

For the Record

Volume 9, Issue 4 — October 2010

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

TIME FOR A LITTLE MORE CRITICAL THINKING...BY ALL

Washington State University touched off protest from its farm base last year by requiring incoming freshman to read the anti-agritech *Omnivore's Dilemma* by Berkeley journalism professor and food activist Michael Pollan. Pollan's damning questions about modern farming practices would help students there develop "critical thinking skills" about their agricultural assumptions, the school argued. Such critical thinking is in too short supply among advocates of modern, high-tech farming, according to our critics.

"As university professors," fellow food-system critic and author of *Food Politics* Marion Nestle **defensively harrumphed** over the protest in the *San Francisco Chronicle*, "Pollan and I base our opinions on our education, training, research and professional experience—not on how they might affect an industry. Our job is to teach students to read and think critically so they can form their own opinions..."

One might suspect the farmers and alumni who felt betrayed by Washington State's criticism by proxy would suggest the PhDs turn those finely honed critical thinking skills equally upon some of these other questionable pronouncements by the food system's new thinkers:

■ The widespread conjecture, following a study released in August showing the age at which U.S. **girls enter puberty** continues to fall, that hormone use in pork and poultry production is a contributing factor. (Say it with us again: No steroidal hormones are approved to increase growth in U.S. pigs, chickens or turkeys, and haven't been used here since the 1970s.)

■ Nearly universal acceptance of the prejudice that "factory farm" animals are "routinely

dosed" with antibiotics to "compensate for" "overcrowded, unsanitary" conditions that are common—while ignoring the tiny fraction of cost those antibiotics represent in comparison to the huge investments producers routinely make in sanitation, biosecurity and ventilation.

■ A glowing August profile in the hometown paper of the sponsor of federal legislation that would outlaw most farm antibiotic uses, which read, "Rep.

Louise M. Slaughter remembers the days when people didn't on occasion die from eating chicken or burgers or spinach. And she's pushing legislation that's intended to bring those good old days back again." Leaving aside the question of exactly which old days were the good ones—the ones when chicken and burgers and spinach were

relative luxuries priced beyond reach of the average consumer, or the ones when people died more than just on occasion from brucellosis, rheumatic fever, diphtheria and other diseases wiped out by technology and veterinary public health efforts—exactly how Slaughter's bill would make any dent in today's foodborne illness rates is a black hole of uncritical thinking.

If it is time for the average consumer to "...seek and analyze an array of information to create a better understanding and more effective problem-solving and decision making for complex issues," as one academic defines critical thinking—there's no more fertile field to start than the Pollanscape. See inside for thoughtful questions you can ask to spur a little critical thinking of their own.



"I don't think of myself as nervous, I think of myself as well informed."

Also in this issue

○ Six more critical questions producers and veterinarians need to ask to counter the overly simplified notions on preventing antibiotic resistance

For the record...

If the time has come for more critical thinking about antibiotic use in farming, there's no more fertile field to start than the Pollanscape—today's food-system critics who fail to challenge their own set of preconceptions.

SIX MORE QUESTIONS TO HELP

If the road to wisdom is to “question everything,” as a Greek philosopher advised, then the critics of the half-century old practice of using antibiotics to keep

animals healthy and productive could learn a little by giving some thought to these six questions which any producer or veterinarian can put to them.

1. If food safety is the concern, why support production systems that increase the risk of bacterial contamination?



The voluntary recall of about a half billion eggs this summer because CDC suspected they could be connected to a rise in *Salmonella* cases had activists raising the predictable accusation that “factory farming” is unsafe. Were we simply to return to a non-antibiotic, non-intensive system, all those cases would simply disappear, they argued. But research from around the world suggests the precise opposite may be the case: Organic meat, milk and eggs may be **more likely** to carry disease-causing organisms because the overall chain of protection in organic production is weaker, from farm to retail.

■ Several studies have shown organic or antibiotic-free chickens are more likely than conventionally raised birds to be contaminated with bacteria. A University of Bristol study in 2002 found that while only 58 percent of 130 conventional flocks tested were infected with *Campylobacter*, **every one of the 60 organic flocks were infected.**

A 2001 study from the Danish Veterinary Laboratory **found likewise:** One-third of 79 conventional broiler flocks tested positive; all of the 22 organic ones did. And a 2005 University of Maryland study of retail organic and conventional chickens found the rate of *Salmonella* contamination was **nearly 1.5 times higher** in the organic chickens.

■ A 2008 Ohio State University study found 54 percent of hogs raised on antibiotic-free operations were **infected with *Salmonella***, compared to only 39 percent in conventional operations. The antibiotic-free farmed pigs also carried higher rates of the microscopic parasite *Toxoplasma*, and some of the antibiotic free pigs were *Trichinella* positive.

■ USDA research in 2002 found cattle fed neomycin for 48 hours near harvest **shed fewer *E. coli* O157:H7** than pen mates not given the antibiotic. A study soon to be published by Iowa State likewise showed sub-therapeutic chlortetracycline or tylosin feeding successfully prevented the organism from colonizing pigs.

■ A 2005 University of Minnesota study in 129 dairies found not feeding an ionophore or **antibiotic to heifers and calves** increased the risk of finding *Salmonella* by around three times.

2. Why does human medicine's contribution to the problem get a pass?

Methicillin-resistant *Staph. aureus*, or MRSA, **blanketed the news** three years ago when the CDC announced it was killing more people than AIDS. Farm antibiotics took an undue share of blame. Now, that news event has turned into the news non-event of this year. With little to no media attention, MRSA **infection is now on the decline**—effected not by changes in farm antibiotic use, but by wholesale changes in how hospitals and clinics (where CDC shows 85 percent of cases occur) test for it, disinfect against it, and otherwise manage it.

It's another example that leaves farmers and veterinarians wondering why the rightful responsibility for an **estimated 96 percent** of all drug resistance isn't laid in the lap it belongs in: human, not veterinary, medicine.

Yes, using veterinary antibiotics does select for resistance in some important organisms, writes German microbiologist

Trudi Wassenaar, DVM, PhD. But placing blame on food for drug resistance that affects hospital patients is like blaming the fly on the grill of the truck that ran you over. **Here's why**, according to Dr. Wassenaar:

■ Most resistant pathogens posing a serious risk to human health result from human use of antibiotics.

■ She points to numerous examples of human pathogens that started susceptible but were then rendered resistant during the course of treatment.

■ “Prudent use in human medicine is not common practice everywhere,” she notes, and too many human prescribing practices still are not evidence-based.

■ Not all “resistant” bacteria, even foodborne ones, are untreatable.

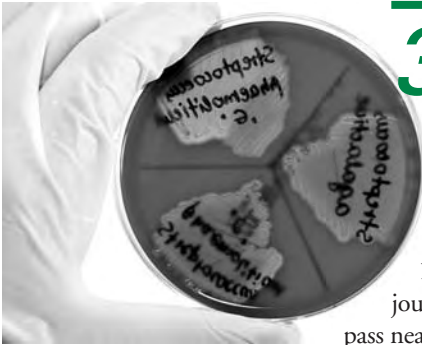
■ Not all resistant bacterial infections have therapeutic consequences.

■ Countries with low use of veterinary antibiotics don't report fewer human treatment failures.

Source: *Critical Reviews in Microbiology*, 31:155–169, 2005

Drive Thru
Pharmacy

GENERATE CRITICAL THOUGHT



3. Exactly what is antibiotic resistance?

The term has become so universal—mentioned in more than 2 million web sites and more than 100,000 medical journal articles—as to pass nearly unquestioned.

Yet, according to a team of the world's leading experts in veterinary pharmacology writing in April's *Journal of Antimicrobial Chemotherapy*, there are still **too many errors in terminology** when scientists—not to mention media and politicians—throw the term around in regard to bacteria from animal sources. Their review of the published literature revealed a number of recurring errors when it comes to methods used to assess resistance, testing quality control, application of the right criteria to interpret the results, and calculation of

the drug concentrations necessary to kill specific levels of bacteria. In addition, they noted little consensus on what scientists really mean by the term “multiresistant.”

