Episode: *Ethics Talk: Who's "Health" Does One Health Protect?*

Guest: Joost van Herten, PhD
Host: Tim Hoff
Transcript by: Cheryl Green

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[00:00:02] TIM HOFF: How do we respond to health threats in ways that are attentive to the interdependence of humans, animals, and their environments? It's clear that the health of humans and the health of animals and the health of their environments influence and depend on each other. If a person lives in an environment with high levels of air pollution, their risk of illnesses like emphysema are significantly increased. Diseases that infect animal populations can throw off the delicate balance among different species in complex ecosystems.

The One Health model attempts to unify responses to health risks and health threats in these three domains, human, animal, and environmental, in order to optimize and balance health. By recognizing connections among these domains, One Health approaches can motivate disease control, prevention, detection, and, when necessary, global responses. These approaches succeed in many cases in helping organizations, governments, and health professionals organize and respond to emerging health threats. [mellow theme music] But there are good reasons to question the assumptions behind One Health. To begin with, what do we even mean when we say "health?"

Welcome to *Ethics Talk* from the *American Medical Association Journal of Ethics*. I'm your host, Tim Hoff. On this episode, we'll interrogate the purpose and limits of the One Health approach to health threats.

So, the question before us is, what do we even mean by "health?" The One Health model aims to promote the health of humans, animals, and the environment. But doesn't a healthy human differ in some pretty important ways from a healthy animal or from a healthy environment? Even within single categories, definitions of health can be pretty hard to pin down. Is human health simply a lack of disease, or should a definition of human health have the conceptual apparatus to account for human flourishing, not just an absence of disease? Bacteria that are natural parts of some ecosystems can have debilitating effects on human and animal health, but surely it doesn't really make sense to say that those ecosystems are unhealthy just because of the presence of these bacteria. The criteria we use to define health and compare different conceptions of health help us interrogate just exactly what a One Health approach to health offers and what it doesn't.

[00:02:26] DR JOOST VAN HERTEN: So, if we want to achieve optimal health for human, animals, and the environment, we should make clear what we mean with health.

HOFF: That was Dr Joost van Herten, suggesting that a unified definition of health is necessary for the aims of One Health. But even if we had a definition of health that was relevant to humans, animals, and the environment, the aim of simultaneously promoting human, animal, and environmental health often leads to conflict. When an otherwise healthy population of bats, for example, are culled to prevent the spread of Marburg virus among humans, are we really considering the health of animals and the environment? Or is that a case in which human health takes precedence? If so, what should be the nature and scope of humans' obligations to

question conceptions of health that are anthropocentric and maybe hyper-focused on individuals of a human species rather than on communities of diverse species.

This lack of normative clarity is at least partially intentional. By avoiding too much specificity in its approach, the One Health model acts as what sociologists call a “boundary object,” a concept used by members of different groups and which has different functions in each community, but that’s similar enough to serve as a focus for exchange. The One Health model as a boundary object might be unable to tell you exactly what you should do, but it can at least get all stakeholders having the same conversation.

Today’s guest, Dr Joost van Herten, is here to discuss some potential solutions to competing definitions of health and how to resolve conflicts of interest between human, animal, and environmental health when they’re identified within a One Health model. Dr van Herten is a senior policy officer at the Royal Veterinary Association of the Netherlands. Dr Van Herten, thank you so much for being on the podcast.

VAN HERTEN: Thank you for having me. I’m honored. [music fades]

[00:04:23] HOFF: One Health has merits and drawbacks as an approach to balanced management of human, animal, and environmental health. And as we just discussed, a drawback is that it does not provide moral guidance. But as a boundary object, some might argue that One Health shouldn’t attempt to provide ethical guidance at all, but instead serve as a point for illuminating common interests among stakeholders. But why could it be helpful for stakeholders to look to One Health as a source of normative authority, especially when stakeholders must respond to zoonotic disease outbreaks?

VAN HERTEN: Yeah, thank you for that question. I think the advantage of regarding One Health as a boundary object is that flexibility in interpretation. It facilitates cooperation and makes the concept applicable for multiple purposes. However, this ambiguity about One Health, and hence about One Health strategies in zoonotic disease control should be shaped, contributes to the complexity in case of value conflicts. In my opinion, zoonotic disease control is not morally neutral. It can lead to value conflicts and moral dilemmas, and not only between human-centered values as public health and economic interests of the livestock industry, but also, for instance, public health and animal welfare can be in conflict in the case of culling of healthy animals to combat a zoonotic disease outbreak.

