Antibiotic Abuse in the Agriculture Industry
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As we sit down to eat dinner, which most likely includes a meat product, we don’t always think about how that meat gets from the animal to our tables. Antibiotics have been used since the early 20th century to treat and prevent illness in animals as well as promote growth. In fact, estimates claim that 24.6 million pounds of antimicrobials are used every year in the United States for non-therapeutic uses.

Antibiotics such as tetracycline, penicillin, erythromycin, are commonly used to increase the size of feed-animals as well as their rate of growth. Environments such as industrial “factory farms” provide ideal opportunities for microbes to develop resistance either by mutation in the bacterial genome, or transfer of resistance genes between bacteria. Microbes can render antibiotics useless in one of many ways including rerouting metabolism around the disrupted point, ejecting the antibiotic before it can work, or by changing the part of its structure being targeted.

Studies have shown that antibiotic resistant bacteria remain in meat and feed products like milk, and can survive the harsh environment of the human stomach to colonize or “set up shop” in the intestinal tract. What effect does this overuse of antibiotics have on the level of antibiotic resistant bacteria, and can the resistance acquired by these microbes be transferred to microbes that plague humans?