Definitions of resistant and susceptible become even more confused, they say, when the numbers are applied without understanding whether the discussion concerns how and whether a drug can be expected to work in the field vs. whether the discussion involves cut-off values for the purpose of epidemiological studies. Epidemiological cut-off values, often reported by the media as evidence of public health threats, are determined differently than clinical breakpoints. They may have little or nothing to do with how well a drug can be predicted to work in specific animal species against specific species of bacteria.

“Conducting antibiotic susceptibility testing and subsequent data interpretation is a complex matter,” the authors warn.



4. If using antibiotic “growth promoters” helped reduce bacterial resistance, wouldn't you support their use?

Antibiotic resistance in the field is such a complex topic that making judgements about it based on resistance testing in the lab is dangerous. When we evaluate resistance using selective media, cautions West Texas A&M associate professor Guy Loneragan, DVM, PhD, that population represents a very small part of the intestinal universe, and says little or nothing about the complex web of interactions in the wild. As a result, that real world often surprises us, he says.

One example. **His studies have shown** that when feedlot cattle are fed chlortetracycline, *E. coli* resistance to tetracycline increases in those groups, as you'd expect. However, the same work shows that the percentage of *E. coli* resistant to the antibiotic ceftiofur actually

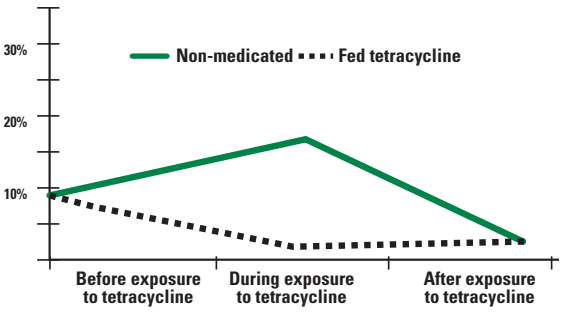
decreases in those cattle fed tetracycline. Although his group is still exploring why the effect occurs, Dr. Loneragan suspects it may be because the tetracycline-resistant bacteria are harder and grow faster than the ceftiofur-resistant, and thus crowd them out of the calf's gut. But the more important point may be that accepting some expected resistance against an older drug, like tetracycline, could provide a tool against resistance emergence, in this case vs. ceftiofur in cattle.

“We believe that if we explore some of these unexplained drivers of resistance...we can be even more effective [in managing resistance] than simply banning the drug,” Dr. Loneragan says.

It's a shift in how we think about low-level use of antibiotics, says Randall Singer, PhD, DVM, associate professor of epidemiology at the University of Minnesota. Rather than run from “growth promotion”—an outdated term that's a vestige from an antiquated method of approving antibiotics—he believes industry and regulators should embrace traditional low-level uses of older type antibiotics like tetracyclines as protective of animal and human health. When we wait until disease develops and then treat animals with a new-generation antibiotic, it tends to wipe out the bacteria in the gut, good and bad, leaving animals susceptible to re-infection, often by a resistant bug. In contrast, **his studies show** “growth promotion” uses help stabilize the bacterial populations of the gut, helping prevent infection.

Need six more good questions? See Part I in the August 2010 issue of For the Record, at AntibioticTruths.com

Percent of *E. coli* isolates recovered from manure demonstrating resistance to ceftiofur



Platt TM, Loneragan GH, Scott HM, et al. Antimicrobial susceptibility of enteric bacteria recovered from feedlot cattle administered chlortetracycline in feed. *Am J Vet Res.* 2008 Aug;69(8):988-96.

**Principal Points
More Questions
to Spur Critical Thinking
Vol. 9 No. 4 October 2010**

○ Producers and veterinarians can pose these six simple questions to opponents to illustrate why the complex issue of antibiotic resistance can't be solved by media soundbites and simplistic one-size-fits-all regulations:

1. If food safety is the concern, why support production systems that increase the risk of bacterial contamination?
2. Why does human medicine's contribution to the problem get a pass?
3. Exactly what is antibiotic resistance?
4. If using antibiotic "growth promoters" helped reduce bacterial resistance, wouldn't you support their use?
5. If only antibiotic use causes resistance, why does resistance occur where antibiotics aren't used?
6. Where are the improvements in human health?

For the Record, sponsored by a grant from ALPHARMA Animal Health, is designed to help unite the industry and provide a unified, rational message on behalf of producers whose freedom to use safe, effective, economical production methods is at stake. Working together, we can set the record straight on antibiotics.

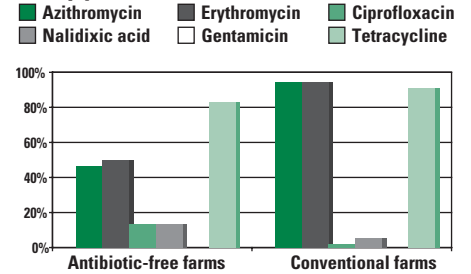
Questions or comments? E-mail Steve Kopperud at skopperud@poldir.com or editor Mike Smith at CustomMedia@Food360.com. Read past issues or link to more information on this issue at www.AntibioticTruths.com.

5. If only antibiotic use causes resistance, why does resistance occur where antibiotics aren't used?

Critics of antibiotic use in farm animals sometimes point to historical data that seems to show removing an antibiotic from use in an area has been followed by a drop in resistance in animals there. However, other evidence suggests that to believe resistance would somehow "reset" were antibiotics removed ignores reality. A meta-review reported last year by Texas A&M veterinary epidemiologist Bo Norby, DVM, PhD, of all the significant research done comparing resistance in antibiotic-free farms vs. conventional ones once again illustrates the complexity of resistance. His results show although, as you would expect, the prevalence of resistance to some antimicrobial drugs in some bacteria and animal species are lower among antibiotic-free operations, resistance doesn't disappear in the absence of antibiotics.

Another original study of Dr. Norby's, reported in *January's Journal of the American Veterinary Medical Association*, compared resistance of *Campylobacter* in 95 antibiotic-free and conventional pig farms across the midwest. It likewise found although the prevalence of resistance was higher in conventional farms, the antibiotic-free farms were not free of resistant *Campylobacter*—in fact, it was higher for some critical drugs in the absence of antibiotics.

Percent of swine farms showing some *Campylobacter* resistance to...



Everywhere? Research continues to isolate antibiotic-resistant bacteria in settings that defy any logical connection to livestock farms or antibiotics, including recent studies that found resistant *E. coli* and other bacteria in self-serve soda dispensing fountains and enterococci bacteria from restaurant houseflies resistant to kanamycin (8.3 percent), ciprofloxacin (9.9 percent), streptomycin (11.6 percent), erythromycin (23.8 percent) and tetracycline (66.3 percent).

Source: International Journal of Food Microbiology, Jan 31, 2010; Applied and Environmental Microbiology, June 2006.

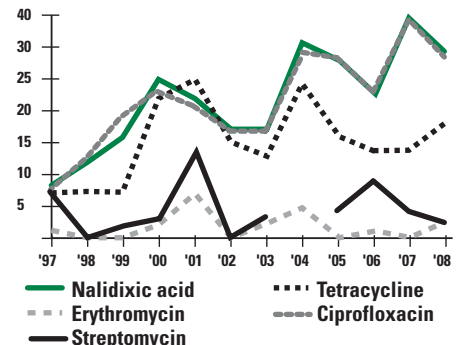


6. Where are the improvements in human health?

The U.S. National Antimicrobial Resistance Monitoring System (NARMS), which routinely monitors antimicrobial resistance in humans and animals, shows the frequency of single and multiple-resistant *Salmonella* isolates and other pathogens in the U.S. have declined or remained stable for well over a decade, even as low-level farm antibiotic use remains legal. In contrast, Europe's decade-long experiment in banning low-level antibiotic use has disappointed advocates by showing no measurable human health benefit. Resistant *Salmonella* isolates—the increase in which the World Health Organization (WHO) actually blamed on the ban—remain a problem in Europe. Food-borne *Campylobacter* continues to demonstrate stubborn resistance to antibiotics considered critical to human medicine.

"What human health benefit was there from the ban in Denmark?" asks Minnesota's Dr. Singer. "If those who wish to ban can't explain clearly what the human health benefit is—or could be—why are we going down this path?"

