

# Combating Antimicrobial Resistance: Veterinary Medicine's Role

Michael J. Blackwell, DVM, MPH

Assistant Surgeon General

U.S. Public Health Service (Ret.)

Immediate Past Dean

College of Veterinary Medicine

University of Tennessee

December 17, 2009

# The Broadest Medical Profession: Veterinary Medicine

- Three medical professions
  - Physicians, Dentists, and Veterinarians
- Only veterinarians have comparative medicine training, making it the broadest
  - Multiple species (including those in the food supply)
  - Broadest prescription authority
- Ensures public health by addressing diseases in animals before they affect humans
  - Food-borne disease agents affecting humans, that are also found in animals include, *Salmonella*, and *E. coli*
  - Infectious diseases in humans that originated in animals include, HIV/AIDS, SARS, West Nile Virus, Avian Influenza, and ?Swine Influenza?

# Uses of Antimicrobials in Food Animals (i.e., food supply)

- Therapeutic (treatment)
  - Diagnosed microbial disease
- Prophylactic (prevention)
  - After an exposure, but before clinical onset
  - In advance of expected exposure

# Uses of Antimicrobials in Food Animals (i.e., food supply)

- Non-therapeutic (routine)
  - Absence of disease, or exposure, or expected exposure (i.e., healthy animals)
  - Weight gain, growth promotion, feed efficiency
  - Many drugs are available directly to lay persons
    - veterinary oversight not required

# To Reduce Antimicrobial Resistance

- Stop non-therapeutic (routine) uses
- Require veterinary oversight of all uses of antimicrobials in animals, especially if the drug is used in human medicine
  - Veterinarians are the best trained and the only ones licensed to decide appropriate uses

# To Reduce Antimicrobial Resistance

- Use options other than antimicrobials as a first line of defense
  - More focus on husbandry practices
    - waste management, less crowding, better ventilation
- Improve surveillance, monitoring, and reporting
  - Better drug use data
  - Risk Assessments
- More public funding of resistance research
  - Less bias and less of a conflict of interest

**Thank You!**