

Summary of the Antimicrobial Resistance Issue and Activities for the Secretary's Advisory Committee on Animal Health—June 2014

Introduction

The U.S. Department of Agriculture (USDA) is asking the Secretary's Advisory Committee on Animal Health for feedback on proposed surveillance, research, and education and outreach activities that the USDA plans to conduct to address antimicrobial use and resistance.

Background

Antimicrobial resistance (AMR) is a global issue affecting both public and animal health. Simply stated, there is concern that bacteria that cause disease in both people and animals are developing more resistance to the important antibiotics¹ used for treatment. There is increasing recognition that AMR is also an issue in animal health though the extent of its occurrence and its impact are largely unknown. Some believe that the use of antimicrobial drugs in agriculture is one of the primary drivers for the emergence of AMR. In reality, our understanding of the factors that contribute to levels of AMR in various settings and the specific role of antimicrobial use in agriculture in the selection for AMR bacteria is incomplete. The issue has become increasingly urgent as the numbers of organisms resistant to antimicrobial drugs has grown, the availability of new antimicrobial drugs has slowed or stopped and global interconnectedness has increased.

The public health and veterinary communities have implemented actions to encourage the judicious use of antimicrobials in people and animals. Judicious use of antibiotics, an integral part of good veterinary and production practices, maximizes therapeutic efficacy and minimizes selection of resistant microorganisms. The Food and Drug Administration (FDA) has finalized two guidance documents for industry (Guidance for Industry [GFI] #209 and #213) which seek the voluntary cooperation of the pharmaceutical industry to remove the label claims for growth promotion on antimicrobials deemed medically important. In addition, GFI #213 seeks to move all therapeutic uses of antimicrobial drugs in feed and water under the oversight of a veterinarian – requiring a Veterinary Feed Directive (VFD) for in-feed products used therapeutically or a prescription for in-water products used therapeutically. FDA has proposed a revision to the VFD regulation that incorporated many of the comments received during five regional listening sessions on the GFI #213 and via other routes. The comment period on the proposed VFD revision has closed and FDA is considering the comments received. However, USDA and FDA work together closely to identify and mitigate emerging threats to America's food supply. USDA has collaborated and provided recommendations to FDA on these guidance documents. Perhaps most importantly, the FDA relies on the science-based information that USDA generates about antibiotic drug use, AMR patterns, and livestock and poultry management practices to inform its policy and regulatory decisions. FDA also taps into USDA's extensive network of collaborative relationships with producers and animal agriculture industry organizations as part of its outreach.

Even though the United States Department of Agriculture (USDA) is not the lead regulatory agency with

¹The terms *antimicrobial drug* and *antibiotic* are used interchangeably; however, antimicrobial drugs are a broader category since they have activity against more than just bacteria and include synthetic medications such as sulfonamides.

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respect to antibiotic use and AMR, USDA is an important part of the solution to address this challenge. For nearly two decades, the USDA has conducted surveillance, basic and applied research, and education and outreach to assess levels of AMR, develop effective mitigation strategies for AMR, and assist animal producers to implement these strategies. USDA activities have made important contributions to understanding the role of animal production in AMR and to reducing its development and spread.

Current USDA AMR activities include:

- National Animal Health Monitoring System (NAHMS) commodity studies gather information about general farm policy and management practices related to reasons for use, antimicrobial class, and delivery route.
- Agricultural Resource Management Survey (ARMS) is an annual farm-level survey that focuses on farm finances, but includes detailed questions aimed at commercial producers of certain livestock species on production practices, including antibiotic drug use.
- FSIS sampling in slaughter plants for both the National Antibiotic Resistance Monitoring System (NARMS) and the *Salmonella* Pathogen Reduction: Hazard Analysis and Critical Control Points (PR/HACCP) verification sampling.
- Intra- and extramural research to generate science-based data about antimicrobial use, mechanisms of antimicrobial resistance, and mitigations to reduce AMR in food-producing animals and their environments (including alternatives to antibiotics).
- Education and outreach activities on the judicious use of antimicrobials.

However, considerable work remains, and there is a growing sense of urgency to address this problem.

Engaging stakeholders

In May 2012, USDA sponsored a workshop² with stakeholders, Federal partners, and USDA agency staff to review current antibiotic use and resistance monitoring, management practices to reduce antibiotic resistance, and alternatives to the use of antibiotics to treat and prevent diseases or to enhance production in food-producing animals. This workshop identified important knowledge and data gaps, and participants encouraged USDA to develop an integrated, strategic plan to address them.

Input from that workshop serves as the foundation for a draft USDA AMR action plan that has been developed over the past year. The action plan was jointly constructed by a broad group of USDA agencies. This plan and the potential activities have not been shared with stakeholders.

Proposed USDA activities include:

- Enhanced and expanded survey questionnaires, longitudinal studies, and development of improved methods and tools to measure antimicrobial drug use and related production practices by livestock and poultry producers.
- Ongoing biological sampling at various points and locations from the farm through the slaughter plant, harmonized antibiotic susceptibility testing procedures, and targeted on-farm and in-plant sampling to supplement National Animal Health Monitoring System (NAHMS) studies and case

² Documents from this workshop can be found online at:
www.ars.usda.gov/research/programs/programs.htm?np_code=103&docid=17547.

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investigations will enhance our understanding of the patterns of antibiotic drug susceptibilities for selected bacterial organisms.

- New initiatives aimed at funding multi-institutional/multiagency projects that integrate research, education, and extension.
- Research and discovery to develop innovative antimicrobials that provide alternatives to conventional antibiotics and that are refractory to resistance development.
- Education and outreach programs for various audiences including veterinarians, producers, extension agents, academia, the media and the lay public.

All of the activities in the USDA AMR Action Plan are based on voluntary participation by producers. Although plan was based on input received from stakeholders during the 2012 workshop, the recent development of the plan to date has been internal to USDA. Given the voluntary nature of the efforts extensive outreach is needed to ensure collaborative efforts with stakeholders in developing practical, effective, and efficient solutions to the surveillance, research and stewardship plans.

Committee deliberations

The USDA requests that the Committee:

1. Provide feedback on the current and proposed USDA activities that address AMR.
2. Identify how USDA could best collaborate with their constituent industries to supplement and sustain these activities; and
3. Recommend actions USDA could take to promote acceptance and support among State and industry stakeholders for USDA activities related to the AMR issue.