Percent Danish human *Campylobacter* isolates resistant to antibiotics



For the Record

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

SOMETHING IS ROTTEN IN THE STATE OF ANXIETY

Proof again that timing is everything in politics, President Obama's dash-in/dash-out appearance at Copenhagen's Global Warming Summit in December was overshadowed in the media by "ClimateGate." Leaked emails from England's University of East Anglia climate



study center seemed to show some of the world's leading global warming scientists torturing data to mask contradictory results

and discussing methods to suppress work that doesn't support the consensus.

Now, as Rep. Louise Slaughter and the media follow the President's footsteps to publicize the "consensus" science that Denmark's antibiotic ban justifies trying the risky and potentially costly experiment in the U.S., it's prudent to



Ground Zero for global-warming activism, Copenhagen has also become the center of orbit for the movement to ban use of farm antibiotics in the U.S. But are the books being cooked to support the politics? See inside.

ask: Is the activist-driven climate of panic giving consumers and legislators all the facts on antibiotics, or is it cherry-picking its supporting evidence to crush honest debate?

'THE SCIENCE SAYS...', BUT HOW RELIABLE IS IT?

"Many scientific studies," according to the House bill sponsored by Rep. Louise Slaughter (D-NY) that would ban most uses of livestock antibiotics, "confirm that the nontherapeutic use of antibiotics in agricultural animals contributes to the development of antibiotic-resistant bacterial infections in people."

But how strong is that research?

Foodborne disease experts at Canada's Public Health Agency evaluated the scientific soundness of 132 food-related scholarly journal reviews, 36 of which examined the risk that farm antibiotics impact human antibiotics. Independent reviewers critically evaluated the reviews using 13 criteria accepted in the medical field. The result?

"...routine scientific methods are rarely or never utilized in literature reviews addressing zoonotic public health issues; thus preventing end users from appropriately evaluating [their] validity," the study concluded.

Overall, none of the 132 articles met more than eight of the 13 soundness standards, two articles met only one criterion, and the median met only five. Of the 36 articles reviewing antibiotic risk, 30 expressed the opinion that animal use posed some risk for human health, yet only four attempted to quantify that risk, and none tried to synthesize the magnitude from other studies that had attempted it. Nine percent of the articles failed to support the reviewers' conclusions with the evidence.

"The conclusions of a literature review are perhaps the most important statements of the review..." the Canadian researchers wrote. "Ten per cent of the reviews [overall] made conclusions beyond the evidence presented, potentially leading to exaggerated or misleading conclusions and recommendations."

Source: Waddell L, et al. *The methodological soundness of literature reviews addressing three potential zoonotic public health issues.* *Zoonoses Public Health.* 2009 Nov;56(9-10):477-89.

Also in this issue

- Denmark is all the rage with politicians bent on ending most uses of farm antibiotics. But are we hearing the whole story?
- Why a ban could have the opposite effect of what backers say they want
- Where are the results in improved human health?

For the record...

As in the climate change debate, advocates and media who claim the 'scientific consensus' supports banning farm antibiotics are ignoring some conflicting data.

CHERRY-PICKING SCIENCE

■ Citing a *New York Times* story about a young woman paralyzed by *E.coli* contaminated beef (which even her allies remind her is irrelevant to a discussion of Danish farm antibiotics), Rep. Slaughter singled out opponents who **dared to question the glowing success** of Denmark's ban on low-level antibiotics, writing, "...[Denmark's] results are dramatic and encouraging, and help refute many of the criticisms that my bill has faced."

■ Activist fundraiser and now the Pew Trusts' farming authority **Laura Rogers** lectured liberal bloggers that consumers should ignore all that **ugly, agribusiness-driven criticism** questioning the lack of any real human results following Denmark's ban. They should instead simply urge Congress to fall in line.

Even the European Union's (EU) own Scientific Committee for Animal Nutrition, a diverse panel

of expert animal scientists, warned more than a decade ago that science **did not support the ban**. Yet Denmark's ban has continually been held up by activists in this country as a successful model of science supporting political action to protect public health.


Now, as potential federal legislation looms once again, Slaughter and her supporters are trotting out **cherry-picked Danish results**, claiming:

- "No negative impact on animal production."
- A 50-percent drop in total food-animal antibiotic use.
- Reduced antimicrobial resistance.



Believers in the success of Denmark's antibiotic ban, like Rep. Louise Slaughter, are selecting the science to fit the advocacy.

BIG BROTHER, DVM?



Frustrated, perhaps, by continual unwillingness to apply Europe's drastic ban here, Slaughter and others are pressing other attacks on your ability to use medications. In September, she wrote the Government Accountability Office (GAO), **demanding it immediately review** how deeply the government tracks your use of those tools. She made no similar demand to monitor doctors and hospitals. However, her request for a one-sided GAO look at on-farm oversight led Rep. Collin Peterson (D, MN), chair of the House Agriculture Committee, and Rep. Leonard Boswell (D, IA), to formally request GAO similarly investigate how the federal government tracks and oversees antibiotic use in human medicine.

Apparently dissatisfied with voluntary reporting from animal drug companies which doesn't support activist-inflated claims that 70 percent of all antibiotics go toward growth promotion, Slaughter wants the federal government to not only count the amount of animal antibiotics used, but also track how they're used, what they're used for, how well FDA enforces current uses, and "further data" needed to assess their risk to human health. According to one leading ag economist, such data would necessarily include your farm records on veterinary diagnoses, animal numbers, feed use, facilities and other factors.

In Denmark that level of bureaucratic intrusion typically triggers a government inspection of a veterinary clinic when its prescribing pattern diverges from historical baselines, and has been used to order lab testing and an okay from central control before a clinic can continue prescribing.

RIGHT BY HALF IS WRONG BY HALF

Well, sort of:

■ While it's true the Danish pig and poultry industries have continued to increase production, to claim no impact on productivity ignores many scientists' contention that Denmark's pork and poultry industries have become more productive in spite of, not because of, the ban. Although Danish pork producers have increased productivity in terms of pigs per litter and average daily weight gain, data collected by the Danish government show an increased mortality rate in weaner and finisher pigs for at least five years following the growth promoter ban. Only by instituting sometimes heroic changes in production practices—such as increasing the weaning age, changing diet composition, increasing relatively more expensive vaccination, and including other non-antibiotic feed additives—did producers manage to recapture losses from the ban. Feed efficiency in broilers has only now returned to levels immediately before the ban. All raised costs to Danish farmers. Instituting the ban in the U.S. has been estimated to risk adding about \$6 per head to hog production costs, at a time when the average pork producer has lost at least \$19 on every head sold.

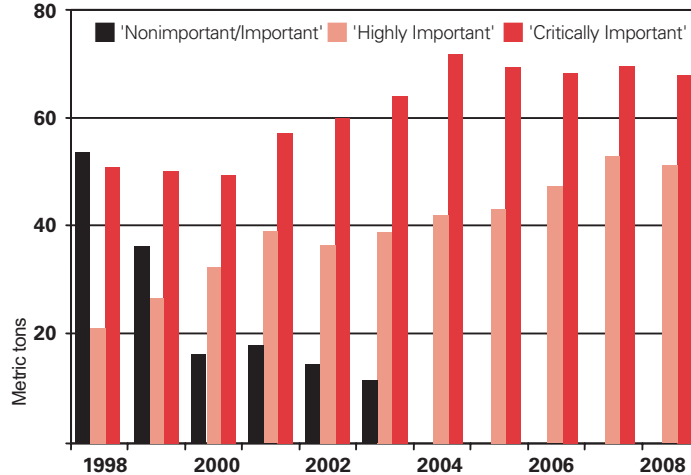
■ Although **Denmark's own tracking data** show that in order to get a 50 percent reduction in use you have to begin counting in 1992, not 1998 when the ban took effect, the more important point is that more antimicrobials are being used today to treat animals than were used annually as growth promoters before the ban. While many of the growth promoters weren't used in human medicine, many of those therapeutic antimicrobials now being employed are in classes that could directly affect human health. The use of such drugs has increased steadily by about 5 metric tons

UNINTENDED CONSEQUENCE WHEN POLITICS MEET THE REAL WORLD OF ANIMAL AGRICULTURE

Ignoring warnings that “growth-promoting” antibiotics were important to help keep animals healthy, Danish politicians banned them after 1998. The result: Veterinarians were forced to prescribe more antibiotics to fight disease.

