

# For the Record

Straight talk about antibiotic use in food animal production presented by ALPHARMA Animal Health

## A STATISTICAL PEEK BEHIND THE CURTAIN AT THE INFLATED CLAIMS OF ANTIBIOTIC 'OVER-USE'

Political writer Gregg Easterbrook once remarked, "Torture the numbers long enough and they will eventually confess to anything." So is the case with the statistics thrown around regarding how U.S. farmers "over-use" antibiotics.

Although the FDA strictly regulates the type, form and dosage of antibiotics farmers can and cannot use in their animals, the reality is nobody knows exactly how much is eventually consumed at the farm and veterinary clinic. So the question is: Can your customers trust the numbers?

### A LITTLE PERSPECTIVE

The statistics most typically cited are based on interpretations and misinterpretations of a 2001 report called *Hogging It: Estimates of Antibiotic Abuse in Livestock*. Commissioned by Boston's Union of Concerned Scientists (UCS), an **advocacy group** critical of numerous social issues including carbon emissions, SUVs, biotech and the war in Iraq, it claimed farmers use an "enormous" 24.6 million pounds of antibiotics yearly for "non-therapeutic" purposes, or 70 percent of all U.S. antibiotics. However:

■ The study's own authors concede there's no way to know which farms do and don't use antibiotics, how long they use them, and which animals they choose to medicate. So they guessed. For cattle and hogs, they based their guess on a **single USDA survey** in each market which asked just a handful of questions about antibiotic use among dozens of others. Lacking a similar survey in poultry, UCS simply assumed all farms use them, based on a single-sentence opinion plucked from a 253-page **National Research Council review** of the issue. UCS then simply multiplied its guesses by the total number of animals and birds sent to market during the year.

■ To convert the 24.6 million pound guess into a percentage, the UCS authors likewise guessed at the total number of human prescriptions, based on—for inpatients—a National Center for Health Statistics survey

and—for outpatients—the **kind of market survey** they dismiss as unreliable when done by animal-drug makers. They then estimated a "most likely" antibiotic poundage total by assuming what doctors ordered to fill those prescriptions. It **grossly underestimates** the amount of hospital prescribing," according to Tamar Barlam, MD, former antibiotic resistance project director for the Center for Science in the Public Interest.

■ To support its belief antibiotics are "misused" and "nonessential," UCS invented a definition for "non-therapeutic" to count uses that keep animals from getting sick—a definition not supported by FDA. In the decade since the report, the phantom definition has suffered even further rendition-creep, to the point it's now shorthand to accounts like the Organic Trade Association's **openly false accusation** that "...70 percent of all antibiotics made in the United States are used to fatten up livestock."

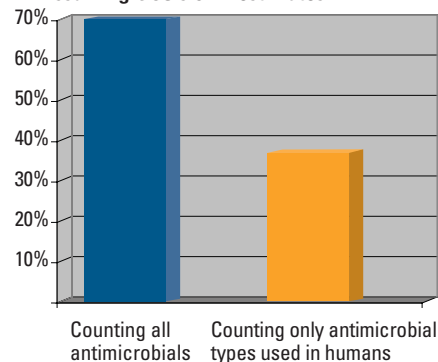
■ The UCS report and those who use it employ some statistical sleight of hand to further inflate the implied risk that farm antibiotic consumption might be contributing to human drug failures. Not every type of antibiotic they stuff into their calculations is relevant to the resistance debate. Several antimicrobials—those known as ionophores, bambarmycins, carbadox, tiamulin and organic arsenicals—are never used in humans. So, their use in farm animals poses no risk of causing human antimicrobials to fail. Subtract UCS's own estimates for how much of those antimicrobials are used from the inflated statistics, and the oft-repeated 70 percent figure immediately falls to only 37 percent.

■ The 70 percent figure is obese with other paunchy inflations, including claiming poultry farmers use 1.8 million pounds of two antibiotics which poultry veterinarians agree are rarely if ever used, and counting nearly 22 tons of one antibiotic in pig farms that has *never even been sold* in the United States.

### Count the relevant antimicrobials

Activists inflate the importance of farm antibiotic use by counting antimicrobials in their estimates that are not used in humans, and thus present no risk for human resistance.

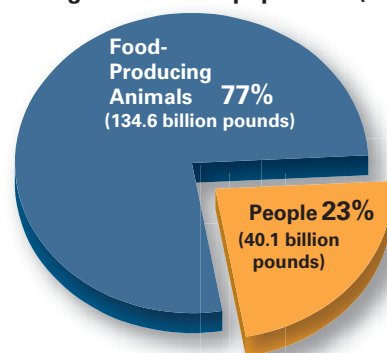
#### Percent used by farm animals Assuming UCS's own estimates



### Compare weight-to-weight

Because antibiotic dosages are based on weights, you would expect U.S. farm animals to need more medications than humans: They outweigh us by more than three times.

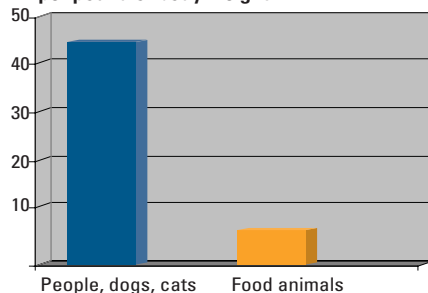
#### Weight of the U.S. population (2008)



### Who's really hogging the antibiotics?

USDA epidemiologist David Barber used available estimates to calculate that on a pound-per-pound basis, each human and pet on average consumes about 10 times the antibiotics that each average farm animal does.

#### Milligrams of antibiotics used per pound of body weight



Source: *Journal of the American Veterinary Medical Association*, Vol 218(10), May 15, 2001.

**ANOTHER SLICE OF MATHEMATICAL REALITY: HOW RISKY IS YOUR FOOD, REALLY?**

The U.S. Centers for Disease Control **estimates 76 million** cases of food-borne disease occur each year. That often-repeated statistic is typically used to suggest antibiotics present a food-safety risk of crisis proportions. The trouble, according to the Animal Health Institute's Vice President of Regulatory, Scientific and International Affairs Richard Carnevale, VMD, is that the statistic is deceptive. Here's how he breaks it down by the numbers:



**1. CDC SAYS 76 MILLION CASES OCCUR ANNUALLY**

**2. BUT ONLY 38 MILLION ARE ESTIMATED FROM KNOWN SOURCES.** So only half are reliable.

**3. OF THOSE 38 MILLION** we know the source of, 33.5 million are caused by viruses and intestinal parasites. That means only about 5 million are affected by antibiotics.

**4. ONLY 80 PERCENT** of those, or about 4 million cases, are believed to originate from food.

**5. ADJUSTING FOR THE DECLINE** in the incidence of the predominant pathogen, *Campylobacter*, since CDC's original estimates brings the number to less than 3 million.

**6. THE VAST MAJORITY** of those 3 million estimated cases are not life-threatening. They usually cure themselves, only a portion of the remainder that require treatment are resistant to antibiotics, and even then, effective drugs remain available.

**INSIDE THIS ISSUE**

**'The statistics say...' farmers use the lion's share of U.S. antibiotics to feed to animals, according to activists. But do the statistics tell the real story? A little mathematical perspective.**

Pound-for-pound, who really uses the majority of antibiotic medications sold in the United States?

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*For the Record* is a regular publication designed to present facts to balance today's debate over the use of safe, effective, economical methods farmers use to produce your milk, meat and eggs. Read past issues or link to more information on this issue at [www.AntibioticTruths.com](http://www.AntibioticTruths.com)

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