So, if it’s not clear beforehand what the normative starting points of a One Health approach are, different parts can disagree about the expectations and the result for the health of humans, animals, and the environment. Well, this can even hinder a paradigm shift in disease policies and can tolerate a situation where health professionals keep practicing within the dominant technical biomedical framework, without converting to the more holistic One Health perspective. In my view, further conceptual analysis of One Health is therefore needed and necessary to transcend the level of a mere collaboration tool. When the concept of One Health is elaborated, as I proposed, then I believe that it can create opportunities to actually contribute to health of all. And if we do not do that, then I think One Health is just another label for protecting the public, which is human health.

[00:06:44] HOFF: Mm, right. Yeah. It would seem that One Health is sort of a misnomer because there’s not a single definition of health that’s relevant to all stakeholders. For example, we conceive of human health differently than we do wild animal health or domesticated animal

health or environmental health, obviously. Can you introduce our listeners to some of these different definitions of health and help identify where they might conflict?

VAN HERTEN: Yes, indeed. I think we need to consider the concept of health, because if we define our ideas about health more specifically, this gives us guidance in determining what we strive for in a One Health approach. So, if we want to achieve optimal health for human, animals, and the environment, we should make clear what we mean with health in the sense. So, an appropriate concept of health to be used within a One Health context I think should fulfill at least two requirements. One, it should be applicable to humans as well as animals and ecosystems. And two, it should be supportive to the idea of health of the system as a whole. So, if you look at human medicine, for instance, then the concept of health, it has evolved over time.

In 1946, the World Health Organization defined health as a complete state of physical, mental, and social well-being, and not merely the absence of disease or infirmity. Later, Boorse, for instance, he explained health as "a condition of statistically normal biological functioning," and therefore, again, as absence of disease. More recently, we see that focus on definitions that see health as instrumental to achieve other goals in life. And finally, like Huber, Machteld Huber, she defined health for humans as "the ability to adapt and self-manage in the face of social, physical, and emotional challenges."

[00:08:42] So, there is quite some literature available on human health, but if you look at scientific debate about the concept of animal health, it's not so extensive. In veterinary medicine, health is commonly interpreted as, in Boorse's tradition, more like absence of disease systems or as a normality in biological functioning. And even more, in veterinary medicine or in animal health, some definitions even include productivity as a parameter of animal health. But paradoxically, animals that have strongly been selected for high productivity seem to have even more risk of behavior and physiological and even neurological problems. So, selecting animals for high productivity may be counterproductive if you look at health.

And then if you stretch the concept of health to ecosystem health then, we see that health is often more instrumentally defined, like, for instance, an indicator for the deliverance of ecosystem services like clean drinking water or fertile soil, all for humans, those. So, those definitions for ecosystem health are often strictly anthropocentric. So, I find that none of these definitions are actually fulfilling the function it should within the One Health concept.

[00:10:29] HOFF: Can you clarify a bit on where conflict between these definitions might arise? It sounds like when we consider, for example, the health of domestic livestock, we consider productivity as part of their health, even though it might conflict with their actual wellbeing, as you're saying, that perhaps it makes them more prone to certain diseases or behavioral issues.

VAN HERTEN: Exactly.

HOFF: What kind of conflicts might arise between, let's say, human health and environmental health that might be difficult to identify because of, like you suggest, the tendency to define the health of the environment anthropocentrically? That is to define it in a way that privileges human interaction with and benefit from the environment as of primary importance.

VAN HERTEN: Yeah. Well, in my opinion, such a definition cannot function well within the One Health concept because it does not include health of ecosystems there, so it's not workable for me. And so, I would exclude those definitions. And to give you an example, some definitions of health, they direct that absence of disease. And this, for instance, is very difficult to conceive

within ecosystems because pathogens like bacteria or viruses, they are all part of healthy ecosystems. So, absence of diseases is also not a good definition, I think, if we talk about One Health.

[00:11:59] And on the other hand, maybe if you look at the more recent human definitions of health which talk about self-managing in the face of social, physical, and also emotional challenges, well, I think that is a little bit too far stretched for if you want to apply that to ecosystems. Because as far as we know, ecosystems, they don't have the capacity to feel pain or pleasure, so they don't have a consciousness, ecosystems. So, that makes it, it makes it difficult to apply those kind of health definitions within a One Health setting.

[00:12:43] HOFF: So, with all of these conflicting definitions flying around, how should we draw upon the concept of resilience, as outlined in the article mentioned earlier, to help order our thinking about how we should define health for humans, animals, and environments?

VAN HERTEN: Yeah, well, resilience, I think a good starting point, if you want to look for a definition that is applicable to all the three parts of the One Health concept, then maybe it is to strive for something that drives towards a state of dynamic equilibrium. So, a concept like resilience, for instance—which is defined as the capacity or the ability of an individual or a system to react to external force and to maintain or return into a state of equilibrium—this idea of resilience, it can be categorized within the theories of health as some kind of a balance. And so, I think that in this sense it is applicable as a measurable criterion for health of all components of our ecosystem, like soil, plants, animals, and humans, so it's also relevant for the ecosystem as a whole. So, if I compare that to the two criteria I earlier formulated, then I think resilience is a good candidate to use in One Health strategies or within the One Health concept.