But the more important story isn't being reported by pro-ban advocates nor the media. The “growth promotants” Denmark banned tended to be those considered less critical to human health; meanwhile, the more heavily prescribed drugs are the antibiotics deemed critical to controlling human infection. The pattern of use clearly demonstrates that over the long run, the ban has encouraged more — not less — use of antibiotics that could pose a risk to humans.

Type of antibiotics used in Danish farm animals

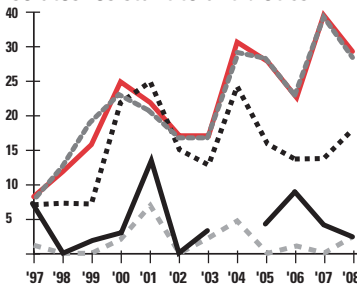


As categorized for their importance to human medicine by the UN Food and Agriculture Organization, the World Health Organization and the World Organization for Animal Health. “Critically Important:” Glycopeptides, avilamycin, penicillins, aminoglycosides, streptogramins, macrolides, fluoroquinolones and cephalosporins/other penicillins. “Highly Important:” Tetracyclines and sulfonamides. “Nonimportant/Important:” Flavofosfopolol, quinoxalines, coccidiostats and bacitracin.

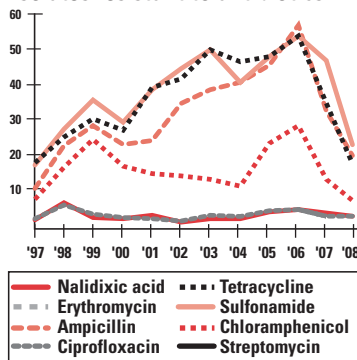
annually, and is now 66 percent higher than it was a decade ago.

■ Although the ban did appear to impact resistance in some animal bacteria, little meaningful connection can be drawn between the ban and changes in resistance where it really matters—in human pathogens.

Percent of human *Campylobacter* isolates resistant to antibiotics



Percent of human *Salmonella* isolates resistant to antibiotics



RELYING ON A LITTLE BIT OF CREATIVE AARETHMETIC?

In a letter to the House Agriculture Committee publicized by Rep. Slaughter, the head of the antimicrobial resistance unit for Denmark's National Food Institute, Dr. Frank Aarestrup, took issue with what he called “creative interpretations” of Denmark's data. Yet several of his own points appear to be selectively interpreting the results of the ban. Consider the following:

■ Although Dr. Aarestrup points out tonnage of antibiotic use in Danish pig farms has dropped 51 percent on a per-pound-of-meat-produced basis, his measurements started in 1992, six years before the legal ban went into effect. In contrast, from 1997 through 2008, according to Danish figures, total veterinary consumption of antimicrobials fell about 27 percent.

Further, when measured by the more sensitive gauge known as “Animal Defined Daily Dose,” which attempts

to compensate for changes in herd numbers by calculating the amount of drug used in standardized doses, the Danish data show consumption increased 22 percent from 2001 (the first year Denmark used the measure) through 2007, before leveling off to increase 1.9 percent in 2008.

■ Dr. Aarestrup's figures presented to Congress made the case that resistance to certain antibiotics in farm animals declined following the ban — which, as expected, some did. However, not all did. In particular, the important foodborne pathogens *Salmonella typhimurium* in pigs and *Campylobacter jejuni* in broilers continued to stubbornly increase post-ban.

The important lesson to be learned from Denmark's politicized ban is that blanket bans are a blunt instrument trying to solve a public health problem that calls for the precision of a scalpel.

Principal Points Is the Science Being Manipulated to Support Denmark's Antibiotic Ban? Vol. 9 No. 1 February 2010

- Politicians and activists advocating for a ban on the low-level use of most livestock and poultry antibiotics in the U.S. contend Denmark's blanket ban on such uses has been a success in reducing drug use and improving human health.
- The Danish ban on growth-promoting uses of antibiotics has cost that country's pork and poultry producers dearly, forcing actions to compensate for productivity losses, including facility design and management changes.
- Even though low-level use of antibiotics dropped to nothing, the resulting increase in disease and suffering called for veterinarians to prescribe more antibiotics for treatment. Such treatment use is now two-thirds higher than it was a decade ago.
- Supporters of a ban here claim it is necessary to protect human health. Yet Denmark has yet to show any meaningful improvement in human resistance rates attributable to the ban in animals.

For the Record, sponsored by a grant from ALPHARMA Inc., Animal Health, is designed to help unite the industry and provide a unified, rational message on behalf of producers whose freedom to use safe, effective, economical production methods is at stake. Working together, we can set the record straight on antibiotics.

Questions or comments? E-mail Steve Kopperud at skopperud@poldir.com or editor Mike Smith at CustomMedia@Food360.com. Read past issues or link to more information on this issue at www.AntibioticTruths.com.

WHERE ARE THE RESULTS?

In, 1997 the Veterinary Antibiotic Policy Working Group of the Danish Veterinary Laboratory stated its official position at a Berlin meeting, that severely restricting farm antibiotics was a good idea, because, in part "...it will reduce the risks for human health problems due to the use of antibiotics in animal husbandry."

By 2003, when the World Health Organization praised Denmark as a "success" in restricting farmers' freedom to employ farm antibiotics, it was careful to soften that goal: The ban had "achieved a reduction in the reservoir of resistant microorganisms in food animals." It was a yardstick **repeated in the letter** to Rep. Slaughter by Denmark's Frank Aarestrup. Any language promising or boasting of measurable human health benefits had been scrubbed.

After 10 years, that crucial result— any impact the farm animal antibiotic ban has made on drug-resistant bacteria in humans that may plausibly have come to them via their food from farm animals—remains undemonstrated:

■ Increases in resistance in human *Salmonella* were observed immediately following

the ban, and were actually attributed to the ban in the World Health Organization's otherwise favorable report.

■ When it comes to *Campylobacter*, it appears the ban only reinforces that there's **little connection** between the use of animal drugs and resistance in humans. Its rate of resistance against the human antibiotic erythromycin hasn't changed in a decade, and it's still higher than the rate of resistance to the same drug class in chickens. At the same time, *Campylobacter's* four-fold leap in resistance rate in humans against ciprofloxacin and its analog—drugs used only sparingly in Danish food animals—suggests something besides animal use is to blame.

■ Meanwhile, many parts of Europe continue to experience epidemics of resistant sentinel bacteria in humans. Over the past five years, vancomycin-resistant *E. faecium* has fallen in only two countries, while it has increased significantly in five countries. At the same time, other tracked bacteria associated with hospital infections have remained stable in antibiotic sensitivity—before, during, and after all growth promoter bans there.

ADD YOUR VOICE TO HELP CORRECT THE DISINFORMATION

■ **CONTACT YOUR CONGRESSIONAL REPRESENTATIVES.** Tell them you are a constituent and that you need them to oppose any restrictions on your legal, safe and professional use of antibiotics, restrictions based on unsound science or irrelevant experience from other countries.

Find your senator's contact info at: www.senate.gov/general/contact_information/senators_cfm.cfm

Connect with your representative at: writerep.house.gov/writerep

■ **SPECIFICALLY**, ask your two senators to **oppose S. 619**. Ask your Representative to **oppose H.R. 1549**. Both are reckless regulation not based on proven science.

■ **TO SEND A PREPARED** form letter to your congressmen and the local media, **go to this link courtesy** of the American

Veterinary Medical Association: avmacan.avma.org/avma/issues/alert/?alertid=13873126.

Remember, the most effective letters are those you edit to insert your own words, thoughts and personality.

Go to AntibioticTruths.com to link directly to these Internet sites

■ **GET THE FACTS ABOUT ANTIBIOTICS.** Read all the past issues of *For the Record* at AntibioticTruths.com. Additional background information is available at www.AHI.org and www.HealthyAnimals.org

■ **ASK FELLOW FARMERS** and veterinarians to follow suit with their members of Congress. The threat of legislation is imminent and real. Your opinion counts.

For the Record

Volume 8, Issue 2 — May 2009

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FOOD SCARE POLITICS: THE REAL RISKY BUSINESS

This just in: Sky Set to Fall. Film at 11...

