

Antibiotic resistance among hospital-acquired infections is much greater than prior CDC estimates

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The rise of antibiotic resistance among hospital-acquired infections is greater than the Centers for Disease Control and Prevention (CDC) found in its 2008 analysis, according to an ahead-of-print article in the journal, *Antimicrobial Agents and Chemotherapy*.

The article also finds that the Food and Drug Administration's (FDA) promise to "reboot" antibiotic development rules a year ago to combat the rise in resistance has fallen short.

The commentary, whose authors include Brad Spellberg, MD, a Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center (LA BioMed) infectious disease specialist, analyzed privately gathered data and concluded antibiotic resistance among hospital-acquired infections is "at crisis levels." The FDA's "reboot" pledge to encourage the development of [new antibiotics](#) to battle this resistance "cannot come too soon" but "will not be enough," the authors conclude.

"With antibiotic-resistant microbes infecting more than 2 million Americans every year and killing more than 100,000 annually, we must act to find new weapons in the global battle against deadly Superbugs," said Dr. Spellberg, M.D., who authored "Rising Plague," a book on antibiotic resistance. "Our analysis found the rise in antibiotic resistance among three common forms of hospital-acquired infections is much greater than previously reported by the CDC based on older data, leading

us to conclude that more than an FDA 'reboot' is needed. To encourage antibiotic development, the pharmaceutical industry must see that there is a path for a return on its investment in antibiotic development."

The authors found "very positive aspects" in the FDA's most recent guidance for antibacterial therapies for patients with unmet medical needs. But they said the FDA's approach to the development of [antibacterials](#) in traditional indications, such as pneumonia and [urinary tract infections](#), "has been mixed."

Their findings on the rise on [antibiotic resistance](#) among hospital-acquired infections include:

- The resistance for *acinetobacter* (*A. baumannii*) to carbapenems is more than 50%. The CDC found it to be 11%. Carbapenems are among the last available antibiotics. If they don't work, only one or two other drugs are left to battle these infections. Neither is very effective, and one is highly toxic.
- The resistance among *E. coli* to third generation cephalosporins (a class of antibiotics) was 8-11%. The CDC found it to be 5%.
- The resistance to *klebsiella* (*K. pneumonia*) to third generation cephalosporins was 20-27%. The CDC found it to be 15%. Resistance to carbapenems among these isolates is now between 7 and 11%.
- Carbapenems are already obsolete for a common Intensive Care Unit [infection](#), *Acinetobacter baumannii*. "This holds true for both intensive care and non-intensive care patients and for urinary and non-urinary infections," the commentary says.

"None of the antibiotics under development today can address all of these antibiotic-resistant infections," said Dr. Spellberg. "A complete overhaul of the approaches to resistance, disease and prevention could change the continuing upward trajectory of antibiotic resistant

infections. To do anything less invites a bleak post-antibiotic future, in which infectious diseases once again reign supreme."

Provided by Los Angeles Biomedical Research Institute at Harbor

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