

Antibiotic resistance is a international issue that better education can address

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Antibiotic resistance is an international reality whose solution includes better educating physicians about using bacteria-fighting tools, says an infectious disease physician.

"The big problem is the [overuse of antibiotics](#) in hospitals and communities because not only can they lead to [side effects](#) like rashes and colon damage, one of those side effects is development of multidrug-resistant organisms," said Dr. Jos#1104 A. Vazquez, Chief of the Section of Infectious Diseases at the Medical College of Georgia at Georgia Regents University.

These "bad bugs" know no bounds, said Vazquez, who is part of a panel discussing problems and solutions at the International Union of Microbiological Societies Conference on Antimicrobial Resistance being held in collaboration with the Cuban Society of Microbiology and Parasitology Nov. 14-16 in Havana.

In fact, despite its somewhat isolated status, Cuba is experiencing the same problem with [antibiotic resistance](#) as the United States and elsewhere, Vazquez said. Regardless of the country or whether it's a [hospital](#) or physician's office, the problem begins with overprescribing, and worsens with smart bacteria mutating to survive the drugs, the slightly-stronger bacteria being transferred among us, and few new antibiotics in the pipeline to stop them.

"If I am taking an antibiotic for something I don't need, it's a risk

factor," Vazquez said. The unnecessary exposure may prompt a bacterium to mutate – which can be as simple as altering a single protein – to escape elimination, and become resistant, at least to that drug.

But the math quickly works against patients. Many antibiotics are essentially families of drugs so resistance to one may wipe out the effectiveness of several, he said. And it's easy to spread the new bacterium through casual encounters, like hugging a relative or touching a doorknob. "You transmit it to your husband, your brother, your kids, and your kids got out and meet 10 other kids and so on," he said.

That's why infectious disease specialists like Vazquez and professional organizations like the Infectious Diseases Society of America and Centers for Disease Control and Prevention are advocating a multi-front retaliation. In fact, the Infectious Diseases Society of America has been making noise for more than a decade, with its Bad Bugs, No Drugs campaign calling upon the federal government and others to take decisive action.

Emerging initiatives include antimicrobial stewardship programs that keep tabs on the antibiotics physicians prescribe and following up with education when inappropriate trends surface. "We keep track to make sure patients are on the right antibiotic for the bug they have and use, when possible, a narrow spectrum antibiotic, instead of a broad-spectrum antibiotic," he said. Vazquez, who joined the MCG faculty this summer, is starting an antimicrobial stewardship program at Georgia Regents Health System.

In addition, to try and nip the problem in the bud, medical schools and residency training sites also need to beef up their educational efforts on the topic of appropriate antibiotic selection, said Vazquez, who is working on ways to do that at MCG and the GR Health System as well.

Vazquez notes that short-term side effects of [antibiotics](#) can include diffuse rashes, colitis, kidney failure, seizures, and even an increased risk of retinal detachment. Long-term antibiotic use also frequently leads to fungal infections, like invasive candidiasis, or thrush, because it can also destroy protective bacteria in the body.

However, selectively used, these drugs are needed to cure serious bacterial and fungal infections like pneumonia, cellulitis, and potentially even MRSA, one of the super bugs that resulted from antibiotic abuse.

Provided by Medical College of Georgia

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