DON'T EAT THE BEEF! The Obama Administration in mid-March boasted of “**closing a loophole**” that risked public health by allowing animals not obviously ill, but nevertheless unable to walk into the packing plant, to enter the food chain. USDA claimed it will keep animals infected with “**mad cow**” out of the food chain. (All four to seven of them, that is, theoretically hiding somewhere in the U.S. cattle herd, according to **best estimates**.)

Just how risky? In the United Kingdom, where mad cow disease did measurably exist in the cattle herd (**unlike the U.S.**) and where human disease linked to beef occurred, (**unlike in the U.S.**), the Centers for Disease Control estimates beef eaters there faced a 1 in 10 *billion* chance of getting the disease—roughly one-half of one thousandth of a percent of the likelihood Earth will be hit by an asteroid.

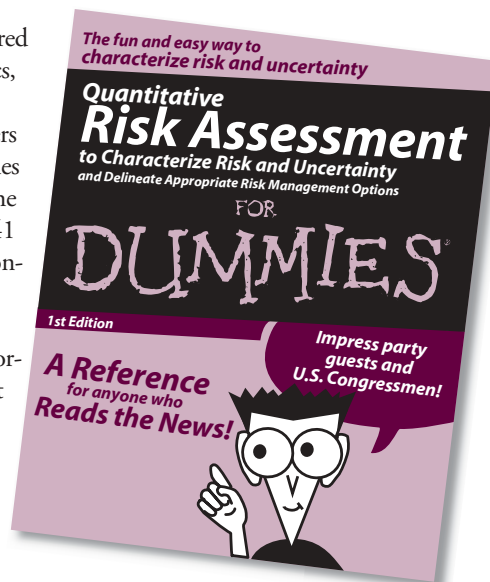
As one anonymous Internet pundit suggested, skipping meat to avoid BSE is sort of like moving to Antarctica to avoid Komodo Dragons.

DON'T DRINK THE WATER! The Associated Press in mid-2008 reported results of its own “**investigation**” of minute amounts of pharma-

ceuticals in U.S. drinking water, saying it had discovered traces of not only antibiotics, but also pain killers, anti-convulsants, mood stabilizers and sex hormones. Headlines splashed conclusions that the drinking water of “at least 41 million Americans” was “contaminated,” and that compounds “lurking” in their water were “heightening worries among scientists” about health consequences.

AP failed to add to its exposé that such reports date back nearly four decades now. But, according to Shane Snyder, PhD, Southern Nevada Water Authority, the reports are connected less to increasing contamination than they are to detection technology that’s become so good it’s now “possible to detect and quantify nearly any compound known to humankind at diminishingly minute concentrations in water.”

Dr. Snyder’s **recent scientific review** of the issue showed that while some pharmaceuticals were indeed measurable in trace quantities in water supplies, none have occurred at levels relevant to human health. Their presence must be contextualized with those levels, he says. Otherwise, if mere presence becomes the litmus test for risk, we chance spending scarce resources and contributing to global warm-



ing by overtreating water unnecessarily.

RISKY BUSINESS. Farm antibiotics, too: “Each year we fail to take action on this critical issue increases the risk that drug-resistant bacteria will threaten the health of the American people,” according to **Sen. Olympia Snowe**, R-Maine, who in March co-sponsored yet another round of federal legislation to ban most antibiotic use on farms.

Meanwhile, scientists and product manufacturers have been doing **the real heavy lifting** behind the issue, conducting the science to determine whether any risk really exists, at what level, and whether the talk of risk amounts to anything of substance. See more inside.

Also in this issue

- Scientists who have labored to quantify the risks that farm antibiotics could impact public health are yielding results that don’t fit the political alarmism.
- What is it about farm antibiotic use that makes it such an attractive focus of public fear? A look into the psychology of panic.
- Why can’t reasonable scientists agree on antibiotic risk?

For the record...

‘Risk’ has become the buzzword that implies political action must be taken. But real risk assessment is a discipline that seeks to balance costs and benefits of political action.

SCIENTIFIC RISK OR POLITICAL RISK?

“The risks to public health are immense.... Congress should... eliminate the use of antibiotics in animal feed.”

Akron Beacon Journal Nov. 26, 2007.

“Congress must act now to [force accelerated reviews of existing antibiotics]. If it fails to do so, it risks passing a bill that compromises America’s public health.”

Baltimore Sun, July 10, 2008

“The nation is clearly at risk of an epidemic outbreak of food poisoning caused by drug-resistant bacteria....”

Sen. Edward Kennedy, Feb. 12, 2007

Clearly some politicians sense

there’s risk about antibiotic use in farm animals. But is it scientific risk or **political risk**?

WHAT THE SCIENCE SAYS

Consider the case of penicillin, the 50-year-old poster child for the panic surrounding farm antibiotic use—panic as in: “Drugs such as penicillin and tetracycline, used routinely to treat respiratory disease and heart infections in humans, are also fed routinely to farm animals—not to treat diagnosed disease, but to promote growth and to compensate for the

overcrowded, stressful, unsanitary conditions on factory farms,” as penned in July’s *Baltimore Sun* by **the activists** Margaret Mellon and David Wallinga.

The fact is, according to manufacturer data compiled by the non-profit Animal Health Institute, the amount of penicillin sold to U.S. farmers is only a fraction of all such antibiotics, and the portion of that portion used solely to improve performance amounts to a rounding error on the tonnage of human antibiotics prescribed every year. The specific form of penicillin approved for anything other than disease prevention and treatment is not used at all in cattle, and USDA survey data show 99.5 percent in swine is given for disease treatment, control or prevention.

IS HUMAN HEALTH AT RISK?

Still, it’s theoretically possible farm use of penicillin could impact effectiveness of penicillins in humans. So risk-assessment specialist and theoretical mathematician Tony Cox, PhD, and systems modeling specialist Douglas Popken, PhD, compiled the available numbers on hospital intensive care unit *Enterococcus* case loads and their rates of resistance to human penicillin. Then, using a set of better-safe-than-sorry estimates about other factors, they attempted to tease out which portion of deaths can correctly be attributed to an infection that likely came from animals, which was made harder to treat with penicillin because on-farm use of penicillin made it more resistant to the drug.

Drs. Cox and Popken’s **calculations predict** continuing use of penicillin risks leading to an additional 0.135 deaths per year in the entire U.S. population—or about one additional death every seven to eight years, if current conditions persist. Using less conservative assumptions, the estimated risk

ANTIBIOTIC RISK ANALYSIS RESEARCH HIGHLIGHTS

HOW EFFECTIVE IS A BAN?

Risk assessment expert and author Tony Cox, PhD, used existing data on treatment failures due to *Enterococcus faecium* resistant to the antibiotic vancomycin and worked back to use on farms of the related antibiotic virginiamycin. His model then predicted the **number of human treatment failures** that could have been prevented assuming the antibiotic were banned. The result? 1.8 cases in the entire population over five years following a ban, saving an estimated 0.29 lives.

Cox LA, Popken DA. Quantifying human health risks from virginiamycin used in chickens. Risk Analysis, 2004; 24(1):271–288.

RARE RISKS. Iowa State veterinary epidemiologist Scott Hurd, DVM, PhD, **modeled the risk** of continuing to use macrolide antibiotics in the U.S. His study shows that even using conservative estimates, the estimated risk of compromised treatment outcomes are vanishingly low:

ANNUAL RISK OF A POORER OUTCOME DUE TO MACROLIDE USE IN...

	CHICKEN (C. COLI)	CHICKEN (C. JENUUNI)	CATTLE
SWINE	1 IN 82	1 IN 6.2	1 IN 2.4
MILLION	BILLION	BILLION	MILLION

Hurd HS, Malladi S. A stochastic assessment of the public health risks of the use of macrolide antibiotics in food animals. Risk Anal. 2008 Jun;28(3):695–710.

RISK IN NOT MEDICATING.

Other work by Dr. Cox estimates ending the use of virginiamycin in animals would likely cause an additional 6,660 human illnesses per year caused by *Campylobacter*. Since the number of illnesses avoided by not using the antibiotic would be less than two per year, **the model demonstrates** that withdrawing animal antibiotics can cause far more human illness-days than it would prevent.

