

# Antibiotics in food chain affecting human health

By Monica Eng, Chicago Tribune

While Sam Spitz's friends were loading up on pizza for lunch, the Whitney Young High School sophomore opted for a chicken Caesar salad.

Spitz was in training for a big sophomore baseball season – after having pitched on the school's varsity team as a freshman – so, he says, he “wanted to make the healthy choice.”

But soon he was not so sure he'd chosen wisely. Severe gastric distress kept him in the bathroom for hours, and eventually he started losing blood.

After multiple trips to the emergency room, Spitz learned he'd been infected with an antibiotic-resistant strain of campylobacter, a pathogen most commonly linked to poultry. He blames the salad, as the chicken Caesar was his only source of poultry that week.

One month, 30 pounds and several failed antibiotics later, Spitz had lost his baseball season along with much of his confidence. He'd also lost a lot of faith in the “miracle drug” of the 20th century, antibiotics.

“I was 15 and I never pitched in high school again,” said Spitz, now 22. “I'd spent that entire offseason training, and I was stronger than I'd ever been. I thought I was invincible, but I watched myself and my baseball career wither away. ... I thought antibiotics were supposed to work. But they didn't and that was terrifying.”

Concern has been intensifying in recent years over the use of

antibiotics in agriculture, which world health authorities agree contributes to the development of drug-resistant bacteria. These so-called superbugs infect hundreds of thousands and kill tens of thousands of Americans each year, according to the Centers for Disease Control and Prevention.

Legislation before Congress would rein in the use of medically important antibiotics on healthy livestock through mandatory restrictions as well as public disclosure of how antibiotics are used on animals and in what quantity.

But such efforts face resistance from the meat industry, and the U.S. Food and Drug Administration says the issue is better handled through voluntary guidelines it hopes to finalize this year, including more veterinary oversight.

Critics doubt that a voluntary approach would decrease use and say the current lack of transparency would prevent anyone from knowing whether it did – an issue also noted by the Government Accountability Office.

Health authorities say antibiotics should be used sparingly because any bacteria that can survive the drugs will multiply, increasing the strain's overall resistance. Dr. Jean Patel, deputy director of the Office of Antimicrobial Resistance at the CDC, calls antibiotic resistance one of the nation's most serious health threats.

"Resistance often emerges in the health care setting where antimicrobials are commonly used," Patel said, "but these drugs are also used on the farm, and a number of foodborne pathogens, like salmonella, are becoming increasingly resistant to antimicrobials that are important for human health."

The Environmental Working Group, a research and advocacy group, analyzed government data and reported last month that 69 percent of pork chops and 81 percent of ground turkey sampled in 2011 were contaminated with antibiotic-resistant

bacteria. Turkey raised without antibiotics – including organic turkey – carries fewer such pathogens, according to recent research by Consumers Union, the advocacy arm of Consumer Reports.

About 80 percent of all antibiotics sold by weight in the U.S. in 2011 were used on livestock, according to FDA figures. That year, 7.3 million pounds of antibiotics were used to treat humans, compared with 29.9 million pounds sold for meat and poultry production.

All parties in the antibiotics debate agree that it makes sense to treat sick animals with appropriate antibiotics. And nearly all say that using antibiotics just to make animals grow faster – a practice long banned in the European Union – is, as the FDA puts it, “injudicious.”

If the FDA’s voluntary guidance is finalized this year, livestock producers will be asked to stop using antibiotics solely to fuel growth starting sometime in 2016. Antibiotics still could be given to animals to control and prevent disease, but licensed veterinarians would oversee the process.

Critics say the strategy is too weak. Noting that many antibiotics are marketed for growth promotion as well as disease prevention, environmental and consumer groups fear that animals will remain on a steady diet of antibiotics, if for different stated reasons.

“The first problem is that it is voluntary. As far as we are concerned the FDA has tried a voluntary approach on this for almost 40 years, and it hasn’t worked,” said Avinash Kar, an attorney who works on antibiotic issues for the Natural Resources Defense Council, an environmental advocacy group. “The second problem is that it leaves a giant loophole for so-called preventive uses.”

