

ANTIBIOTICS USED IN ANIMALS RAISED FOR FOOD

PERCEPTION VS. REALITY

2014 Legislative AG Chairs Summit

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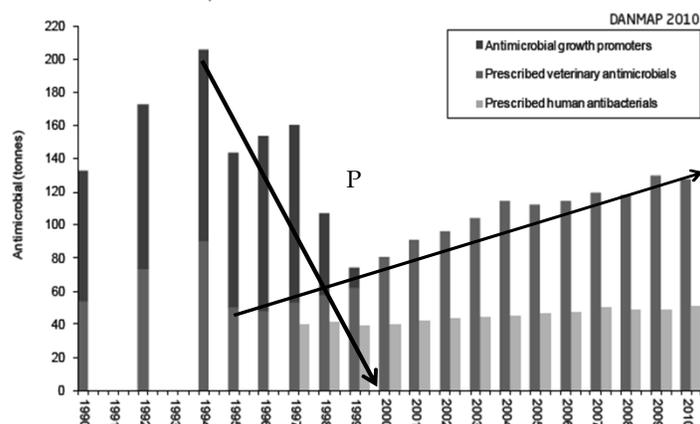
Richard Raymond, M.D.

Perception vs. Reality

- ▣ Foodborne Illnesses down 29% in last decade
- ▣ Media hits for foodborne illness outbreaks up 150% in last decade
- ▣ Media hits for recalls of food up 250% in last decade (Peanut Corporation of America; Wright Egg Farms; Jensen Family Farms; Hallmark/Westland; Salinas Valley Spinach farm)
- ▣ Pink Slime/Foster Farms
- ▣ Consumers view technology as bad business

Denmark

Figure AP1.1. Consumption of antimicrobial agents and growth promoters in animal production and prescribed antibacterials in humans, Denmark



Sources: Human therapeutics: The Danish Medicines Agency. Veterinary consumption: 1990–2000, data based on reports from the pharmaceutical industry of total annual sales. (Data 1990–1994: Use of antibiotics in the pig production. Federation of Danish pig producers and slaughterhouses. N. E. Rønn (Ed.). 1996–2000: Danish Medicines Agency and Danish Plant Directorate). 2001–2009: Data from VetStat.

Def: "Subtherapeutic dosing"

- Sometimes terms such as "non-therapeutic" or "sub-therapeutic" are inappropriately used by groups to describe the use of antimicrobials in animals to promote growth, prevent disease, control disease and to improve feed efficiency.
- **Perception:** The inappropriate use of "subtherapeutic" is intended to deceive and paint a bad picture of Animal Ag practices
- Reality: The FDA and AVMA do not use these terms as they are incorrect descriptors of an FDA approved use and approved dose for the intended results.

Multidrug Resistant Salmonella

- ▣ **Perception:** The February NARMS report stated that MDR *Salmonella* was increasing in percentage. Those against the slaughter of animals for food acted enraged and alarmed.
- ▣ **Reality:** The February NARMS report shows that for retail chicken and ground turkey, the four most common antibiotics that *Salmonella* showed resistance to were tetracycline, streptomycin, sulfisoxazole and penicillin
- ▣ **Reality:** None of these drugs would be used to treat a *Salmonella* infection. Macrolides, Bactrim DS and quinolones are first line antibiotics for foodborne illnesses and little or no resistance in *Salmonella* was found in the NARMS study

The Numbers Game

2011

SUMMARY REPORT

On

**Antimicrobials Sold or Distributed
for Use in Food-Producing
Animals**



Food and Drug Administration
Department of Health and Human Services

Table 1. Antimicrobial Drugs Approved for Use in Food-Producing Animals:
2011 Sales and Distribution Data Reported by Drug Class

	Antimicrobial Class	Annual Totals (kg ¹)
Domestic	Aminoglycosides	24,865
	Cephalosporins ²	4,173,259
	Ionophores	150,101
	Lincomasides ³	552,536
	Macrolides	880,163
	Penicillins ⁴	371,000
	Sulfas ⁵	5,642,573
	Tetracyclines ⁶	1,510,372
	TRP ⁷	15,321
	Export ⁸	Tetracyclines ⁶
	NRE ⁹	

¹ kg = kilogram of active ingredient. Antimicrobials which were reported in International Units (IU) (i.e., Penicillins) were converted to kg. Antimicrobial class includes drugs of different molecular weights, with some drugs reported in different salt forms.

² Includes antimicrobial drug products which are approved and labeled for use in multiple species, including both food- and nonfood-producing animals, such as dogs and horses.

³ NRE = Not Independently Reported. Antimicrobial classes for which there were less than three distinct sponsors actively marketing products domestically were not independently reported. These classes include: Amoxicamates, Ampicillins, Anphenols, Diaminopyrimidines, Fluoroquinolones, Glycolipids, Pleuromulins, Polypeptides, Quinolones, and Streptogramins.

⁴ Only includes exports of FDA-approved, US-labeled antimicrobial drugs approved for use in food-producing animals.

⁵ NRE = Not Independently Reported. Export. Antimicrobial classes for which there were less than three distinct sponsors exporting products were not independently reported. These classes include: Amoxicamates, Aminoglycosides, Ampicillins, Anphenols, Cephalosporins, Diaminopyrimidines, Fluoroquinolones, Glycolipids, Ionophores, Lincomasides, Macrolides, Penicillins, Pleuromulins, Polypeptides, Sulfas, Quinolones, and Streptogramins.