Cox LA Jr. Potential human health benefits of antibiotics used in food animals: a case study of virginiamycin. Environ Int. 2005 May;31(4):549–63.

BAN CAUSED DISEASE? Dr.

Cox again draws on existing human health data to predict that ending use of the fluoroquinolone enrofloxacin (which FDA mandated in 2005) and macrolides in U.S. broiler production would be **expected to cause** an added 1,000 cases of *Campylobacter*-related illness for every one case it avoided.

ESTIMATED SICK DAYS PREVENTED FOR EVERY SICK DAY CAUSED BY CONTINUING TO USE...

ENROFLOXACIN	703 PER YEAR
MACROLIDES	4,500 PER YEAR

Cox LA Jr, Popken DA. Quantifying potential human health impacts of animal antibiotic use: enrofloxacin and macrolides in chickens. Risk Anal. 2006 Feb;26(1):135–46.



WHAT LEADS THE PUBLIC TO INSIST ON GETTING THE RISK WRONG?

The human brain, writes **statistician Maia Szalavitz** in *Psychology Today*, evolved ancient mechanisms to make snap decisions based on quick risk assessment. That mechanism served us well in the prehistoric world of predators and natural disaster. Unfortunately, it is poorly suited to the **modern world** of assessing risk communicated by statistics, media and politicians. And unfortunately for agriculture, the antibiotic resistance issue is tailor-made to trip several of those ancient triggers. Here's why:

SUBCONSCIOUS FEARS RULE. Fear is the natural reaction to the odds of injury from ancient threats. That often makes modern reaction to subconscious fears—like risk of dying by eating contaminated food, a real risk in the days before modern food preservation—out of proportion to the **real risk it poses.**

DRAMA ENHANCES FEAR. In other words, Szalavitz writes, the more spectacular, the more we fear, no matter the odds. Such dramatic fear could explain the preoccupation, for instance, with “flesh-eating” MRSA in food, despite zero scientific evidence it is related to antibiotic use on farms.

CONTROL SOOTHES US. If we're able choose the risk we assume, we worry less about it, according to Szalavitz. Two reasons underlie the effect, she says. First, if we assume the risk voluntarily, we feel power to manage the outcome; second, choosing risk assumes we think through potential benefits. That theory implies approaching consumers with a “take it or leave it” attitude about farm antibiotics—without explaining their benefits—works against us.



HUMANS 'RISK SWAP' The classic example, cited by Szalavitz, is eating heart-unhealthy ice cream because you had a (healthy) diet soda with lunch. People tend to have a set level of risk which remains constant, as they assume higher risk even while they reduce it somewhere else, which could explain the absolute illogic of “organic cigarettes.”

VALUES IMPACT. Statistically speaking, smoking marijuana is safer than playing high school sports. Yet it would be absurd to argue parents should urge their children to give up the latter for the former. Values count, which explains why people like the **PEW Commission**, who criticize intensive farming, easily discard scientific proof of low risk of antibiotic resistance when it doesn't fit their values. To change the risk acceptance, you have to change the values.

NATURAL MUST BE SAFER. The familiar and natural is seen as less risky than the unnatural and synthetic. That offers another explanation for the obvious illogic of choosing “**raised without antibiotics**” when research shows such products are more likely—not less—to carry disease-causing bacteria.

Source: Based on Szalavitz M. 10 Reasons We Get the Odds Wrong. Psychology Today. 2008 Jan/Feb;41(1):96-102.

falls to about 0.04 excess deaths annually, or about one every quarter century. Assuming the average American lives 80 years, that means he faces an increased risk that's about 3,600 times lower than the risk normally considered acceptable for cancer-causing compounds in the environment. And since Drs. Cox and Popken modeled the risk for all penicillin uses, the risk attributable solely to low level use in feed is almost certainly even lower.

GETTING BEYOND BLAME

Such careful, quantifiable risk assessments are a necessity if we're going to move from simply blaming to developing management strategies

that make a difference, Dr. Cox says.

“Scientists who want to affect policy have an obligation to do much more than raise potential threats. They should have an obligation to say something useful about the magnitude of those potential threats,” he says.

“Providing only a little information, charged with emotional triggers, but without quantitative risk information that helps clarify basis for effective action, can manipulate people into wasting limited resources in ways that do very little or no good.”

HOW LONG IT WOULD TAKE TO SAVE ONE ADDITIONAL HUMAN LIFE

From untreatable *Enterococcus* infection if penicillin use in food animals were stopped



Source: Cox LA, Popken DA, Mathers, JJ. Human Health Risk Assessment of Penicillin/Aminopenicillin Resistance in Enterococci Due to Penicillin Use in Food Animals, Risk Anal 2009 In Press.

Principal Points

The real risky business: Leaping to legislation without first assessing the risk
Vol. 8 No. 2 May 2009

- Newly re-introduced legislation to ban farm antibiotics bases its case on the belief that using farm antibiotics puts the health of consumers at risk. However, such calls for action seldom, if ever, quantify that risk.
- When scientists actually calculate the risk that a specific antibiotic might increase the chances that a specific human disease will be more difficult to cure, in most cases they find the risk of continuing to use the antibiotic is tiny, if not zero.
- One such careful risk analysis, just released in late March, predicts continuing to use penicillin in poultry and pork production may contribute to one potential excess death every seven to eight years, using conservative assumptions. Adjust the base case values with more likely values, and the incidence drops to about one potential excess death every 25 years. Actual risks could be zero.
- Regulators and politicians should respect the scientific process of careful risk assessment and risk management.

For the Record, sponsored by a grant from ALPHARMA Inc., Animal Health, is designed to help unite the industry and provide a unified, rational message on behalf of producers whose freedom to use safe, effective, economical production methods is at stake. Working together, we can set the record straight on antibiotics.

Questions or comments? E-mail Steve Kopperud at skopperud@poldir.com or editor Mike Smith at CustomMedia@Food360.com. Read past issues or link to more information on this issue at www.AntibioticTruths.com.

WHY CAN'T WE ALL AGREE?

DR. SCOTT HURD, DVM, FORMER USDA DEPUTY UNDER SECRETARY FOR FOOD SAFETY, ASSOCIATE PROFESSOR, IOWA STATE UNIV. INSTITUTE FOR FOOD SAFETY AND SECURITY

As a risk analyst specializing in food-borne illness, I often find myself asking, "How can conscientious public health officials and conscientious scientists so diametrically disagree on whether food animal use of antibiotics is causing risk of human disease?" I think there are three reasons.

First, I don't think the public health community understands it's a long, long way from the farm to the fork. And a number of interventions take place along the way to keep people from getting sick from food-borne pathogens—antibiotic-resistant or not.

Second, I think folks forget that if you argue for taking antibiotics away from the farm, then you should meet the burden to establish a specific causal pathway—linked all the way from the farm to the sick individual. Certainly, when you look at the microbiology of resistance, we know in a general sense that most bacteria when grown in the presence of an antibiotic will develop resistance mechanisms. But a lot of people have taken that understanding of microbes in the test tube and leapt to make national policy. The problem is the data don't support the pathway of cause and effect.

Consider Denmark, where growth-promoting antibiotics were removed from pig production. The World Health Organiza-

tion (WHO) studied the issue about four years after the ban, and it found little to no improvement in public health. In fact, WHO suggested the possibility of some *increased* risk to public health because of the ban.

The third and related reason I believe thoughtful parties can't come to consensus is that any such causal pathway is going to vary by which antibiotic and which bacteria you're looking at. So it really has to be addressed on a case-by-case basis—there are no shortcuts. When you do that, looking at the few risk assessments that have been published for specific drugs, you find they show an extremely low risk that people are going to have any extra illness because of farm antibiotic use.

The FDA has said we need to assess risk on a case-by-case basis, and drug sponsors have responded. A broad based ban like Europe's and the one proposed in Congress, aimed at entire classes of antibiotics based simply on the way they're used, short-circuits that scientific risk-assessment process. It's throwing out the baby with the bath water.