[00:14:28] The way I look at resilience is that resilience gives us also a common goal for what to strive for if we are thinking in the terms of One Health strategies. Because resilience is a concept that can be applied to humans, animals, and ecosystems, it can connect the different perspectives of human health professionals, veterinarians, and ecologists. So, there's another thing about resilience is that it also gives us the opportunity to make a shift from a more reactive approach to zoonotic disease control to a more preventive approach. Because if you look at, if resilience is what we strive for, and certainly resilience in animals and in ecosystems, if you consider those as a prerequisite for human health, then you know what to do, what you want to achieve if you look at animal health or ecosystem health. So, we should promote, for instance, food systems to be more resilient. So, this is maybe something I want to add to the function of resilience within the One Health concept.

[00:15:57] HOFF: So, the broader conception of health that we gain by drawing upon this concept of resilience still leaves us to navigate some potential conflict among competing ethical values relevant to human, animal, and environmental health. In your article, you suggest two-factor egalitarianism as a source of normative authority for resolving these conflicts. So, can you walk us through how this two-factor egalitarianism would work to help resolve, say, competing stakeholders' responses to zoonotic disease outbreak?

VAN HERTEN: I use van de Veer, who is a utilitarian by the way, because he suggested that in promoting overall utility, a difference should be made in the level of importance of interests of humans and animals. So, in his theory, peripheral interests of humans do not prevail over basic interests of animals. So, a basic interest is for an interest in life or an interest in not to suffer. And a peripheral interest maybe for humans could be maybe eating of meat, for instance. This

could be in some, in Western societies, for instance, I think this could be maybe a peripheral interest. Or maybe wearing fur coats, coats made of fur. I think the question is if this is a basic interest because you can always, there are other materials that protect us against foul weather just as good as fur from animals. So, he makes a difference between those interests. And he says that if there's a conflict between basic interests, for instance, interest in life, then the interests of humans trump those of animals. And he justifies that by arguing that the interests of beings with a more complex psychological capacity, they deserve a greater weight than those with lesser capacities. This implies that the harm that is caused by dying, for instance, is greater in general for humans than it is for animals.

[00:18:09] So, if you apply this to zoonotic disease control, this implies that culling healthy animals, for instance, is only justified when basic interests of humans, like the incidence of life, of not to severely suffer, are at stake. So, it may be questionable whether this principle will be applicable to all moral dilemmas in zoonotic disease control. Besides that, it is not entirely clear how environmental interests should be weighed within van der Veer's methods. However, I think that van der Veer's principle can be helpful as a starting point to establish that basic animal and environmental interests cannot be overridden by fearful human interests. Certainly in a pluralistic society, there will be different opinions about whether, what we should regard as peripheral or basic, and it can be debated, as I said earlier, if eating meat should be considered a peripheral or a basic interest.

Nevertheless, in many situations it will be possible to reach consensus by considering whether or not human interests are strong enough to violate basic animal or environmental interests. So, for instance, basic animal interests can only be overridden if there is no other reasonable alternative to protect human health, like, for instance, vaccination. So, of course, the costs of the effectiveness of possible alternatives should be taken into account as well. However, economic reasons alone cannot justify, in my opinion, culling as a disease control measure.

[00:19:59] HOFF: To wrap up, what should health professions students and trainees, perhaps especially veterinary students, know about their roles in addressing conflicts that arise during zoonotic disease control?

VAN HERTEN: For veterinarians and veterinary students, I think it's important to realize that food production or animal production is, in fact, a driver for zoonotic disease outbreaks all over the world. And if we take One Health seriously, I believe that the best way to protect human health is to ensure animal and ecosystem health. And to do that in order to prevent zoonotic disease outbreak, we should focus more on our food systems and to make them less vulnerable. And I mean, I think that veterinarians have an important role there because they can start or initiate the societal debates about how we produce our food, how we use animals. And I think they should emphasize always that animal health should be at the center of any kind of food system, so it's animal health first and then productivity. And I think if veterinarians express that, then they can help changing food systems all over the world. [mellow theme music returns] And maybe that has an important role, I think, for the veterinary profession.

[00:21:37] HOFF: Dr Van Herten, thank you so much for your time on the podcast today and for sharing your expertise with us.

VAN HERTEN: You're welcome. It was a pleasure.

HOFF: That's all for this month's episode of *Ethics Talk*. Thanks to Dr van Herten for joining us. Music was by the Blue Dot Sessions. To read the full issue on *Health Ecology and Disease*

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