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

U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

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and RESEARCH CENTER
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

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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
• 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.
• 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
“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.
- Helen Gelband, 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.