Co-infections: biological patterns in multiple-infected hosts

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We report on the results of work on zoonotic and non-zoonotic pathogen co-infections arising as part of a large project dealing with zoonotic diseases amongst livestock, livestock keepers and non livestock keepers in a study site in Western Kenya. Domestic livestock are an important source of zoonotic infections to humans, particularly in rural parts of Africa. Understanding the relative risks of livestock-keeping in such systems, as well as the role of co-infection in driving disease burden, matter in the formulation of evidence-based public health policy. We explore the spatial distribution of co-infections between multiple zoonotic and non-zoonotic infections, in both humans and cattle, and examine the impact of co-infection on health status, measured by diverse clinical indicators, also in cattle and human hosts. For humans, we test whether livestock keeping, and whether the infection status of the livestock kept, explains infection status in humans. These results have an important bearing on the design of interventions to control the impacts of zoonotic diseases in endemic areas.