The FDA Is Still Not Tracking How Farms Use Antibiotics

Antibiotic resistance is a growing public health concern, and animal agriculture is a known factor. But experts say the agency is dragging its feet on collecting available data, such as the antibiotics added to feed.

BY LISA HELD NOVEMBER 8, 2023

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When bacteria develop resistance to front-line antibiotics, health care professionals lose their ability to treat deadly infections, leading to more than 35,000 deaths annually in the U.S. and more than 1.2 million worldwide. For that reason, antibiotic resistance has been held up by the World Health Organization as one of the most pressing threats to global health.

Researchers see the potential overuse of those antibiotics in agriculture as a key driver of antibiotic resistance—but they've often struggled to access basic information about how many animals are receiving the drugs, for what purpose, and for how long.

Collecting that farm-level data is a critical missing piece in the Food and Drug Administration's (FDA) five-year plan, launched in 2019, to improve "antimicrobial stewardship" in animal agriculture, advocates say. Now, the deadline is approaching. And while the agency has made other significant regulatory changes in the years before and since, the FDA is not regularly tracking or reporting how antibiotics are used on farms, nor does it have a plan in place to do so in the short term.

Instead, the agency funded a few small pilot projects that collected data in 2016 and 2017 and published one-time results in 2020. Then, in 2021, FDA commissioned an 18-month "stakeholder engagement" project run by a partner foundation to explore setting up a voluntary antibiotic use reporting system in collaboration with the animal agriculture industry.

Neither effort has proven very effective. According to multiple experts, however, FDA does have access to some important data that could be a game-changer if the agency chose to use it.

That's because most antibiotics given to farm animals are mixed into their feed at feed mills, FDA-regulated facilities that are required to keep records on prescriptions and distribution. And although those records could begin to paint a picture of what antibiotic use on American farms looks like and help uncover ways to prevent overuse, FDA is simply not collecting them.

“The data is at the feed mills,” said Laura Rogers, deputy director of the Antibiotic Resistance Action Center at George Washington University. “If the agency really wanted this information, they could figure out how to get it.”

Data Sources

In an email, FDA spokesperson Veronika Pfaeffle emphasized that the agency “is committed to antimicrobial stewardship in veterinary settings,” and pointed to other steps it has taken on the issue.

For instance, since 2017, the agency has made at least three changes experts consider consequential: It outlawed the use of antibiotics solely to promote faster animal growth (although many of the same drugs now used for disease prevention also boost growth), gradually made veterinary prescriptions a requirement for all antibiotics also used in human medicine, and set new limits on how long drugs should be administered.

But efforts to gather basic data on how farms use antibiotics day to day—which Pfaeffle agreed “is important to help us understand what drives antimicrobial resistance in animal agriculture”—has lagged.

Every year, animal drug manufacturers are required to report sales data to the FDA, and the agency releases those numbers broken down by which animal species the drugs were sold for. After a large dip in 2016, when the FDA banned antibiotics used solely for growth promotion, sales in the pork and beef industries have gradually ticked back up. Chicken is the exception, as large swaths of the industry have eliminated medically important antibiotics entirely from their production based on consumer demand.

When it reports on the overall quantity of antibiotics sold each year, the agency emphasizes that the sales numbers “are not indicative of how these antimicrobial drugs were actually used in animals.” In other words, the FDA tells the public that just because the drugs were sold, it can’t be assumed that they were administered to animals, because farmers could buy more than they end up needing and store or toss the rest.

That's in contrast to how the data is reported in Europe, said David Wallinga, a physician who has been doing research and advocacy work on antibiotic resistance at the Natural Resources Defense Council (NRDC) for years. In Europe, it's standard practice to use overall sales numbers and animal production numbers in calculations to estimate the volume of antibiotic use per animal.

Still, even if the FDA did start making those calculations, those numbers would only reveal the amount of antibiotics used per animal. Data that has more details on what the drugs are used for and for how long is universally understood to be of much higher value in preventing overuse. That's what the feed mills have.

"The CDC [the federal Centers for Disease Control and Prevention] has really been pushing on this point for the last several years and they've beefed up their efforts to track antibiotic use in hospitals and in clinics, figure out how much overuse is happening, and then take steps to address it," Wallinga said. But CDC only has authority over human medicine, while FDA handles drugs given to animals. "That's what's missing on the animal side."

At feed mills, when employees mix antibiotics into feed, they are required to hold onto the prescriptions for two years. Wallinga and others have long been lobbying the FDA to collect and share that data.

