

**Testimony of Dr. John Clifford  
Deputy Administrator for Veterinary Services  
Animal and Plant Health Inspection Service  
U.S. Department of Agriculture**

**Before the House Committee on Energy and Commerce's  
Subcommittee on Health  
Hearing on Antibiotic Use in Animal Agriculture  
July 14, 2010**

Mr. Chairman and Members of the Subcommittee, my name is Dr. John Clifford, and I am the Deputy Administrator for Veterinary Services with the Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS). In this position, I also serve as USDA's Chief Veterinary Officer.

Today, the Subcommittee is looking at an important issue that has far-reaching consequences for both human and animal health. USDA believes that it is likely that the use of antibiotics in animal agriculture does lead to some cases of antibacterial resistance among humans and in the animals themselves and it is important that these medically important antibiotics be used judiciously.

USDA is committed to playing an active role in preserving the effectiveness of medically important antibiotics; in addition to ongoing research, we are committed to identifying opportunities to reduce usage and maintain the effectiveness of these drugs – whether through the development of new treatment options for animals, such as vaccines, or through outreach and education to this country's agricultural producers so that they have better information on antibiotic use.

USDA believes that decisions regarding the issue of antibiotic use must be science-based and is interested in providing the most current scientific information when it can, and collaborate with HHS' CDC, FDA, National Institutes of Health (NIH), and other Federal agencies on this important issue.

Several agencies within USDA are actively working to conduct surveillance and research on key issues related to antimicrobial resistance. Within USDA, APHIS, along with Agricultural Research Service (ARS), Food Safety and Inspection Service (FSIS), Economic Research Service (ERS), and National Agricultural Statistics Service (NASS) are actively engaged on a series of projects to better understand these issues. I have provided more information about these many ongoing projects in the Appendix at the end of this testimony.

## **CHALLENGES USDA FACES**

Last month, FDA issued guidance on antimicrobial resistance. This guidance provides an opportunity to seek comments and find answers to many important questions. For instance, determining how to apply the concept of "judicious use" in the field will be critical. USDA

believes that making this type of determination must be based on sound scientific evaluation, and data-based decision making. USDA believes that animal health impacts must be considered in the context of the decision making process.

FDA, under its regulatory authority, has an existing process for completing risk assessments concerning the use of antimicrobials. USDA believes that this process provides a rational, science- and data-based approach to making decisions about specific antimicrobial use as opposed to an approach that broadly eliminates antimicrobials for specific uses.

In addition, we note that the ecology of antimicrobial resistance is very specific to its conditions, such as the characteristics of the bacterial organism itself and the patterns of antimicrobial use in human health settings and food production systems. It is also inextricably linked to other ecologic niches such as bacterial populations associated with wildlife, soils, waste disposal, etc. There are ebbs and flows between these niches, and these constant changes are important to consider within this context. These fluctuations may make it difficult to apply broad solutions to a variety of unique conditions. While USDA and its federal partners are conducting surveillance and research on antimicrobial resistance, we currently lack robust monitoring tools that would allow for an understanding of this ecology and the impact of proposed solutions.

To that end, we must carefully address what current research says, and identify gaps in our scientific knowledge. Antibiotics have been widely used in veterinary and human medicine for over half a century, and the benefits to the health of both is widely acknowledged. Research also shows that increased usage of some antimicrobial drugs likely does lead to resistance<sup>1,2</sup>. But how much and how quickly?

On the question of veterinary oversight and consultation, which was also included in the FDA guidance document, USDA believes it is important to consider the challenges due to the lack of large animal veterinarians in rural areas. Due to larger distances and traveling times in rural areas, it may be difficult for producers to consult with veterinarians on these types of decisions. USDA believes it is important to work together with Federal partners, veterinarians, and other stakeholders to find feasible solutions to implement this recommendation.

## **USDA'S ROLE GOING FORWARD**

USDA is committed to continue partnering with other federal agencies to address these details and to find feasible solutions to some of the challenges. USDA is also looking to expand its existing partnerships. For instance, USDA is interested in expanding our work with HHS in identifying how to reduce antibiotic use through improved outreach and collaboration with veterinarians and the animal agriculture community. In addition, we believe that additional research should be pursued that explores whether alternatives to medically important antibiotics are available. We need to work together to conduct research and develop new therapies that protect and preserve animal health, without increasing the risk of resistance to medically

---

<sup>1</sup> Bonten et al. Vancomycin-resistant enterococci: why are they here, and where do they come from? *The Lancet Infectious Diseases* December 2001; 1(5): 314-325.

<sup>2</sup> Dutil et al. Ceftriaxone Resistance in *Salmonella enterica* Serovar Heidelberg from Chicken Meat and Humans, Canada. *Emerging Infectious Diseases* January 2010; 16(1): 48-54.

important antibiotics. Included in our efforts, we must identify alternative animal health management techniques – tools and technologies, including newer and better vaccines and diagnostic tests. That portion of the partnership would extend beyond our federal partners to farmers and producers themselves. USDA wants to partner with them to facilitate the judicious use of antibiotics in ways that are feasible to farmers and ranchers.

