Animal antibiotics under tougher United States scrutiny as consensus grows on "superbug" risk to humans

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Antibiotics are increasingly becoming the cure that also curses, as more and more infections arise from resistant bacteria. The United States, recognizing a public health threat in that microbial stew, is moving to limit the ubiquitous drugs in the "patients" using them the most: farm animals.

The US Food and Drug Administration (FDA) has come out with recommendations that antibiotics important to human health be used in livestock only for medical purposes and under veterinary supervision. That's a far cry from today's common practice of using the drugs to make cattle, pigs and chickens grow faster, and routinely lacing their feed to cut costs and gain efficiency.

So far, the government's only tool in this new effort is persuasion.

The FDA lacks the authority to intervene broadly in the matter and attempts to give regulators more power have been met by potent lobbying, usually successful.

Still, the recently announced steps, however modest, herald a higher benchmark in American food oversight even as other major farm economies, such as Denmark, have gone farther, faster and the World Health Organization (WHO) launched a Global Strategy for Containment of Antimicrobial Resistance in 2001 (www.who.int/mediacentre/factsheets/fs194/en/).

Scientists in the US and internationally have sounded the alarm for decades about the overuse of antibiotics by humans and animals. That warning has grown louder. President Barack Obama's administration seems more inclined to heed it than administrations of the past.

By contrast, Canadian efforts to develop a national response to antibiotic misuse in agriculture or to contain antimicrobial resistance are stagnant (www.cmaj.ca/cgi/doi/10.1503/cmaj.109-3109). Meanwhile, experts say that Public Health Agency of Canada data warrant restrictions on off-label farm use of cephalosporins (www.cmaj.ca/cgi/doi/10.1503/cmaj.091009).

The food industry commonly uses antibiotics to make cattle and other farm animals grow faster, routinely lacing their feed to cut costs and gain efficiency.

The FDA released draft guidelines June 28 urging restraint in the use of antimicrobial drugs in food-producing animals (www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM216936.pdf). Final guidance will follow a period of public comment.

"The development of resistance to this important class of drugs, and the resulting loss of effectiveness as antimicrobial therapies, poses a serious public health threat," the FDA said.

The draft guidelines embrace antimicrobial therapies to combat animal disease and support their use — judiciously — in preventive treatments. But regulators are targeting the indiscriminate use of the drugs merely for production purposes and say veterinary supervision or at least consultation should be employed.

"This is the first step in FDA establishing principles from which we could move to other steps," FDA Deputy Commissioner Joshua Sharfstein told a news conference. "This does not tell people what to do. It establishes principles and tells people how to achieve those principles."

Margaret Mellon, senior scientist and director of the food and environment program for the Union of Concerned Scientists, wished the government had, in fact, told industry what to do — and exercised the authority it has. Her group is leading the advocacy for antibiotic controls.

"What I've heard from the industry is that they're still denying there's a

problem," she says. "I don't see them stepping up to the plate."

Even so, she adds, the consensus for action appears to be on the rise. "I do think the case is mounting, the science becomes ever more compelling. I think the handwriting is on the wall."

An estimated 70% of antibiotics used in the US are consumed by animals, compared with about 50% internationally. Scientists contend antibiotic-resistant infections are deadlier than breast cancer and prostate cancer together, claiming more than 65 000 lives in the US each year.

Louise M. Slaughter, a Democratic congresswoman from New York, has been leading the effort in the House of Representatives to crack down on use of the drugs in farm animals. Her legislation would phase out seven classes of antibiotics approved for nontherapeutic use in animals and seeks to restrict mass, routine application of the drugs in herds and flocks as a preventive health measure.

As she put it when introducing the bill: "If you mixed an antibiotic in your child's cereal, people would think you're crazy."

She called the FDA's new proposals "very timid," if a welcome first step, and warned that without a regimen of drug controls comparable with standards abroad, US meat and poultry exports will suffer.

"No, the FDA did not go far enough," she says. "We need to do much more, especially for farmers who are at risk of losing out on foreign markets."

In any event, the FDA recommendations are part of a gathering drumbeat from US agencies, international regulators and health scientists who say antibiotics are increasingly at risk of losing their effectiveness as resistant pathogens accelerate their evolutionary end-run around the drugs.

"A superbug," Slaughter said, "will stop feeling the effects of our best antibiotic."

Even as the FDA proposals emerged, Danish pig farmers announced a voluntary moratorium on the use of the antibiotic ceftiofur, in what Kansas State University epidemiologist H. Morgan Scott calls a "natural social experiment to see if voluntary controls can work."

Danes have the discipline of agricultural cooperatives behind such an effort, says Scott, an adviser to the WHO on antimicrobial resistance. "There are enormous social pressures within the Danish system that would make noncompliance grounds for pariah membership. Whether the same pressures exist in the US is uncertain."

Without firm rules, Scott says, producers are only going to hold back on antibiotics if they are assured others are not gaining a competitive advantage by using them en masse. "In the absence of a regulatory framework that becomes the key issue: trust."

Major studies going back 40 years have progressively pointed a finger at antibiotic overuse and concluded that resistant bacteria have indeed been transferred to humans from animals.

The FDA is most able to block animal drugs that pose a risk of drug resistance in humans when those antimicrobials are new, and to withdraw existing drugs for the same reason if they were approved after regulations were tightened in 2003.

But the drug-by-drug review process is onerous, especially if the government wants to yank antibiotics that have been used in animals for decades, approved in a time of lesser understanding.

Against that backdrop, merely asking producers to be more responsible with antibiotics might give way, before long, to strict regulations. — Cal Woodward, Washington, DC

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