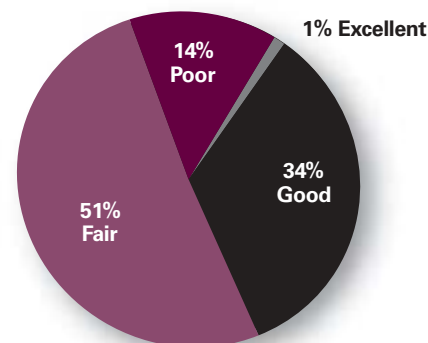


CAN WE RELY ON THE MEDIA TO REPORT IT RIGHT?

Lawmakers, too, read the media, (both House and Senate bills to ban farm antibiotics, for instance, quote the supermarket checkout magazine *Consumer Reports*). So it's worth asking: Do they get it right when it comes to reporting on health risks? Minnesota journalism professor Gary Schwitzer, PhD, reviews health journalism research, surveys health care journalists and interviews journalists for his **annual report** on the state of health reporting. His conclusion this year: Financial stress in the media has contributed to some "troubling" trends. They include "quick hit" stories, often based on summarized medical studies, which tend to sacrifice quality, fewer in-depth or complex stories,

especially about health policy, and more lifestyle and consumer health-related fluff stories.

Health reporters grade themselves: "How would you rate the news media for its coverage of health care?"



Source: Schwitzer G. *The State Of Health Journalism In The U.S.* Menlo Park, Calif.: Henry J. Kaiser Foundation, 2009.

For the Record

Straight talk about antibiotic use in food-animal production
Volume 4, Issue 2

Sponsored by ALPHARMA Inc. Animal Health
April 2005

MEDIA RELATIONS THAT GET YOUR STORY HEARD

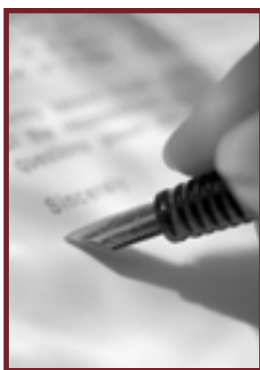
Take up a pen and join the revolution

Among those who make watching the media their business, many believe we are in the middle of nothing short of an era change: The century-long monopoly "Old Media" held on news dissemination and discussion is crumbling. Hairline cracks first opened when news consumers began questioning the objectivity of their news after CBS anchorman Walter Cronkite openly opposed U.S. involvement in Vietnam almost 40 years ago. Today the trumpets have blown outside the walls in the form of recent scandals surrounding old-line news organizations' naked bias. In the process, it's shaken at least three of the temple's pillars — CBS' Dan Rather, CNN chief news executive Eason Jordan, and *New York Times* Executive Editor Howell Raines.

Out in FlyoverCountry, where real news tends more to weather and The Illini, this coastline revolution may seem a fight in which we have no dog. Yet for food producers concerned with protecting their proven safe practice of using antibiotics to produce meat, milk and eggs in the midst of relentless — often ill-informed — news coverage, the change offers revolutionary opportunity.

The Internet-driven New Media revolution has suddenly flipped the pit-pump switch on what was once a pretty anaerobic process. Today, anyone with an Internet connection and a working knowledge of **search engines** can immediately spot the pattern of identical

words and phrases popping up in newspapers separated by 1,000 miles — a pattern that immediately signals the news "reporters" have relied on an **activist's press release** to feed them their news. He can quickly discover



the backgrounds and previous words of a quoted "**health authority**," who in reality works for an activist group opposing technological farming.

More importantly, with only slightly more effort, he can drop a quick note to the advertising manager of the local station, asking why — in the heart of farm country — he's placing his advertisers in the uncomfortable position of promoting a "health" web site like **meatlessmonday.com**, a disguised front for **anti-agriculture**

activists. Or he can e-mail the local paper's publisher, asking why his subscription check must go toward purchasing a twice-weekly **syndicated pet doctor** column written by a **disguised animal activist** who has previously suggested animals' rights are equal to humans' and that our treatment of animals somehow earned the terrorist attacks of 9/11.

This revolution in media transparency and accountability is a lesson not lost on the activists who oppose your use of technology and capitalism to help feed the world. They have turned it into an artform, as you'll see inside. It's art you, too, can learn and apply to protect your rights to pursue your livelihood.

Also in this issue:

- **In the spirit of fire fights fire, here are some tactics you can learn from activist groups aligned against you to protect yourself**
- **A case study in poor news reporting that results when you don't make your side heard**

MYTH-BUSTER AMMUNITION TO FIGHT BACK

The best of the worst: An activist reading list

Want to learn from some of the best? Hold your nose and check these handbooks:

■ ***The One-Hour Activist: The 15 Most Powerful Actions You Can Take to Fight for the Issues and Candidates You Care About.*** A good outline of the model activists use first to get attention from regulators and then to keep the pressure on them.

■ ***MoveOn's 50 Ways to Love Your Country: How to Find Your Political Voice and Become a Catalyst for Change.*** A basic outline from the new masters of Internet spin and fund-raising, MoveOn.org.

■ ***Organizing for Social Change: Midwest Academy: Manual for Activists.*** Now in its third edition, this decade-old workbook has been used as a textbook at Harvard, Johns Hopkins and others.

Note: Find it hard to bring yourself to support some of these organizations by buying their book? Most are available used at www.amazon.com

For the record

The waning monopoly of the traditional media has opened opportunities for you to make your side heard. Take some tips from the masters of the craft: the activist groups.

For the record

To make your message effective, learn from the activists:

Make it personal, keep it local, and communicate human values.

Fighting fire with fire: Lessons from Activist PR 101

Nobody's mastered use of the new media better than the anti-technology, anti-agriculture activist groups, most of whom regularly scare or entice the media into promoting one aspect of their message: Government must stop your ability to use antibiotics. In

GRACE to help them frustrate farm startups and expansion through zoning hearings. By hiding behind the local face, GRACE provides expertise without giving the distasteful appearance of being an outside agitator.

It's a common activist strategy that can be easily turned against them. Whenever you get the chance to defend agriculture and your production practices, start your defense with the positive impact you make on your neighbors — and the negative consequences that would occur by following the lead of unwelcome outsiders.



Activist groups win the communication battle against agriculture by putting human faces on their message.

Keep your friends close...

Perhaps one of the most powerful tools the Internet revolution has created is the almost instant ability to connect beyond that local level. Activist attacks are often seen as focusing on a specific business, industry or technology. Yet those focused attacks are almost always just one prong of a multiple network of activist causes.

Case in point: Current participants in the Keep Antibiotics Working campaign. Although that network includes obvious groups like Center for Science in the Public Interest, Food Animal Concerns Trust, Safe Tables Our Priority, and Physicians for Social Responsibility, the list of supporters also includes such less obviously anti-antibiotic-use groups as the Sierra Club, Environmental Defense, the Humane Society of the United States, and even the National Catholic Rural Life Conference.

That odd but effective coupling occurs, according to Canadian public relations consultant Ross Irvine, because activist groups like these have both an affinity — and perhaps more importantly — a willingness to work together with associations that don't represent their primary goals, but can nevertheless move them forward.

And in unfortunate contrast to that activist network that's "extensive, intense, and dense," Irvine says, agriculture too often tries to too narrowly explain or defend only a single business, industry or technology.

What's needed, he counsels, is equal work and willingness on the part of agricultural organizations to actively recruit networks that reach far beyond just crossing species boundaries — a move that itself was taboo until only about 10 years ago. Producers and their organizations must link with all agriculture producers and suppliers, as well as outdoor sports groups, chambers of commerce, business development groups, mining interests, timber interests, wise-resource-use groups, biotechnology concerns, human pharmaceutical representatives — any group that has even a passing interest in protecting science-based decision-making, economic development, consumer freedom and free enterprise.

...But keep your enemies closer

Another benefit of today's Internet-based activism is it

the spirit of fire fights fire, here are some tactics you can learn from them to protect yourself:

Make it all personal

People relate to people, and they relate to symbols. Activists understand this concept when they solicit first-hand horror stories about food poisoning and antibiotic resistance, when they seek out and provide personal stories to reporters and editors, and when they emphasize the personal toll that can result to anyone from a human case of disease that resists treatment.

Understanding the facts about antibiotic use and food production is important. But relying simply on fact won't inspire consumers to your side. Instead, you have to learn to out-symbolize the activists. Think:

- Making food affordable for working families.
- Improving the health and well-being of baby pigs, doe-eyed calves and fluffy chicks.
- Protecting family farmers and the small businesses they support, helping keep them in the community.

