

PLANETARY HEALTH, ONE HEALTH, AND ENVIRONMENTAL SUSTAINABILITY

Animal Injury, Zoonotic Disease, and Other Occupational Hazards of Rural Livestock Keepers in Uganda

J. Meisner¹, K. Curtis², P. Rabinowitz³; ¹University of Washington, Seattle, Washington, USA, ²Veterinarians Without Borders, Davis, USA, ³University of Washington, Seattle, USA

Background: Worldwide, 70% of rural poor rely on livestock for income, nutrition, and draught power. Livestock farming in Africa is in a state of transition from traditional management systems towards intensification, calling into question the future of traditional systems. To inform this debate, we conducted a survey in Moyo District, Uganda, to describe occupational practices and hazards of agropastoralist livestock keepers.

Methods: Surveys were administered at the household-level in July and August, 2016, completed by the head of household (N=49). Cross-sectional data were used to generate descriptive statistics for livestock-associated practices and exposures. Logistic regression was used to generate odds ratios and Wald-type 95% confidence intervals for risk factors for injury, defined as any animal-related injury in the household within the past year. Risk factors studied were total number of male animals; number of male cattle, sheep/goats, and pigs; percent of herd comprised of males; herd size; and castration practices.

Findings: Adult men perform most livestock-associated tasks; women and adolescents prepare meat, milk cattle, care for poultry, and dispose of waste. While 63% of households use professional veterinary services and most (57.2%) are familiar with zoonoses, 53.2% do not believe sick animals may look healthy. Over 85% of respondents routinely wash their hands, while only 64.6% use soap. Fifty-seven percent commonly use PPE, however none use gloves or face protection. Most respondents contact animal feces “often”, and contact urine and blood “sometimes.” Twelve percent report a needlestick injury while treating an animal, and 45% report at least one animal injury. No significant association was found between risk factors studied and injury, after adjustment for confounders.

Interpretation: Occupational risks of females and adolescents are distinct from those of men. Contact with potentially infectious material is common, and handwashing without soap or glove use is likely inadequate to prevent zoonotic transmission. Agropastoralists are familiar with zoonoses, however subclinical infections may be missed. While no significant risk factors were identified for animal injury, both animal and needlestick injury are common. As livestock agriculture intensifies, these hazards will become more pronounced; interventions are needed to improve the occupational health of rural livestock keepers in Uganda.

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Community Development: A Holistic Approach in Malawi

J. Rogers¹, M. Mizwa², J. Wilkinson², D. McGuire³, A. Gibson⁴; ¹Child Legacy International, Lilongwe, Malawi, ²Baylor College of Medicine, Houston, USA, ³Child Legacy International, Houston, USA, ⁴Texas Children's Hospital, Houston, TX, USA

Program/Project Purpose: The U.S. non-governmental organization (US-NGO) is an entrepreneurial, faith-based organization working in Malawi since 2007. Malawi is among the world's least developed countries with a GDP rank of 146:196 and high maternal mortality rates according to the CIA. The US-NGO is driven by the opportunity it sees to help millions of rural Africans move from “dependence” to “independence.”

This community development program works from a 300 acre campus in Malawi, fully reliant on renewable energy, to provide approximately 30,000 rural Malawians in the catchment area with skills and opportunities to improve health, education and well-being.

Structure/Method/Design: The US-NGO is focused on development of holistic solutions that demonstrate the causes of generational poverty can be overcome, based on five integrated programs and close collaboration with community, government, local and foreign universities, medical institutions, businesses and other faith-based organizations.

The five programs are: *Reignite Hope*, redefining “possible” with skills people can see and utilize; *Water, Energy and Environment*, providing clean water, well repair, renewable energy and environmental best practices; *Healthcare*, providing care and treatment at on-site and off-site clinics focused on maternal and child health; *Community with a Destiny*, training locals in comprehensive agriculture and aquaculture resulting in marketable skills, and a sustainable food source for the community; and *Research, Education and Training* with a focus on innovation in the provision of services.

Outcome & Evaluation: Through the work carried out in Malawi, the US-NGO has created a self-sustaining, off-grid operation that allows it to serve a sprawling rural area. Over 3,500 patients per month receive care and treatment in the on-site clinic and over 5,000,000 people have access to clean water through well repair programs. Sustainable agricultural provides employment to over 160 people from surrounding villages and equips them to bring back the methods learned from their vocation to enrich the harvests in their own communities.

Going Forward: Program challenges include ensuring sustainable funding and partnerships that can maintain and expand existing services provided by the US-NGO, natural events such as drought, human resource gaps, maintenance of facilities and program operations.

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