

UW Health: Antimicrobial resistance a growing threat to public health

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MADISON, Wis. – Bacteria resistant to antibiotics cause more than a million deaths each year worldwide but taking steps to ensure they are properly used in healthcare settings can limit the spread of these “superbugs.”

Common bacterial infections like ear and urinary tract infections or strep throat are often treated with antibiotics including penicillin or amoxicillin. But, over time bacteria such as *E. coli* (the most common cause of urinary tract infections) develop resistance to commonly used antibiotics rendering them ineffective.

This type of resistance was responsible for more than 1.2 million deaths globally in 2019, according to [data](#) published in January 2022 by *The Lancet*.

However, there is much the medical field can do to prevent the proliferation of resistant bacteria, according to Dr. Michael Pulia, emergency medicine physician, UW Health, and assistant professor of emergency medicine, University of Wisconsin School of Medicine and Public Health.

“Antibiotics are powerful tools to cure deadly diseases, but we have to manage their use carefully or they will no longer remain the life-saving treatments that we rely on,” he said.

Pulia, who is also director of the federally-funded Emergency Care for Infectious Diseases research program at the UW School of Medicine and Public Health, and others who lead antimicrobial stewardship research programs focus on five steps: diagnosis, drug, dose, duration and de-escalation to improve the prescribing of antibiotics, he said.

Perhaps the most challenging and important of the “5 Ds” is diagnosis because you

first need to determine if the patient actually has a bacterial infection, Pulia said.

“Agencies and organizations that fund this type of research are very interested in developing more precise and consistent ways to diagnose bacterial illnesses, so antibiotics aren’t prescribed when they don’t need to be,” Pulia said.

U.S. Antibiotic Awareness Week, Nov. 18-24, is a great opportunity to explain the science of this problem and make people aware of the shared responsibility we all have to use these drugs in a sustainable way, according to Pulia.

“Making the public aware of the problem is a critical step so they are empowered to ask the right questions when health care providers recommend antibiotics,” he said. “The goal is to create a world where these drugs continue to be the cures they are today and avoid a post-antibiotic era characterized by needless deaths due to untreatable infections.”

Pulia is available for interviews today, and a recorded interview with him is also available.