Highlight 2: Zoonotic and Emerging Diseases: A Crossroads in Human Health

Increasing livestock production can bring considerable health benefits to people in low- and middle-income countries through greater availability and affordability of nutritious, animal-sourced foods. However, livestock can also be the source of zoonotic diseases—diseases that move from animals to humans. Minimizing these risks often requires collaboration between veterinary and public health services.

Because of their contact with animals throughout the slaughtering process, slaughterhouse workers are at high risk of contracting zoonotic diseases. Through A4NH’s flagship research program on Improving Human Health, researchers with the International Livestock Research Institute and the University of Liverpool have looked closely at slaughterhouses in western Kenya to better understand risk factors and disease prevalence. They interviewed slaughterhouse workers and managers about infrastructure, hygiene practices, protective measures, and workers’ recent health history and knowledge about disease transmission to identify possible areas of intervention to reduce the risk factors these workers face.

Because the prevalence of Rift Valley fever (RVF), a viral disease that occurs in cattle, is low in the general population in western Kenya, researchers had a unique opportunity to compare pathogen levels in other communities with those of slaughterhouse workers. This comparison allows them to better understand the risks slaughterhouse workers are exposed to and identify possible interventions to limit the spread of the disease. The study found that slaughterhouse workers are at a higher risk for contracting RVF—seroprevalence rates are 2.5 percent among the slaughterhouse workers versus less than 1 percent for the general population. The researchers recommended educating workers about disease risks and transmission prevention, improving disease surveillance in low-risk areas during outbreaks, and inspecting animals before slaughter to identify and remove those that are diseased to mitigate these risks.

The data collected have helped researchers to advise county-level officials on exposure factors and to promote and engage in dialogues in Africa and Europe about how best to improve slaughterhouse conditions, including a workshop with European food safety and epidemiology experts to compile options for improving slaughterhouses.

Researchers are also working to identify expedient ways to gather data on zoonotic diseases more broadly. In 2017, they introduced meat inspectors at several slaughterhouses to an online, phone-based data-collection system. These accessible devices allow the inspectors to record information immediately and provide daily, in-depth updates, including records and photos, which generate essential data in real time.

Building on this project, the researchers are training others in how to use this type of surveillance. This training enables them not only to share the benefits of the collection method, but also to co-learn (or jointly learn) ways to improve it. In doing so, they are building a community of practitioners who can draw on one another’s experiences and collaborate in the future.