For instance, USDA is interested in making our veterinary experts available to provide guidance and share information with veterinarians and producers. In some rural areas, access to an experienced veterinarian is limited, especially when dealing with large animals. Given the larger distances in rural areas, we must do more to ensure that producers are receiving the assistance they need to make informed decisions about the use of antibiotics with their animals.

Mr. Chairman, I can assure you that USDA recognizes the challenges of antibiotic resistance, and that the entire Department is taking these challenges very seriously. We are committed to ensuring that medically important antibiotics are used judiciously, which will preserve both human and animal health. USDA already is and will continue to play an active role in preserving the effectiveness of those drugs. We are performing surveillance, conducting research, and increasing education. Together, those three facets will help protect American agriculture, while preserving the needs of human medicine.

## APPENDIX: CURRENT USDA EFFORTS AND PARTNERSHIPS

Various USDA agencies are engaged in the research and analysis of antibiotic use and antimicrobial resistance to keep USDA at the forefront of maintaining a stable and healthy system of American agriculture. APHIS partners with other USDA agencies to include: Agricultural Research Service (ARS), Food Safety and Inspection Service (FSIS), Economic Research Service (ERS), and National Agricultural Statistics Service (NASS). We work together in various capacities to collect samples and data, develop diagnostic methods, and analyze data.

Beyond our partnerships within USDA, the Department also regularly collaborates with other federal agencies. Antibiotic resistance is a multi-faceted issue, and we have and continue to partner with agencies, such as the HHS' CDC, FDA, and NIH.

USDA is a member of the Interagency Task Force on Antimicrobial Resistance. The Task Force, which was created in 1999, is co-chaired by the CDC, FDA and NIH, and includes a broad range of federal partners. The Task Force developed a comprehensive document, *A Public Health Action Plan to Combat Antimicrobial Resistance*, which reflects a broad-based consensus of federal agencies on actions needed to address antimicrobial resistance. The Action Plan provides a blueprint for specific, coordinated federal actions to address the emerging threat of antimicrobial resistance.

In 2007, the Task Force held a public meeting, soliciting input to update the Action Plan. The revised Action Plan is undergoing agency clearance, after which time it will be available for public comment.

Also key to our efforts to address antimicrobial resistance is the National Antimicrobial Resistance Monitoring System (NARMS). NARMS was established in 1996 as a partnership of the FDA, ARS, FSIS, APHIS and CDC. The NARMS program monitors changes in antimicrobial drug susceptibilities of selected enteric bacterial organisms in humans, animals, and retail meats. The system is intended to provide meaningful data to help identify antimicrobial drug resistance in humans and animals, and to provide timely updates to veterinarians and physicians on patterns of resistance. It is part of the overall federal strategy to combat antimicrobial resistance that fulfills the need for a national surveillance program to monitor resistance among foodborne pathogens in humans and animals.

USDA supports NARMS through three of its agencies. FSIS contributes isolates from its regulatory program for Salmonella and isolates of Campylobacter from its microbiological baseline data collection surveys. APHIS has contributed isolates from clinically ill animals and from healthy animals on farms. And ARS conducts all testing and analysis of isolates collected by USDA. ARS reports the information it compiles yearly and shares this information and data on the Internet at: <http://www.ars.usda.gov/Main/docs.htm?docid=6750>. The impact of NARMS has been to assist the FDA in regulatory decision making on animal antimicrobial drugs, practitioners on prudent use practices, and commodity organizations on quality improvement.

In addition to these efforts, APHIS has been collecting an increasing amount of data on production practices and samples containing bacteria that have been used to evaluate levels and impacts of antimicrobial use on livestock operations throughout the United States. This data and the samples are collected through the National Animal Health Monitoring System (NAHMS), which conducts national studies on the health and health management of domestic livestock and poultry populations. Bacterial isolates gathered via NAHMS have been tested for antibiotic resistance and included in NARMS. The data collected yielded information on, among other things, the types of antimicrobials used to treat various common diseases in animal populations, how producers decide to treat and what to treat with, how antimicrobial drugs are delivered to the animals (via feed, water, or parenterally), and primary influencers on the antimicrobial drug decision-making process. All of these factors are critical to understanding how to optimize antimicrobial drug use in animal populations.

APHIS, in collaboration with ARS, has also been collecting samples to be cultured for bacteria as part of the NAHMS program, which are subsequently evaluated for antimicrobial drug resistance as part of the NARMS program. These studies provide information on the extent of antimicrobial drug resistance among potential foodborne pathogens and commensal organisms in livestock populations. Such information is critical to risk assessments that evaluate the potential for transfer of the resistant organism or resistance determinants through the food chain.

An additional step USDA is taking to better understand the complexities of this issue is through our work with the Codex ad hoc Intergovernmental Task Force on Antimicrobial Resistance. The Task Force was established by the 29<sup>th</sup> meeting of the Codex Alimentarius Commission. FDA is the lead agency for the U.S., serving as the Delegate. USDA's FSIS co-leads and is the Alternate Delegate.

The Task Force has a four-year timeline to produce a guidance document, which is expected to be complete in October 2010. The intent of this guidance is to assess the risks to human health associated with the presence and transmission of antimicrobial resistant microorganisms and antimicrobial resistance genes through food and feed, as well as to develop appropriate risk management advice based on that assessment to reduce such risk.