

Epidemiology of bacterial infections in livestock and their human keepers in Western Kenya

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We report on the results of work on three bacterial zoonoses arising as part of a large project dealing with zoonotic infections amongst livestock and the farmers who keep them. Domestic livestock are an important source of zoonotic infections to humans, particularly in rural parts of Africa. Understanding the interactions between people and their domestic animals, and the transmission of zoonoses between them, is of vital importance in creating the evidence-based disease control policies that are required to protect both human and animal health. The wider project addresses the impact of co-factors (a condition that influences the effects of another condition) on the epidemiology of, and burden imposed by, these diseases. We describe the results of an analysis of three bacterial infections of major public health significance (q-fever, brucellosis and tuberculosis), with a focus on infection in both domestic cattle and humans. In particular, we explore the spatial distribution of these infections in Western Kenya, and explore patterns of infection at the household level in both species (n=450 households). In addition, using multivariate methods, we examine non-zoonotic co-factors as explanatory variables for the individual pathogens, and quantify the risk of co-infections with multiple bacterial zoonoses. We use our wealth of ancillary risk factor data to explain the patterns observed.