Make it all local

All politics are local, the old saying goes, and activist groups have mastered the strategy of gathering global information and expertise via the Internet, but customizing its application to local issues, business and faces.

The anti-technological farming group Global Resource Action Center for the Environment, for instance, has in the past solicited citizens to invite

Write an effective letter

The old-fashioned letter to Congress remains one of the most effective tools to make yourself heard, says Christopher Kush, author of *The One Hour Activist* — if you remember these tips:

■ **Start with your representatives.** The unfortunate reality, Kush believes, is that being able to flash an address within an elected rep's district trumps about everything else when it comes to getting your letter read.

■ **Don't rely on fake grassroots.** That includes form letters, canned mailings and "click here to e-mail your congressman" web pages. The likelihood your correspondence will make an impact is in direct proportion to the amount of time you appear to have invested in it. A well-thought, well-written personal letter — hand written or typed — stands an infinitely better chance of making an impact beyond simply becoming a "for" or "against" tick on a tally sheet.

■ **Start and conclude your letter with a specific request.** The narrower, the better. For instance: "Please vote against Congressman Brown's proposed legislation that imposes blanket limits on our ability to use antibiotics in food

production, and encourage your peers to do likewise." Whenever possible, cite the bill number you're referring to.

■ **Give your representative something personal to work with.** Professional lobbyists flood Congress with statistics on the issues, Kush says. What legislators long to hear instead are the personal, local aspects of those issues. Write about how many generations have raised animals on your farm — using antibiotics. Detail the specific personal cost losing that ability would mean to you and your community.

■ **Ask for a follow-up to let you know how the congressman stands or votes in regard to your request.** Provide full contact information to encourage that contact.

■ **Encourage your peers to follow suit.** Because congressmen listen to the people who vote for them first, copying your letter to more than your representatives does little good. Instead, leverage your impact by encouraging others to write to theirs. Try to coordinate the campaign so everyone is making the same, specific request.

■ **Consider meeting in person.** It's probably the most effective way to make yourself heard and have an impact.

has enabled more transparency about not only activists' beliefs, goals and tactics, but their funding sources, as well. Most offer organizational news via their web site or newsletter. Make it a habit to subscribe, read and search the Internet for more information on key points that emerge, Irvine suggests.

Spread the gospel

Activists succeed because they're passionate about their cause, and because they infect the masses with that passion — they "communicate values" as Irvine puts it. And they communicate in values-speak that gives them the high moral ground — protecting human

health, guarding the environment, defending children — while making us appear to be mercenary, cold, heartless and driven purely by self-interest. At the same time, they make no attempt to appease or co-exist with the cause they oppose. With a zeal that borders on the religious, they aim to stamp out what they oppose, not learn to build a workable relationship with it.

Public relations and advocacy communication aren't rocket science, Irvine says. The basic skills are all easy to find. What will win the fight for preserving our way of business — and make no mistake, it is nothing short of that — will be our willingness and ability to work the public the way the activists do.

Effective polarity

They say...

Misuse of antibiotics threatens to plunge us into a medical Dark Ages.

Antibiotic resistance threatens the health of cancer patients, premature babies and senior citizens.

Unknown consequences of antibiotic use in animals are turning every consumer into an experimental petri dish.

Antibiotics in livestock waste could threaten the environment.

You say...

Innovative livestock production has opened a golden age of affordable protein for the poorest consumers.

Economic supplies of high-quality protein and calcium have reduced childhood malnutrition, prevented widespread iron deficiency in women and helped prevent crippling osteoporosis in elderly women.

The most risky diet is one that scares consumers away from adequate supplies of protein and calcium from meat, milk and eggs.

Requiring thousands more acres to grow the additional feed we would need to raise animals without antibiotics would reduce wild habitats and forests.

For the record

As much as we'd like to, we cannot win the consumer's favorable opinion by communicating science alone.

For the Record

For the Record, sponsored by a grant from ALPHARMA, is designed to help unite the industry and provide a unified, rational message on behalf of producers whose freedom to use safe, effective, economical production methods is at stake. Working together, we can set the record straight on antibiotics. Questions or comments? Contact Steve Kopperud at skopperud@poldir.com. Want to read past issues or link to more information on this issue? Visit us online at www.alpharma.com/ahd/For_The_Record

Listen up: This is not about science

The difficult reality is that if antibiotic use in food animals were strictly a scientific issue, we wouldn't be facing the problems we are. Because many of us are scientists or trained in science, we



Eric Gonder, DVM
Senior Staff Veterinarian
Goldsboro Milling Co.

assume talking about science will carry the day here. It won't.

Refuting activist propaganda by sticking only to science is basically fruitless, even when it can be done in a timely manner — and it usually can't be if research is needed. We must not forget that the goal of activists presenting scientific information is not to further scientific truth, but to influence public opinion to achieve activist objectives. It is not a scientific debate, and continuing the

dialogue in that form alone is inappropriate and dangerous. If we lose the battle for public opinion, science becomes moot — we must respond in a way that serves both the purposes of public dialogue and of science.

We must make science work for us in getting out the message of what could happen to the public — what will happen — without access to antibiotics. That's a story that can move.

Those of us in production agriculture must be agile in communicating the consequences of the larger attack on efficiency from those who oppose "factory farming" for whatever reason. That will move the argument away from the scientific details of antibiotic use which many consumers will find hard to understand or tedious, and back to the social and public-policy implications which get and hold those consumers' (and voters') attention. Some examples:

■ How much environmental damage will be caused by reducing production efficiency simply to cater to the development of fashionable boutique foods?

■ How many people will have to go hungry when we try to feed today's population using farming practices of 40 years ago?

■ How many animals will suffer needless disease in the name of avoiding some unproven risk to human health?

We must be ready and willing to describe the environmental, economic, social and cultural effects of what's happening. As convinced as we are of the science, we must learn to talk to our public in the language and values they choose, not the ones we're most comfortable with. Using their lack of science as permission to stay above the fray will only allow the opposition to plaster us day after day as environmental and social monsters.

MEDIA RELATIONS THAT GET YOUR MESSAGE HEARD

A case study: What happens when you're not heard

The Jan. 15 issue of the medical journal *Clinical Infectious Diseases* reported a study from University of California at Berkeley's School of Public Health. The study concluded an outbreak of antibiotic-resistant urinary-tract infections in women at several university hospitals in late 1999 and early 2000 "potentially [had] an animal origin," in the words of the study authors.

The news that seemingly innocent statement turned into offers an object lesson in how simple activity from anti-farming activists, coupled with inaction on our part, leaves a vacuum of information that fills up with their story, not ours:

- At least 21 radio or TV stations nationwide, two wire services, and six health-related publications reported the story within two weeks after the study's release. In keeping with the media's tendency to soundbite and thus oversimplify complex issues, most ended up stretching the wording of the study to something similar to this sample from Minneapolis: "... antibiotics given to animals that humans eat is making it more difficult for doctors to treat urinary-tract infections in women."
- At least seven of those reports quoted or interviewed Dr. Margaret Mellon, although she was in no way associated with the study or UC-Berkeley. Instead, Mellon is Food and Environment Program Director for the activist Union of Concerned Scientists. Her interviews were provided by the public relations agency for [Keep Antibiotics Working](#), another activist group to which UCS contributes.
- None of the reports explored questions regarding the study's conclusion, including:
 - None of 495 bacterial specimens collected from animals over a 37-year period and then compared to the bacteria isolated from the sick women were identical when tested with the recognized "gold-standard" of molecular typing. The closest match, at 94 percent similar — and upon which the study conclusion was made — was collected from a cow more than a decade before the outbreak.
 - No epidemiological evidence explored a common food source.
 - No information was presented regarding what antibiotics, if any, that cow was given.
- None of the news stories mentioned an [editorial commentary](#) immediately following the journal article, written by University of Washington Professor of Medicine [Thomas M. Hooton](#). Hooton said that although he agreed with the premise of the Berkeley study, the authors' evidence had failed to prove their conclusion. Hooton said only one publication had contacted him regarding the study or his commentary: *For the Record*.