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Video package available at: <https://vimeo.com/304426663/a36c7c2372>

Photo available at: <https://www.dropbox.com/s/6w4a35x9mbmsdsz/Laura%20Kahn.jpg?dl=0>

Note: This is the eighth of an eight-part series from National Institute for Animal Agriculture (NIAA), with leadership and technical support from Merck Animal Health. The One Health series explores antimicrobial resistance and the collaborative efforts between ranchers, and animal health and human health experts to explore the issue.

One Health Series:

The Politics of Antimicrobial Resistance

Princeton author says its time for physicians and veterinarians to join forces.

In 2001, Dr. Laura Kahn was a student at Princeton University, pursuing a master's degree in public policy. Then, Sept. 11 changed her career.

Kahn embarked on a study that looked at how the government responded to biological threats. Her work revealed a communications void.

“The gist of my findings was that physicians and veterinarians rarely, if ever, talk to each other and that departments of health and agriculture rarely, if ever, talk to each other. Yet, the vast majority of these diseases, these microbes, whether they are emerging diseases or agents of bioterrorism, they are zoonotic, affecting animals and people,” she says.

Kahn was intrigued. How could such silos exist when public health was at stake?

A Texas veterinarian later suggested she look at the same communications gap regarding antimicrobial resistance — and why so much blame in medical literature pointed toward agriculture.

“That was interesting to me. That was a subject that I had not been aware of nor had been paying much attention to. I decided to delve into it and after five years of pouring over government data — both here and in Europe and around the world — that was what prompted me to write the book, *One Health and the Politics of Antimicrobial Resistance*,” Kahn says. “The results were quite surprising. They were not what I was expecting.”

A physician and research scholar, Kahn did painstaking research that included all facets of antibiotic resistance, from human, animal and environmental relationships to international policies.

She found complex factors contributing to resistance. But attempts to reduce antibiotics use had been relatively narrow in scope, with human and animal medicine operating independently.

“I think people need to realize that, yes, antibiotics are the foundation of modern medicine. Without safe and effective antibiotics, the practice of modern medicine basically collapses. At the same time, whereas antibiotics are the foundation of medicine, agriculture and the food security it provides is the foundation of civilization itself.”

The struggle is finding balance between food security and effective medicine.

“Here in the US, we’ve been very fortunate that we have a plethora of meat. We spend less here in this country than any other country on the planet. According to USDA data, we spend less than 10% of our income on food. But there are those in public health that want to eliminate that option of meat being raised conventionally. So, then the question is, ‘What are the poor going to eat?’” Kahn explains. “This is a very political issue – food security, particularly, food security of animal proteins.”

In Sweden, for example, stringent regulations of antibiotics use in livestock contributed to rising domestic meat prices compared to cheaper imported meat, Kahn writes.

In Europe, whole genome sequencing suggests that a bacteria known as vancomycin-resistant *Enterococcus faecium* (VRE) in human patients might have come from pet dogs rather than livestock, as initially suggested.

Kahn says this example illustrates that we must collaborate and use better tools — like whole genome sequencing — if we are to fully understand the emergence and spread of resistant bacteria.

“We need to develop rapid diagnostics, antibiotic alternatives, particularly phage therapy. We need state-of-the-art sanitation systems around the world, particularly when you’ve got megacities of millions of people living together,” she notes. “So, there’s a lot of things that we can do, including the surveillance of pets and understanding our pet’s microbiomes.”

Kahn says most veterinarians are embracing a One Health approach to addressing antimicrobial resistance, while interest from the medical community lags. That’s slowly starting to change, she says.

“Antimicrobial resistance is a very complicated issue. Pointing fingers at agriculture or at medicine as the culprits is not helpful,” she says. “Everybody wants to be part of the solution, and we all need to work together, looking at humans, animals and the environment if we want to adequately address antimicrobial resistance.”

Learn more about antibiotic stewardship or the National Institute for Animal Agriculture (NIAA) at animalagriculture.org. You can also find a link to Dr. Kahn’s book on Amazon.

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About the One Health series:

This series of video- and print-ready resources is funded by Merck Animal Health and brought to you by the National Institute for Animal Agriculture (NIAA), which works with industry producers, leaders and others to address issues concerning animal agriculture. This is an eight-part series that explores NIAA’s ongoing One Health initiative to collaboratively address antimicrobial resistance (AMR) in the animal and human health sectors.

About NIAA:

The National Institute for Animal Agriculture (NIAA) was established in 2000 to provide a forum to facilitate and engage industry leaders and organizations to derive solutions on the most current issues in animal agriculture. Its members include producers, veterinarians, scientists, and government and allied industry representatives.

NIAA is dedicated to programs that work toward the eradication of diseases that pose a risk to the health of animals, wildlife and humans. It also promotes a safe and wholesome food supply and best practices for animal health and well-being as well as environmental stewardship. NIAA issue initiatives encompass the entire animal agriculture field including cattle, sheep, swine, avian, equine and aquaculture industries. More information is available at animalagriculture.org.