Most consumers are generations removed from working with and caring for farm animals. So, it’s easy to understand why many are concerned by the use of antibiotics and other medicines in food animals and what that means to their family’s health. And often, media coverage and meat labels, like “antibiotic free,” add to their uncertainty rather than help answer questions.

Consumers tell us they are concerned that bacteria present on or in meat may be resistant to antibiotics and may lead to illness that proves difficult to treat. And some are worried that they ingest antibiotics by eating meat, which could lead to resistant illnesses.

It is important to understand that resistant bacteria contaminating foods derived from animals are a source of concern for public health, but, as the Centers for Disease Control and Prevention (CDC) just publicly affirmed (2013), not all resistant bacteria of concern to people are coming from animals. Very few, in fact, are coming from animals compared with the number of multidrug resistant superbugs emerging from hospital settings.

Following are some facts that may help:

ANTIBIOTIC RESISTANCE

FACT: Antibiotic-resistant illness is a bacterial illness that requires antibiotic treatment, and in which the pathogen is not stopped by, or is resistant to, that treatment. Most often, antibiotic-resistant infections in humans are not related to foodborne illnesses. While some foodborne illnesses may be caused by resistant bacteria, most foodborne illness do not require antibiotic treatment.

The possibility exists and debate continues on the extent to which antibiotic use in food animals may contribute to antibiotic treatment failure in humans. Therefore, we are committed to continuing our work to minimize this possibility while helping our customers care for animals.

But first, how might resistant, foodborne illness happen? A number of factors all would need to converge:

• An animal receives an antibiotic which then may lead to the creation of a subset of bacteria that become resistant to the antibiotic and populate the gut of the animal (this happens when humans take antibiotics as well).
• Despite best efforts to eliminate or reduce pathogens and bacteria on meat during processing, the resistant bacteria remain on the meat, or the meat becomes contaminated from another source in the plant or later during retail meat production.
• Despite careful handling of the meat at the point of packaging, resistant bacteria remain on the meat.
• Consumers or food service workers improperly handle or do not thoroughly cook the meat, so those bacteria remain alive or cross-contaminating other foods and are ingested by the consumer. The resistant bacteria make the consumer sick.
• Most frequently, the sick individual recovers without the need for antibiotics. But in some cases, individuals may need an antibiotic, and the chosen antibiotic is not effective because the bacteria is resistant to the chosen antibiotic.

The whole issue is complicated by the fact that resistant bacteria may be found in animals whether or not they have received antibiotics during their lives. There are many avenues — through water, food, wildlife, improper meat handling and cross-contamination — by which antibiotic-resistant bacteria can populate the bodies of people and animals. And it is well documented that we all carry resistant bacteria in our bodies, especially if we have taken antibiotics in the past.

MINIMIZING RISK OF ANTIBIOTIC RESISTANCE: GUIDANCE FROM THE CDC

The most important questions are: How do we as consumers minimize the possibility of acquiring a resistant infection, and how can we minimize the emergence and spread of resistant bacteria? The CDC recently issued a report highlighting the scope of the antibiotic resistance problem and identifying the 18 microorganisms that currently pose the greatest risk.
The biggest resistant infection threats come from human use of antibiotics and human spread of these pathogens in hospitals and community settings. Here, everyone has a role to play:

• Take antibiotics exactly as the doctor prescribes. Do not skip doses. Complete the prescribed course of treatment, even when you start feeling better.
• Prevent infections by getting recommended vaccines and practicing good hand hygiene.
• Only take antibiotics prescribed for you; do not share or use leftover antibiotics. Do not save antibiotics for the next illness. Discard any leftover medication once the prescribed course of treatment is completed.
• Do not ask for antibiotics when your doctor thinks you do not need them.
• Frequently wash hands with soap, especially in child care centers, hospitals, elementary schools, restaurants and homes with small children.