FDA Report on Antimicrobials

- ▣ <http://www.fda.gov/downloads/ForIndustry/UserFees/AnimalDrugUserFeeActADUFA/UCM338170.pdf>

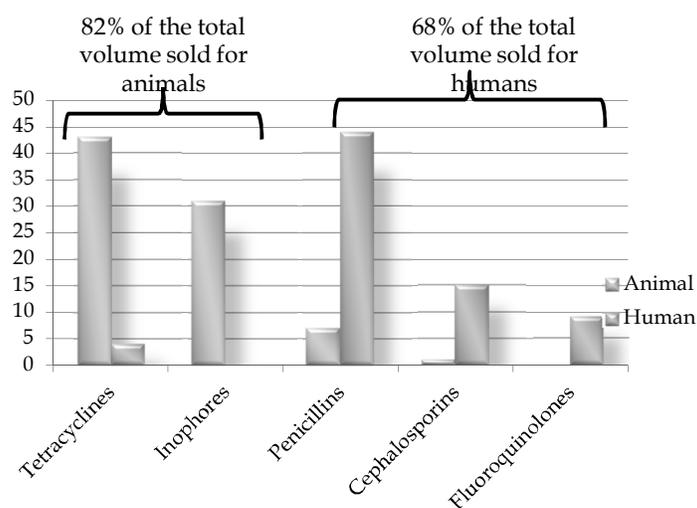
Reality Check

- ▣ FDA 2011 report on all “antibiotics sold or distributed for use in food-producing animals”:
- ▣ Ionophores 28.3% (30% in 2012)
(not used in human medicine at all)
- ▣ Tetracyclines 41.5% (Of very limited use in human medicine with many better choices available)
- ▣ NIR 12% (Most not used in human medicine)
- ▣ Cephalosporins 0.2% (Of critical importance to human medicine, and limited to therapeutic treatment only in animals)
- ▣ Flouoroquinolones 0.1% (Same limits as Ceph.)

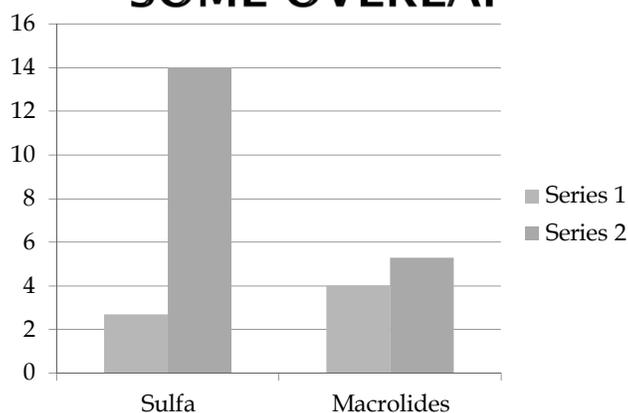
Top Five Classes of ABX in Human Health

- ▣ 1. Penicillin (Augmentin) Kg share = 44.0%
 - ▣ 2. Cephalosporins (Keflex) Kg share = 15.1%
 - ▣ 3. Sulfa and TMP (Bactrim) Kg share = 14.2%
 - ▣ 4. Quinolones (Cipro) Kg share = 9.2%
 - ▣ 5. Macrolides (Z-Pak) Kg share = 5.3%
- ▣ These top five classes represent 88 % of all antibiotics sold for use in human medicine.
- ▣ Source: FDA letter to Congresswoman Slaughter

Animal vs. Human Use Little Overlap



ANIMAL VS. HUMAN USE SOME OVERLAP



Yellow – animal sales

Green – human sales

UK Five Year Antimicrobial Resistance Strategy Sept. 2013

- ▣ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244058/20130902_UK_AMR_strategy.pdf
- ▣ Page 8 Introduction
- ▣ “Increasing scientific evidence suggests that the clinical issues with antimicrobial resistance that we face in human medicine are primarily the result of antibiotic use in people, rather than the use of antibiotics in animals.”

US Centers for Disease Control Report on Antibiotic Resistance

- ▣ From the CDC's September, 2013, press release accompanying the over 100 page report:
- ▣ "The use of antibiotics is the single most important factor leading to antibiotic resistance around the world. Antibiotics are among the most commonly prescribed drugs used in human medicine. However, up to half of the antibiotic use in humans.... is unnecessary or inappropriate."
- ▣ 3-4 pages on use of antibiotics in animals
- ▣ www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf

This should not be another Pink Slime fiasco

- ▣ **Perception:** The Animal Agriculture industry is being painted as irresponsible and inappropriate users of massive amounts of sub-therapeutic doses of antibiotics in healthy animals, when in fact:

- ▣ **Reality: The current uses and doses of antibiotics in animals have been approved by the FDA as appropriate.**

CLOSING THOUGHT

- ▣ Statement from Ron DeHaven, DVM and Executive Vice President and CEO of the American Veterinary Medical Association:

- ▣ **“When policy regarding the judicious and safe use of antibiotics in food producing animals is being debated and formulated, it should be based on biological science, not political science.”**