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## Identification of risk factors for human brucellosis in smallholder farms in Pakistan

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Brucellosis is considered by the Food and Agriculture Organization, the World Health Organization and the OIE as one of the most widespread zoonoses in the world, and is still endemic in many developing countries including Pakistan. In Pakistan brucellosis is a neglected disease and is still prevalent at a very high rate due to lack of public awareness and preventive measures.

The aim of this study was to investigate current practice in terms of herd management and household practices that may act as risk factors for brucellosis transmission from cattle to humans in smallholder dairy farms. A cross-sectional study among smallholder farms (n=240) was conducted in the four districts of Punjab province. A questionnaire to measure the risk factors presence was designed and used during face-to-face interviews. A combination of purposive and random sampling was used to select the participant smallholder farms.

Regarding potential risk factors, results from the questionnaire to date indicate that 14% of farms had cattle abortions in the last year, with 9% being in the last trimester, almost a third of farmers reported retained foetal membranes, and 17% reported having animals on the farm with a history of retained placenta. In relation to herd management practices, most participants reported calving space being shared with other animals, half reported introducing new animals and over 60% slaughtering animals at the farm. Only 35% of farmers properly dispose placental membranes by burring, with most disposing them in dung piles or feeding them to other animals. In addition animals are being sampled to estimate the prevalence and result are in processing.

To assess zoonoses the following household practices were addressed: farmers who think they can get disease from animals (32%), farmer families using raw milk (53%) and its products (63%), living in shared place with animals (43%) and farmers that do not cover hand cuts during contact with animals (80%). In conclusion, results from this study suggest there is a need to estimate the true prevalence of disease in the area and educate the farmer via participatory epidemiology about the risky farm practices and their preventive measures.