A few of the resistant bacteria identified may be spread through food and water, and the general safeguards that apply to any foodborne infection apply here as well, such as proper food handling, storage and preparation (see sidebar on next page). The CDC addressed the broader farm policy aspects of this challenge by endorsing the following actions that the U.S. Food and Drug Administration (FDA) has recently undertaken:

• Stopping the use of antibiotics for promoting growth in food animals, as the FDA’s new policy recommends. The FDA views using antibiotics for promoting animal growth as an inappropriate use of these important products, and Zoetis agrees. The animal health industry, including Zoetis, is complying with the FDA’s request that all medically important antibiotic products that are used for promoting growth in food animals are removed from the market by the end of 2016.
• Requiring that antibiotic use in food animals is overseen by a veterinarian to help ensure safe and appropriate use. Zoetis is supportive of this action, as well.

WHAT ZOETIS IS DOING

• Research: Zoetis is actively researching new compounds and variations of existing medicines to help meet evolving animal health needs. We are exploring fail-safe medicines to help ensure that the right amount of medication is delivered to animals to restore health, thus reducing the potential for antibiotic resistance development.
• Government Oversight: We believe in strong government oversight for the approval and terms of use for all antibiotics. Part of this approval process includes assessing the potential risk of the development of antibiotic resistance that could possibly impact human health, and requiring any measures necessary to reduce that risk before the antibiotic is used in livestock. We also strongly support monitoring and testing of the food supply to: 1) ensure that antibiotic residues are not in the milk and meat; 2) monitor bacteria to help identify trends that will lead to better understanding of residue causes; and 3) help identify more effective safeguards in the food chain.
• Veterinary Support: We know that there is a direct relationship between on-farm involvement of veterinarians and the quality of animal care, which in turn has direct food safety implications. One of our top priorities at Zoetis is supporting needs of the veterinary profession — making sure that there are enough rural veterinarians in the future and that those already in the field are highly trained and have access to emerging information. That’s why we spend more than $9 million annually on programs that support educational symposia, veterinary teaching hospitals and allied organizations and we offer scholarship programs for deserving veterinarians in training. We offer a Residue Free Guarantee™ for some of our medicines, enlisting veterinarians and animal health workers to be part of the solution in further reducing residue violations by understanding and following label instructions and accurate record keeping. And we highlight “what good looks like” on the farm through a series of Veterinarians on Call webisodes.

This system of checks and balances between animal health companies, farmers and the government is a critical component of ensuring both animal and human health. Zoetis continuously works with each of these stakeholders on ways to improve this system in order to help ensure the effectiveness of these medicines for years to come.
WHAT YOU CAN DO to protect against foodborne illness:

- Wash hands, cutting boards, utensils, sinks and countertops.
- Keep raw meat, poultry and seafood separate from ready-to-eat foods.
- Use a food thermometer to ensure that foods are cooked to a safe internal temperature.
- Keep your refrigerator below 40°F and refrigerate food that will spoil.
- Avoid drinking raw milk and untreated water.
- Report suspected illness from food to your local health department.
- Don't prepare food for others if you have diarrhea or vomiting.
- Be especially careful preparing food for children, pregnant women, those in poor health and older adults.
- Consume safe food and water when traveling abroad.

References
2. FDA Judicious Use of Antimicrobials: http://www.fda.gov/AnimalVeterinary/%20SafetyHealth/AntimicrobialResistance/JudiciousUseofAntimicrobials/default.htm
3. Residues versus resistance article — It's All Antibiotic Free, Baby!: http://hurdhealth.com/2013/08/14/its-all-antibiotic-free-baby/
4. YouTube® Veterinarians on Call: http://www.youtube.com/user/veterinariansoncall
5. CDC — Foodborne Illness, Foodborne Disease: http://www.cdc.gov/foodsafety/facts.html#whatprotect

*Residue Free Guarantee: If you use a Zoetis-branded ceftiofur product according to label indications, and experience a violative ceftiofur milk or meat residue, Zoetis will compensate you for the beef market value of the animal or purchase the tanker of milk at fair market value. You must purchase the product from a Zoetis-approved supplier, use the product according to label indications, have documentation of the product purchase and treatment records, and have conducted training on appropriate use to ensure proper dose and route of administration of the product. Extra-label use as prescribed by a veterinarian is excluded from the guarantee. If you experience a ceftiofur residue violation after following label indications and the above steps, contact Zoetis VMIPS Veterinary Medical Information and Product Support (VMIPS) at 800-366-5288 to report the situation.

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