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OP-ED COLUMNIST

The Spread of Superbugs

By NICHOLAS D. KRISTOF

Until three months ago, Thomas M. Dukes was a vigorous, healthy executive at a California plastics company. Then, over the course of a few days in December as he was planning his Christmas shopping, E. coli bacteria ravaged his body and tore his life apart.

Mr. Dukes is a reminder that as long as we're examining our health care system, we need to scrutinize more than insurance companies. We also need to curb the way modern agribusiness madly overuses antibiotics, leaving them ineffective for sick humans.

Antibacterial drugs were revolutionary when they were introduced in the United States in 1936, virtually eliminating diseases like tuberculosis here and making surgery and childbirth far safer. But now we're seeing increasing numbers of superbugs that survive antibiotics. One of the best-known — MRSA, a kind of staph infection — [kills about 18,000](#) Americans annually. That's more than die of AIDS.

Mr. Dukes, 52, picked up a kind of bacteria called ESBL-producing E. coli. While it's conceivable that he touched a contaminated surface, a likely scenario is that he ate tainted meat, said Dr. Brad Spellberg, an infectious-diseases specialist and the author of "[Rising Plague](#)," a book about antibiotic resistance.

Vegetarians are also vulnerable to antibiotic resistance nurtured in hog barns. Microbes swap genes, so antibiotic resistance developed in pigs can jump to microbes that infect humans in hospitals, locker rooms, schools or homes.

Routine use of antibiotics to raise livestock is widely seen as a major reason for the rise of superbugs. But Congress and the Obama administration have refused to curb agriculture's addiction to antibiotics, apparently because of the power of the agribusiness lobby.

The ESBL E. coli initially remained in Mr. Dukes's colon, causing no particular damage. But then he suffered an inflammation that perforated his colon — and the bacteria escaped.

Mr. Dukes began suffering stomach pains and saw his doctor, who gave him Cipro, a strong antibiotic that had previously worked against the infection. This time, the pain grew worse. The next evening, he was in surgery to remove eight inches of his colon.

A culture attributed the infection partly to ESBL E. coli. Doctors inserted a tube to administer an intravenous antibiotic in an effort to save his life.

If ESBL E. coli is frightening, there are even more potent superbugs emerging, like [Acinetobacter](#).

“We are seeing infections caused by Acinetobacter and special bacteria called KPC Klebsiella that are literally resistant to every antibiotic that is F.D.A. approved,” Dr. Spellberg said. “These are untreatable infections. This is the first time since 1936, the year that sulfa hit the market in the U.S., that we have had this problem.”

The [Infectious Diseases Society of America](#), an organization of doctors and scientists, has been bellowing alarms. It fears that we could slip back to a world in which we’re defenseless against bacterial diseases.

There’s broad agreement that doctors themselves overprescribe antibiotics — but also that a big part of the problem is factory farms. They feed low doses of antibiotics to hogs, cattle and poultry to make them grow faster.

A study by the [Union of Concerned Scientists](#) found that in the United States, 70 percent of antibiotics are used to feed healthy livestock, with 14 percent more used to treat sick livestock. Only about 16 percent are used to treat humans and their pets, the study found.

More antibiotics are fed to livestock in North Carolina alone than are given to humans in the entire United States, according to the peer-reviewed Medical Clinics of North America. It concluded that antibiotics in livestock feed were “a major component” in the rise of antibiotic resistance.

[Legislation](#) introduced by Louise Slaughter, a New Yorker who is the only microbiologist in the House of Representatives, would curb the routine use of antibiotics in farming. The bill has 104 co-sponsors, but agribusiness interests have blocked it in committee — and the Obama administration and the Senate have dodged the issue.

After weeks of receiving intravenous antibiotics, Mr. Dukes is now recovering at home in Lomita, Calif. He must use a colostomy bag, but he hopes to be patched up and ready to return to work next month. Still, he knows that the ESBL E. coli remains in his gut.

“As long as it’s contained in my colon, I’m a happy camper,” he said. “But if it gets out again, I’m in trouble.”

Dr. Martin J. Blaser, chairman of the department of medicine at New York University Langone Medical Center, and a former president of the Infectious Diseases Society of America, agrees that agricultural use of antibiotics produces cheaper meat. But he says the price may be an enormous toll in human health.

“You could have very lethal pandemics,” he said. “We’re brewing some perfect storms.”

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