STATEMENT FOR THE RECORD
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For the hearing, "Antibiotic Resistance and the Use of Antibiotics in Animal Agriculture"

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Use of Antibiotics in Livestock Production

Has it only been a generation since antibiotics represented the world's first miracle drugs? Prior to their discovery death could occur in what would seem to be very trivial injuries and diseases. What have we allowed to happen to this powerful gift of healing? Today antibiotic-resistant bacteria have become a growing public health crisis that puts our health, our finances and even our lives at risk. MRSA, along with resistant strains of salmonella, campylobacter, and E.coli have heightened our awareness of the risk we have incurred in such a short time and alarmed us to a very real threat.

I recall the warnings of one of my professors in veterinary school that we, as veterinarians, were being given a sacred trust and responsibility in the use of these drugs and they should be used wisely. As he was reaching retirement age our professor told us how as a young man coming home from WWII he had contracted a lung disease caused by a bacterium similar to tuberculosis. They gave him little hope of survival but offered to try an experimental drug, an antibiotic. Doomed to life in a sanitarium and early death, he gratefully chose to take part in the experiment. He fully recovered due to the new miracle drug. His story and strong warning has always made me consider the judicial use of antibiotics. Even then, in the beginning of my career, we understood that the overuse of antibiotics was already creating "superbugs" resistant to medication. It has been estimated that at least 18,000 Americans die every year from drug-resistant infections. This does not take into account the increase in health care cost and human suffering associated with antibiotic-resistant bacteria.

Antibiotics probably single-handedly propelled my profession and that of human physicians into the respected world of science by the dramatic effects of their administration in diseased animals and humans. Their judicious and therapeutic use is still important for the health and recovery from disease of many. It is not the therapeutic use of antibiotics with which I have an issue. It is the non-

therapeutic, low dose administration that poses the threat of causing the development of superbugs that are resistant to treatment.

Antibiotics are given to healthy animals over a long period of time to compensate for unsanitary and crowded conditions, and to promote weight gain, rather than to combat an illness. Modern industrial farms are ideal breeding grounds for germs, transmission of pathogens and feedlot diseases. Animals live in close confinement, often standing or laying in their own waste, exposed to constantly new strains of pathogens and under constant stress that inhibits their immune systems and makes them more prone to infection. According to the Union of Concerned Scientists, as much as 70 percent of all antibiotics used in the United States are fed to healthy farm animals. The intent is to prevent disease under these circumstances as well as promote maximum weight gains. When drug-resistant bacteria develop at industrial livestock facilities they can then reach the human population through food, the environment, by direct contact with animals and spread by person to person.

The world's leading medical, agricultural, and veterinary authorities have reached consensus that antibiotic overuse in animal agriculture is contributing to human public health problems. Poultry, swine, cattle and sheep raised on industrial farms or CAFO's are routinely fed low doses of antibiotics through their water or food troughs to promote growth and expedite weight gain as well as to compensate for the unsanitary conditions in which they are raised. Many of the antibiotics used on animals are the same ones used to fight infections among humans, including tetracyclines, macrolides, bacitracin, penicillins, and sulfonamides. Bacteria in animals (as in humans) are able to develop antibiotic resistance when exposed to low doses of drugs over a long period of time, contributing to the rise of pathogens that are able to defeat our shared antibiotic arsenal.

The U.S. Congress is considering legislation, staunchly opposed by industrial farm lobbyists, which would ban classes of antibiotics from use on factory farms and would restrict the use of other antibiotics. This is a response to the fact that modern industrial livestock operations threaten to increase the prevalence of antibiotic-resistant bacteria. I do not propose in this statement to offer a compilation on the research that supports this claim. These studies are well documented and prolific. Nor do I intend to comment on the studies that are funded by industrial agriculture proposing that the risk is either non-existent or minimal. I leave the exploration of these studies to the judgment of the reader. My opinion lies with the side of aggressive prudence which would end the practice that poses such a great risk rather than the side that stands to increase profits by a quicker growth rate which means higher turn over and volume.

What I believe is that ending the routine use of non-therapeutic antibiotics in animal agriculture is critical and that it is quite feasible to do so. An agricultural model that works in sync with the animal and the environment using basic

principles of animal husbandry that allows fulfilling the natural behavioral instincts of the animal in a clean natural environment allows for fewer pathogenic factors leading to disease and hence fewer drugs to treat disease. A pasture based system allows this to occur. In fact, that is how livestock was raised for thousands of years, right up until the mid-20th Century. It is not something new but rather a return to basics, raising animals how they were intended to be raised. The modern idea that the only way to feed the world is to raise animals in CAFO's using low dose antibiotics is just wrong. "Cheap food" but at what cost? I am not sure society is willing to pay the price to animal health, the environment and the effect on human health.

Today, many small, sustainable farmers do not use antibiotics at all, in large part because they don't have to compensate for unhealthy conditions and are not trying to unnaturally increase growth rate. On sustainable farms, animals are raised in a clean environment that promotes their health. Other sustainable farmers use antibiotics, but only to treat sick animals. The practice of feeding antibiotics to farm animals to promote faster growth is being phased out in countries around the world to protect the public's health. Given the lack of demonstrable benefits, the U.S. meat industry should heed the call of the U.S. public health community and global authorities to follow this lead.

The key to stopping non-therapeutic use of antibiotics as well as reducing the need for therapeutic doses is to consider agricultural models that promote wellness. What we need to do is encourage farming systems in which we are actively managing animals so they can develop strong natural immune systems – a concept sometimes called "positive health." We should not raise animals in an environment of stress that challenges the animal's capability to fight a pathogen without the use of low dose antibiotics.

Research shows that animals that are under stress have reduced immunity. And, if animals are kept on farms where they are not overcrowded, where they have access to pasture and space to move around, where they are fed a diet that matches their natural needs, and where they are managed to promote health and well-being, then the levels of stress and the incidence of disease – and the need for antibiotics – is much, much lower. Speaking from my personal experience I cannot recall the last time I had to use therapeutic antibiotics on an animal from our farm. It is that simple.

The solution lies in looking at the causes of antibiotic-resistant infections – including intensive farming that relies on excessive amounts of low-dose antibiotics – and putting a stop to the continued non-therapeutic use of these vital medicines on which these farming systems are so dependent. Antibiotics themselves are not the problem. The irresponsible use of antibiotics is the problem. And, it's not the farmers that are at fault; it is the farming systems which result in the need for indiscriminate antibiotic use.

A new model of food production is the solution. It is time governments truly invest in the future and put money into sustainable systems that are better for the environment, better for the animals, better for the farmers and so much better for our children. We can be sure of how agribusiness will react and move to produce more industry-funded studies to protect their model and profit. Yet, it is time to apply our efforts as a society to the concept of agroecology. Agroecology provides an interdisciplinary framework with which to study the activity of agriculture. Yet, in this framework agriculture is not an isolated entity but is a part of ecology of contexts. A better way can be found that is sustainable.