In her response to detailed questions from Civil Eats, the FDA's Pfaeffle said that the agency does review some of those records during on-site inspections, but that it doesn't collect them. She emphasized that the agency doesn't believe collecting the feed directives would provide a clear or complete enough picture of antibiotic use, since distribution is also not the same as "use," and that the agency would still need "to gather information on other dosage forms of antimicrobial drugs being used in food-producing animals (e.g., medicated drinking water, injectable, intramammary, other oral dosage forms)."

However, Laura Rogers at ARAC said that even if collecting the data would result in an incomplete picture, it would be a huge step forward. "Overall, the lack of creativity at FDA on this issue is so disappointing. If collecting the data from all the feed mills is too taxing, they

could focus on three states: California for beef, Arkansas for chickens, and Iowa for swine . . . and analyze use," she suggested. "It would not be the full picture, but it would be pretty good indicators of how and why the drugs are being used."

Plus, the FDA's own pilot studies on antibiotic use show that feed accounts for the majority of antibiotic use in the most important sectors. Based on 2016 and 2017 data from 22 cattle feedlots, nearly 80 percent of antibiotics were administered in feed. At the large hog facilities studied, that number was about 70 percent.

Steve Roach of the Food Animal Concerns Trust (FACT) and the public health-focused Keep Antibiotics Working coalition (KAW) has been working on the issue for 20 years and collaborated with Wallinga to push the FDA to collect feed mill records. Roach believes the agency is downplaying the value of the records and their potential to provide reliable estimates of how farmers are using antibiotics.

"I don't believe that people are actually purchasing large amounts of feed and then just dumping it on the ground," he said. "It's really good data."

Problems With a Voluntary Collection System

But the FDA believes it has a better plan: Partner with animal agriculture companies to get farmers to voluntarily provide data on how they're using antibiotics. To that end, the agency commissioned the Reagan-Udall Foundation for the FDA, an independent nonprofit created by Congress to advise the agency and gather feedback from the many individuals and groups engaged in the issue to explore how that could happen.

Starting in January 2022, Reagan-Udall began the first fact-finding phase of the project. Public health representatives, including Wallinga at NRDC and Roach at FACT, were among the 30 stakeholder groups included in that process. But when the foundation released a report summing up the first phase, the advocates said they did not see any of the significant concerns they voiced reflected in the text.

The project's second phase is focused on designing the antibiotic use tracking system, and the Reagan-Udall team has shifted to meeting with industry groups, including the North American Meat Institute, the National Pork Producers Council, and the U.S. Poultry & Egg Association.

That shift was necessary, said Amar Bhat, the chief operating officer at Reagan-Udall, because his focus was on figuring out how to make the "public-private partnership" work. "For that, I needed to talk to those who would be contributing data," he said. "It was about the mechanics." In terms of whether the public health groups' earlier concerns were considered, Bhat said, "I think we gave ample opportunity to them to share their views."

One of the group's biggest concerns, communicated in public comments submitted by KAW, was that it's unlikely that enough producers would contribute data to a system that is entirely voluntary. And, they noted, the voluntary nature could hide overuse patterns rather than reveal them: Producers using antibiotics responsibly might be more likely to submit voluntary data, while those overusing might be motivated to opt out. "It will end up giving you a very distorted picture of how antibiotics are used on farms," Roach said.

Bhat said Reagan-Udall didn't consider other approaches to tracking antibiotic use data because the entire directive from the FDA was to evaluate how to create a voluntary system based on a public-private partnership. His team did look at the systems that agencies in California and Maryland—where state laws in recent years have mandated antibiotic use reporting—have set up as a point of comparison. "It was useful to know what they're doing—what they're succeeding at doing and what the gaps are," he said.

For example, in 2022, the Maryland Department of Agriculture (MDA) sent notices to over 1,000 veterinarians asking them to submit information on antibiotics they prescribed that year. A total of seven submitted data.

That number may not be as minuscule as it seems, though, said Nancy Jo Chapman, who was assistant state veterinarian at the MDA when the antibiotic use law passed and helped implement the law's provisions. For one, veterinarians are only asked to report if they

prescribe antibiotics for the largest farms. In Maryland, there are very few cattle or pig operations that meet those size requirements.

And yet, even with only seven veterinarians responding, the report provides useful annual info that the federal government doesn't currently collect. For example, veterinarians prescribed more chlortetracycline than any other medically important antibiotic in 2022. They wrote scripts for about 6,000 pounds, for intestinal infections in 1,000 cattle.

Still, in an email, MDA director of communications Jessica Hackett said that the low response rate was also "because the submission of the information from veterinarians is voluntary."

Chapman agreed it had to be a factor. "I love my veterinarians, but I can't say they're all reporting, and there's no enforcement," she said, which she considers a good thing because she didn't like the idea of policing veterinarians. In the end, she said, "it's just not reliable data," but added, "it would be better to get it from the feed mill. That's the real number."

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