



One Health: Connecting Humans, Animals and the Environment Video Transcript

Quantitative and qualitative methods

[Jakob Zinsstag]: When professionals of human and animal health and from other disciplines work together, they can create an added value to their work. This cooperation is what we call a One Health approach. It includes assessable, quantitative, and qualitative elements. Clearly, One Health is based on a mixed methods approach and relates to many other disciplines outside the health sector. But the first step is always the same. We need to understand how humans and animals interact in a given situation. We need to understand the animal-human interface. A straightforward way of relating human and animal health is by comparative cross-sectional human and animal health studies. This was done on human and animal brucellosis in Kyrgyzstan.

In this study, we sampled almost 2,000 humans, sheep, goat, and cattle and related the human seroprevalence to the livestock seroprevalence. In this way, we could show that human brucellosis seroprevalence depends mostly on sheep and less on goat and cattle. By isolating brucella strains, we could confirm that sheep are likely the most important host of animal brucellosis in Kyrgyzstan.

Next to interdisciplinary approaches, a very important qualitative elemental of One Health is its engagement with society. Stakeholders are involved in participatory processes not only to collect information but as active members of the research team. In this way, non-academic and academic knowledge is joined and interconnected. Research agendas are defined together, and interventions are validated by authorities and communities.

If we want to address non-linear processes that occur, for example, if you want to know the effect of mass vaccination of animals on human health, we need mathematical models. And if you want to know the comparative economics of different interventions, we apply cross-sector economic methods, like the one by Roth and collaborators on brucellosis control in Mongolia. These methods include benefit-cost analysis and cost-effectiveness studies.

But this quantitative work needs to be complemented with in-depth social and cultural studies. These may consist of knowledge, attitude, and practise research, as well as methods coming from cultural epidemiology. In this picture, you see a focus group discussion addressing the health care of pastoralists. Altogether, one health methods are an exciting mix of qualitative and quantitative approaches, each one contributing to a better understanding and knowledge of human and animal health.