Figures lie, while liars figure

E
ey year since 2009, the Food & Drug Administration has released a report that is mislabeled as “Antimicrobials Sold or Distributed for Use in Food-Producing Animals.” I say “mislabeled” because every table in the report that provides totals for different types of antimicrobial sales has a footnote that says: “Includes antimicrobial drug applications which are approved and labeled for use in both food-producing animals (e.g., cattle and swine) and food-producing animals (e.g., dogs and cats).”

The reports can be viewed on the FDA website at www.fda.gov/Industry/UserFees/AnimalDrugUserFeeActADUFA/ucm042896.htm. So, the “liars” (who evidently do not read footnotes) compare the total sales for probable use in all animals, including horses, to sales for human use, and they subsequently often repeat the old line that 80% of all antibiotic sales in the U.S. go toward use in “perfectly healthy animals” raised for food.

FDA recently released the latest report for sales during 2014, and while the title and footnote have not changed, the numbers have — and once again, some groups are using the total sales figure to try to promote their agenda.

Multiple publications reported the news with such headlines as “FDA Report Shows Antibiotic Sales on the Rise” (AgriPulse) and “Antibiotic Sales to Farms up 23 Percent Since 2009” (Food Safety News).

A detailed look at the reports actually paints quite a different picture versus just using total sales as the figure on which to base opinions.

First of all, the sales were to wholesalers and retailers, not farms, but that is nitpicking and is not really important. I haven’t seen anyone take a look at the change in size of U.S. herds and flocks from 2009 to 2015, but again, that would be nitpicking some more and is a weak defense for the rising sales, as is the defensive position often repeated by some in the animal agriculture industry that the numbers represent sales, not actual usage. I don’t think anyone buys antibiotics without intending to use them.

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What is important is to look at the sales by antibiotic class and see what that means in relation to human health and the possible risk of creating antibiotic resistance to bacteria that can harm or even kill us two-legged animals.

It is true that total sales are up, but it is not true that “we are standing on the brink of a public health disaster,” as Rep. Louise Slaughter (D., N.Y.) has claimed.

Most of the increase during the last four years has been in the ionophore and tetracycline classes of antibiotics. In fact, those two classes each saw an increase of approximately 25% — a number very similar to the 23% cited in the one headline about sales to farms.

Ionophores, which made up 31% of total sales in 2014, are never used in human medicine. They are antiparasitics used to treat an infection most Americans will never contract.

Tetracyclines comprised 43% of total sales for use in animals but only 3% of total sales for use in human medicine.

By carefully examining the numbers over recent years, I found that there has been a significant decline in the use of antibiotics commonly prescribed by human health practitioners that are less commonly used in the animal agriculture industry — so-called “medically important” antibiotics.

In 2012, FDA basically announced that medically important antibiotics could no longer be used for growth promotion in animals after Dec. 31, 2016, and that all antibiotics added to feed would have to be under the supervision of a veterinarian.

Many in the animal agriculture industry began preparing for the inevitable by changing their practices, and it’s showing.

The top five classes of antibiotics used in human medicine (Infographic) comprise 88% of all sales and are as follows (by kilogram share):

1. Penicillin (e.g., Augmentin) = 44.0%.
2. Cephalosporin (e.g., Keflex) = 15.1%.
3. Sulfur (e.g., Bactrim) = 14.2%.
4. Quinolones (e.g., Cipro) = 9.2%.
5. Macroliodes (e.g., Z-Pak) = 5.3%.

These five classes probably represented nearly 100% of the prescriptions I wrote when I still practiced medicine in Nebraska. They are the truly medically important drugs we want and need to keep working.

Now, of these five classes of antibiotics, guess what amount is sold for animal use? A whopping 14%.

The problem is that a headline stating that only 14% of all antibiotics sold for use in animals are very important to human medicine just doesn’t get one’s attention like using the 80% number, does it?

Two of the top five classes used in human medicine — cephalosporins and quinolones — make up less than 0.3% of all sales for use in animals because of FDA actions taken in 2005 and 2012.

So, where did those numbers showing an increase come from? From 2012 to 2014, ionophore sales increased roughly 6%, and tetracycline sales rose 9%.

Ionophores may be used to deworm little puppies, but never children.

Tetracyclines were once used to treat acne, but there are better medications for that scourge of the teen years, and tetracyclines are not approved for use in prepubescent children.

Don’t misunderstand me: I am not saying that a 14% overlap is not important to the development of antibiotic resistance or that we can ignore it.

I really have no clue as to what the interface among animal health, human health and environmental health might be for the increase occurring in antibiotic resistance. I’m not sure anyone understands it.

What I do know is that I want any changes in antibiotic policies to be based on biological science, not political science or headlines.