Dr. Bill Flynn of the FDA’s Center for Veterinary Medicine said the agency does not condone using preventive antibiotics

for “just whatever disease might come along” in a herd of healthy animals. “Licensed veterinarians will need to play a key role in making sure these drugs are used appropriately,” Flynn said.

A bill from Democratic Rep. Louise Slaughter of New York, a microbiologist, would take a stricter approach, aiming to preserve the effectiveness of medically important drugs by limiting their use in animal agriculture. But that effort does not have the support of the FDA or the major players in the livestock and pharmaceutical industries.

“Antibiotic resistance is a very complex topic,” said Liz Wagstrom, the National Pork Producer Council’s chief veterinarian. “And so what might be appropriate for one bacteria in one type of animal might not be appropriate for another. So the idea of legislating this with a broad-based ban doesn’t seem appropriate.”

Speeding growth with antibiotics allows animals to eat less food over a lifetime, leaving “more corn available for the production of renewable fuels and less manure for the producer to manage,” according to the pork council. It also says its research has found a negligible direct risk to humans from antibiotic resistance linked to agricultural uses.

Two other bills in the House and Senate would require the FDA to make public the data it collects on how the drugs are marketed and used on animals, as well as require the agency to collect more information that could indicate, for example, whether drugs are being used to compensate for unhealthy living conditions.

Flynn said the agency is exploring its own “approaches for enhanced data collection” with a goal of having some baseline data before the voluntary guidance goes into effect.

In addition to legislation, some advocacy groups have launched legal challenges. The Natural Resources Defense Council

successfully sued last year to compel the FDA to follow up on its own 1977 findings that nontherapeutic use of penicillins and some tetracyclines was leading to antibiotic resistance and should be stopped. The FDA has appealed.

In April, month Spitz and his mother, Jennifer Amdur Spitz, traveled to Capitol Hill with other survivors, scientists, doctors and chefs to support legislative action in Congress.

Everly Macario, of Chicago, who has a doctorate in public health from Harvard University, told of losing her 18-month-old son, Simon, in 2004 to methicillin-resistant *Staphylococcus aureus*, or MRSA.

Macario says her previously healthy and hardy boy contracted the infection one night and was dead within 24 hours despite the use of a powerful broad-spectrum antibiotic. Even with her public health training, Macario said, she wasn't aware how serious the issue of antibiotic resistance had become.

Even in "highly educated, high-income circles," she said, "many still don't know what MRSA is or they don't understand how it is connected to antibiotics given to food animals."

Like Macario, Spitz and his mother said they were grateful to have the opportunity to speak to lawmakers but found the experience dispiriting in the end.

"We came to Washington for only one day, and all we had to share were our stories," he said. "But industry lobbyists are there every day, and they come bearing real gifts."

As the legislative and legal battles drag on, some advocates say the fight also must be taken directly to the consumer.

Spitz's father, Jeff, a documentarian, and his wife are making a film called "Food Patriots" that highlights food innovators around the nation and ways consumers can vote with their dollars for a safer and healthier food production system.

Amdur Spitz also started a petition in March on change.org urging the U.S. Department of Agriculture to ensure that at least some meat distributed to schools through its commodity program be raised without the use of antibiotics.

The Northbrook mom, a strategic communications consultant, notes that Chicago Public Schools already buys chicken raised without antibiotics for school meals once a month. A nationwide program, she said, would help preserve the effectiveness of antibiotics while offering safer meals and a lesson for students.

“The first thing is that you reduce the risk of superbugs in our children’s meal,” Amdur Spitz said. “And the second is that you create a dialogue at school and in the community about antibiotics in animal agriculture. ... At the same time it pushes the marketplace toward producing more meat in ways that are healthier for the public.”

Some Chicago institutions, including O’Hare International Airport, Midway Airport, Shedd Aquarium and McCormick Place, recently announced or completed plans to source a portion of their meat from producers that don’t use antibiotics. The Chicago-area restaurants Sopraffina, Poag Mahone’s and Trattoria No. 10 say 100 percent of their meat is raised without antibiotics, amounting to about 400,000 pounds a year.

Consumer groups and other advocates say they will continue to apply pressure in Washington, though Macario said she is frustrated by the slow pace of legislative change.

“I just don’t get it,” she said. “I can’t understand why more people aren’t freaked out that we are on the precipice of a postantibiotic era.”