moving forward, it is important that we use these recommendations to educate ourselves regarding antimicrobial resistance and engage our patients and our communities in understanding the repercussions of our actions. Whether you are in Central Illinois trying to keep your family healthy, raising livestock or treating patients in your local facility or in a foreign country, we all are being called to engage more fully in the fight against antimicrobial resistance.

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#### NOTES

1. Carolyn Anne Michael, Dale Dominey-Howes and Maurizio Labbate, "The Antimicrobial Resistance Crisis: Causes, Consequences, and Management," *Frontiers in Public Health*, website, Sept. 16, 2014. [www.frontiersin.org/articles/10.3389/fpubh.2014.00145/full](http://www.frontiersin.org/articles/10.3389/fpubh.2014.00145/full).
2. National Academies of Sciences, Engineering, and Medicine, *Global Health and the Future Role of the United States* (Washington, D.C.: The National Academies Press, 2017). <https://doi.org/10.17226/24737>.
3. Centers for Disease Control and Prevention, *Antibiotic Resistance Threats in the United States*, 2013. [www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf](http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf).



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