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Leptospirosis and Q fever in slaughterhouse workers in western Kenya

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Purpose:
Zoonotic diseases are underreported and often misdiagnosed; thus the true prevalence of these pathogens in Kenya and elsewhere is unknown. Slaughterhouse workers are considered a high risk group for exposure to zoonoses due to their intimate contact with animals and animal products. This study examined slaughterhouse workers in Kenya for zoonotic diseases, identified risk factors for exposure and compared rates of exposure to that of the wider community.
Methods:
The study was conducted in rural western Kenya between February and October 2012. In total 142 slaughterhouses and 738 workers participated. A comprehensive questionnaire was administered to participants. Blood samples were tested by ELISA for exposure to leptospirosis and Q fever. Risk factor analyses for zoonotic disease exposure in slaughterhouse workers were conducted using multivariable logistic regression.
Results:
The unadjusted seroprevalence of leptospirosis in slaughterhouse workers in western Kenya was 13.4% (CI95 11.1-16.1) and Q fever was 4.5% (CI95 3.2-6.2). This is compared to the unadjusted seroprevalence of leptospirosis in the community of 6.5% (CI95 5.1-8.3) and Q fever 1.5% (CI95 0.9-2.5). The odds ratio for leptospirosis seropositivity in slaughterhouse workers was 2.3 (CI95 1.6-3.4) and for Q fever was 1.9 (CI95 1.0-3.8) times that of the community.
Risk factors associated with exposure to leptospirosis in slaughterhouse workers included: having wounds (OR 2.7; CI95 1.4-5.3); smoking at work (OR 1.8; CI95 1.1-3.0); eating at work (OR 2.1; CI95 1.2-3.6); and cleaning the intestines (OR 3.8; CI95 1.8-8.2). The risk factors significantly associated with exposure to Q fever included: being intoxicated at work (OR 3.2; CI95 1.1-9.4).
Conclusions:
This is the first report of these zoonoses in slaughterhouse workers in Kenya. The study quantified the rates of exposure in slaughterhouse workers compared to the community. Potential risk factors for zoonotic disease exposure in slaughterhouses were identified.
Relevance:
Information will be used to recommend targeted training for slaughterhouse workers, managers and inspectors regarding the risks and methods to reduce disease transmission.