Antimicrobial Resistance and One Health: Educational Needs

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Antimicrobial Resistance and One Health: Educational Needs

Education

- Provides knowledge
- Develops competencies
- Changes awareness, attitudes, and professional behavior

Calvin W. Schwabe
DVM, MPH, ScD
UCD SVM Faculty 1966-1991

Dr. Calvin Schwabe – "One Medicine"
Modern advocate of One Medicine
“The practice of veterinary medicine is directly related to man’s well-being in a number of ways.” (1964)
ANTIBIOTIC RESISTANCE THREATS in the United States, 2013
The Problem

- Each year in the U.S.
  - 2 million patients with bacterial infections that are resistant to antimicrobials
  - At least 23,000 deaths
  - $35 billion in extra health care costs
Antimicrobial Stewardship
(Educational Goal)

- Refers to the actions veterinarians and other health care professionals take individually and within their professions to preserve the effectiveness of antimicrobials through conscientious oversight that provides responsible medical decision-making and management of our precious antimicrobial resources.
**Antimicrobial Stewardship**

- Related concept: *Prudent use of antimicrobials*
  - Prudent use should follow after a decision is made to use antimicrobials
  - Also referred to as "judicious use"
  - *Optimal selection* of drug, dose and duration of antimicrobial therapy, along with *reduction of the inappropriate and excessive use (stewardship)* as a means of *slowing the emergence of antimicrobial resistance*
Examples of Educational Milestones, Needs, & Opportunities

AAVMC / APLU National Action Plan to Address Antibiotic Resistance
Antimicrobial Resistance Core Competencies Working Group

AMR LEARNING OUTCOMES

Association of Public & Land-Grant Universities

Association of American Veterinary Medical Colleges
Part of the AAVMC/APLU National Action Plan to Address Antibiotic Resistance

- 6 different categories
  - Healthy Animals
  - Global Impact
  - Antimicrobial Stewardship
  - Antimicrobial Drugs and Resistance
  - Roles and Relationships
  - Critical Analysis

Healthy Cows
Sustainable Herds
Confident Consumers
• 3 different educational levels
  – Youth (e.g., 4-H, FFA, others)
  – Animal Science undergraduate & graduate students
  – Veterinary medical students
Veterinary Feed Directive –
requires veterinary oversight and authorization for any approved therapeutic uses of medically-important antimicrobials in feed for food-producing animals (Effective January 1, 2017)

“Caution: Federal law restricts medicated feed containing this veterinary feed directive drug to use by or on the order of a licensed veterinarian.”

Non-therapeutic uses:
- Growth promotion/feed efficiency – No longer permitted by FDA for medically-important antimicrobials
Examples of Educational Milestones, Needs, & Opportunities

Continuing Education Needs:

• Feed mills
• Feed distributors
• Veterinarians
• Animal owners
Examples of Educational Milestones, Needs, & Opportunities

Proposed Initiatives from the USDA Antimicrobial Resistance Action Plan

• Surveillance studies on antimicrobial usage & resistance
• Needed to inform stakeholders and policy makers
• Has not been funded

• Address recognized knowledge gaps in AMR and develop effective, practical mitigation strategies to help prolong the effectiveness of antibiotics for animals and humans.
Examples of Educational Milestones, Needs, & Opportunities

Food Animal Residue Avoidance Databank

(A component of the Food Animal Residue Avoidance & Depletion Program)

- Provides *science-based* expert advice to help mitigate unsafe chemical residues (including antimicrobials and other drugs) in products derived from food animals.
  - Supports judicious use of antimicrobials
  - Essential to meet FDA requirements for legal ELDU (extra-label drug use) in food animals for extended withholding intervals
- Collaborative effort: University of California-Davis, University of Florida, Kansas State University and North Carolina State University
Antimicrobial Resistance and One Health: Educational and Outreach

... “there will need to be a greater emphasis on stewardship programs, education and training to ensure our efforts to address antibiotic resistance are successful.”
Antimicrobial Resistance and One Health:
Educational and Outreach

AAVMC & APLU Legislative Briefing

Antimicrobial Resistance and One Health
Thursday, March 23, 2017, Noon – 1:30 p.m.
Russell Senate Office Building, Room 385

Learn more about the looming public health threat of antimicrobial resistance from leading experts.

MODERATOR: Barbara Ekwall, Senior Liaison Officer, Food and Agriculture Organization of the United Nations (FAO)

- Dr. Terry Lehenbauer, Associate Professor, Population Health and Reproduction, University of California, Davis, will discuss how veterinary education is responding to the AMR issue.

- Hellen Gelland, Associate Director at the Center for Disease Dynamics, Economics and Policy, will discuss the public policy implications of AMR.

- Dr. Amelia Woolums, Professor, Department of Pathobiology and Population Medicine, Mississippi State University, will discuss the research that needs to be done in the area of AMR.