



Antibiotics and Animal Agriculture: A Primer

Why are antibiotics used in animal agriculture, and what can be done to ensure their appropriate use?

Overview

Each year, at least 23,000 Americans die and some 2 million are sickened from antibiotic-resistant bacterial infections.¹ Antibiotics are crucial to the health of people and animals, but any use endangers their efficacy, as bacteria develop resistance to them over time. Therefore, to preserve these lifesaving drugs, antibiotics should be used as little as possible in all settings—including in health care and agriculture—and only when medically necessary and appropriate.

Antibiotics used in animal agriculture contribute to the threat of drug resistance. Although detailed information about antibiotic use in animals is lacking, available data show that around 70 percent of the total volume of all medically important antibiotics in the United States is sold for use on the farm.² This is currently the only available information for tracking and assessing antibiotic use in U.S. animal agriculture, but it is inadequate.

Antibiotic use by the numbers

In 2016, data reported to the U.S. Food and Drug Administration showed that the sale of medically important antibiotics had declined 14 percent overall from 2015 to 2016, the first decrease since these data were initially reported in 2009. It also was the first time that animal drug companies have broken down sales estimates by the major types of food animals—pigs, cows, chickens, and turkeys—setting a baseline for species-specific sales information in the years to come and shedding light on the different antibiotic use patterns across these species.³ The data also revealed that:

- About 95 percent of the antibiotics were sold for use in feed and water, which makes tailoring treatments to individual animals difficult.⁴
- About 96 percent were sold over the counter, without any veterinary oversight or involvement, but an FDA policy, discussed below, has since changed that—for the most part.⁵

How the government is addressing the problem

In 2013, FDA took an important step toward ensuring the judicious use of medically important antibiotics by finalizing a policy, known as Guidance for Industry #213, that prohibits the use of medically important antibiotics



for production purposes (i.e., given to healthy animals to promote growth and enhance feed efficiency). Under this policy, which was fully implemented in January 2017, any addition of antibiotics to feed and water requires the oversight of a veterinarian. In addition, the Veterinary Feed Directive, a companion policy issued in 2015, outlines the conditions under which veterinarians can authorize antibiotic use in animal feed and the accompanying responsibilities veterinarians must assume.

With full implementation of these two policies, inappropriate antibiotic use should decrease and the veterinary oversight of medically important antibiotics should increase dramatically. However, better antibiotic use data are needed to assess the impact of these policies.

Essential next steps

1. Collect and report better data.

Only limited information is currently available on why antibiotics are used in food animal production, particularly whether it is for the treatment of disease or to prevent and control its spread. FDA, together with the U.S. Department of Agriculture and the Centers for Disease Control and Prevention, has outlined a draft plan for collecting additional data on farm-level antibiotic use and resistance that depends on close collaboration by the three agencies and draws upon existing data collection systems. The goal is to expand and better integrate existing and potential new data sources to provide a comprehensive picture of antibiotic use practices in animal agriculture and their links to resistance. If adequate funding is made available, this information would underpin efforts to understand the effects of policy change and set future priorities. FDA already collects aggregate data on total antibiotic sales from veterinary drug companies. In May 2016, the agency moved to enhance these data by requiring animal drug companies to estimate the amount of antibiotics sold for use in pigs, cows, chickens, and turkeys to improve understanding of antibiotic use and differences across the major food animal species.

2. Refine antibiotic labels.

FDA and others have noted the potential for continued injudicious antibiotic use even after the January 2017 implementation of Guidance #213. A Pew analysis demonstrated that more than 1 in 3 antibiotic labels will still not fully meet judicious use guidelines. In particular, some drugs will remain on the market with approvals for continuous administration or use for undefined durations, and others are not targeted toward a specific animal disease. Some drugs lack a defined dosage or have an exceedingly wide dosage range, which raises questions about what dose is appropriate. None of this is consistent with judicious use principles. FDA should work with drug companies and other stakeholders to address these concerns by reviewing and revising these problematic labels.

3. Minimize the need for antibiotics through the increased use of alternative products and practices.

How animals are housed, fed, and raised affects their health and thus the need for antibiotics. Improving animal husbandry practices—such as the age at which pigs are weaned or the type of flooring used in animal areas—and adopting alternative interventions, such as vaccines, probiotics, or prebiotics, can reduce the risk of disease. The agricultural sector should research, develop, and adopt husbandry practices and alternative interventions that reduce the need for routine antibiotics.

4. Buy meat raised according to responsible antibiotic use guidelines.

Consumers can influence food producers by purchasing meat and poultry that was raised responsibly. Parents and patients can request that schools and hospitals offer these types of proteins too. USDA-verified labels can help ensure the transparency and accountability of production practices.

Endnotes

- 1 Centers for Disease Control and Prevention, *Antibiotic Resistance Threats in the United States, 2013* (2013), <http://www.cdc.gov/drugresistance/threat-report-2013>.
- 2 U.S. Food and Drug Administration, *2014 Summary Report on Antimicrobials Sold or Distributed for Use in Food-Producing Animals* (2015), <http://www.fda.gov/downloads/ForIndustry/UserFees/AnimalDrugUserFeeActADUFA/UCM476258.pdf>. Data on antibacterial drugs used on humans in the U.S., 2011-14, are from IMS Health (now QuintilesIMS), obtained April 12, 2016. The total volume of medically important antibiotics sold for use in food animals based on 2014 FDA data was 20,890,979.7 pounds. The total volume of antibiotics sold for use in humans based on IMS calculations was 7,704,435.8 pounds.
- 3 U.S. Food and Drug Administration, *2016 Summary Report on Antimicrobials Sold or Distributed for Use in Food-Producing Animals* (2017), <https://www.fda.gov/downloads/ForIndustry/UserFees/AnimalDrugUserFeeActADUFA/UCM588085.pdf>.
- 4 Ibid.
- 5 Ibid. Medically important antibiotics that are not administered through feed or water were not affected by Guidance #213, and some of these products (e.g., injectable products) may still be available over the counter.

This fact sheet was updated in February 2018 to reflect the release of 2016 FDA sales data.

For further information, please visit:
saveantibiotics.org

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