

Tracking Animal Antibiotic Use in Food Animals

The United States needs to build a platform for food producers, processors, inspectors and retailers to share animal antibiotic use data as public health partners in addressing the threat posed by zoonotic antibiotic resistance.

Antibiotic resistant (AR) zoonotic bacteria have been recognized as a substantial threat to public health by the United States, the European Union and the World Health Organization.¹ AR pathogens cause illnesses with greater severity, including increased risk of hospitalization, bloodstream infection, and treatment failure.² For food safety, the rise of AR *Salmonella* and *Campylobacter* is an area of great concern. These two foodborne pathogens cause the greatest number of bacterial foodborne illnesses in the U.S.,³ and they are listed on the Centers for Disease Control and Prevention “Serious AR Threat” list.⁴

Use of antibiotics in animal husbandry is reported to be high.⁵ The overuse of animal antibiotic treatment is frequently cited as a primary cause for the emergence of ABR foodborne pathogens, although data is needed to verify this connection.⁶ Building an effective surveillance system for antibiotic use in animals is a key step toward understanding the factors that contribute to AR.⁷ Data on how many animals are being treated; the drugs, dose and duration being administered to animals, and the conditions under which animals are treated are needed to understand the factors that lead to the development of antibiotic resistance.

Over the past few years, there has been renewed interest in the oversight of food animals. Currently, there is only a small amount of federal on-farm animal monitoring. While the United States Department of Agriculture’s Food Safety and Inspection Service (USDA-FSIS) has no on-farm oversight, other USDA and FDA agencies have some limited on-farm capabilities.⁸ However, this level of oversight is insufficient and does not provide the information needed to adequately respond to the rising threat of ABR pathogens.

The United States needs to improve its oversight of animal antibiotic use. Today, FDA monitors animal antibiotic sales under the Animal Drug User Fee Act (ADUFA),⁹ but the ADUFA data has some limitations.¹⁰ In the Agricultural Appropriations Bill for FY 2017, Congress allocated \$9.9M¹¹ to USDA’s Animal and Plant Health Inspection Service (USDA-APHIS) for “on-farm surveillance and data collection to enhance the understanding of on-farm levels of antibiotic use and the impact on antimicrobial resistance levels.”¹² Recently, HHS announced a funding opportunity to assess antibiotic usage in food-producing animals.¹³ While these efforts are good, the U.S. urgently needs to develop an active surveillance system to provide more definitive information about animal antibiotic use and impacts.

According to a recent OIG report on USDA's response to antibiotic resistance, the development of a strong surveillance program on animal antibiotic use is hindered by budget constraints, the inability to retain staff, and gaps in communication and strategic planning.¹⁴ However, given the projected growth of AR bacteria over the next few decades,¹⁵ more initiatives and resources must be developed to counter this emerging public health threat. Crafting new data-sharing agreements between public and private sectors must become a priority.

CFI encourages the federal agencies to use their expertise to initiate collaborative efforts to address the gaps related to AR surveillance, including the use and impacts of antibiotics in animals and humans.

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END NOTES

¹ Ventola CL. (2015) The Antibiotic Resistance Crisis: Part 1: Causes and Threats. *Pharmacy and Therapeutics*, 40(4):277-283. Accessed 04/20/16 at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378521/>

² Kawakami V, L. Bottichio, K. Angelo et al. (2015) Notes from the Field: Outbreak of Multidrug-Resistant Salmonella Infections Linked to Pork — Washington 2015. *MMWR Wkly Report*, 65(14):379–381. Accessed 04/16/16 at: <http://www.cdc.gov/mmwr/volumes/65/wr/mm6514a4.htm>

³ Huang JY, Henao OL, Griffin PM, et al. (2016) Infection with Pathogens Transmitted Commonly Through Food and the Effect of Increasing Use of Culture-Independent Diagnostic Tests on Surveillance — Foodborne Diseases Active Surveillance Network, 10 U.S. Sites, 2012–2015. *MMWR* 65(14):368–371. Accessed 04/16/16 at: <http://www.cdc.gov/mmwr/volumes/65/wr/mm6514a2.htm>.

⁴ CDC. Antibiotic Resistance Threats in U.S., 2013, p.7. Accessed 04/30/16 at: <http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf>

⁵ Ibid., Ventola (2015)

⁶ Landers TF, Cohen B, Wittum TE, Larson EL. (2012) A Review of Antibiotic Use in Food Animals: Perspective, Policy, and Potential. *Public Health Reports*. 2012;127(1):4-22. Accessed 05/17/16 at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3234384/>

⁷ Ibid., Landers (2012)

⁸ USDA's Animal and Plant Health Inspection Service (APHIS) inspects farms to investigate animal diseases, while FDA conducts on-farm inspections in collaborations with the states through: 1) Pasteurized Milk Ordinance that specifies Grade A milk standards and requires reporting of antibiotic residue testing to the National Milk Drug Residue Data Base, and 2) the Prevention of *Salmonella Enteritidis* in Shell Eggs During Production, Transportation, and Storage Act (74 FR 33030), which requires on-farm visits of egg-laying facilities.

⁹ FDA. Questions and Answers: Summary Report on Antimicrobials Sold or Distributed for Use in Food-Producing Animals. Question 2. Updated 10/02/14. Accessed 04/15/14 at:

<http://www.fda.gov/ForIndustry/UserFees/AnimalDrugUserFeeActADUFA/ucm236149.htm>

¹⁰ Keep Antibiotics Working and others. Joint letter to FDA. May 9, 2016. Accessed on 05/17/16 at:

<http://static1.squarespace.com/static/5519650ce4b01b71131cb5f9/t/57321b9640261d67c7173936/1462901655471/KAW+FD+A+Letter+on+Monitoring+Sale+and+Use+of+Ag+Antibiotics+-+May%2C+9%2C+2016.pdf>

¹¹ This amount represents about 10% of APHIS' 2017 budget, as listed in the U.S. House Appropriations Bill.

¹² U.S. House of Representative. 114th Congress, Second Session. Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Bill, 2017. Report, p.27. Accessed 04/20/16 at: <http://appropriations.house.gov/uploadedfiles/hrpt-114-hr-fy2017-agriculture.pdf>

¹³ HHS Center for Veterinary Medicine. Antimicrobial Use & Resistance Data Collection (U01); RFA-FD-16-046. Accessed 04/20/16 at: <https://grants.nih.gov/grants/guide/rfa-files/RFA-FD-16-046.html>

¹⁴ Office of Inspector General. (2016) USDA's Response to Antibiotic Resistance. Accessed on 04/28/16 at: <https://www.usda.gov/oig/webdocs/50601-0004-31.pdf>

¹⁵ UK Department of Health, HM Treasury, and the Foreign and Commonwealth Office. (2016) Review on antibiotic resistance. Infographic: Comparing deaths (world-wide). Accessed 05/16/2016 at <http://blogs.plos.org/thestudentblog/2015/11/24/antibioticawareness/>