

Education as a mechanism to reduce spread of brucellosis among at-risk populations in Uzbekistan

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Objective

To outline the mechanism of a pilot educational brucellosis prevention program among selected high-risk groups in an endemic region of Uzbekistan.

Introduction

One goal of the Biological Threat Reduction Program (BTRP) of the US Defense Threat Reduction Agency (DTRA) is the enhancement of surveillance of especially dangerous pathogens of both humans and animals within countries of the former Soviet Union. One of the diseases of interest to the program is brucellosis, which is a life-threatening condition and constitutes a major health and economic challenge around the world. This is also true for Uzbekistan (UZ), where brucellosis is endemic in a number of regions. In the Samarqand region of UZ, for example, studies have reported a 9.3%, and 3.6% seroprevalence for humans and farm animals, respectively (1). The lack of awareness about brucellosis in at-risk populations, shepherds, veterinarians and people who handle raw milk is believed to significantly contribute to the spread of disease from animals to humans. Here, we suggest mechanisms to evaluate awareness about the disease and the impact of an educational intervention in at-risk groups.

Methods

The intervention and two control groups will include subjects from the at-risk groups in the Samarqand region. In all three groups, the selection of study subjects will be done from non-brucella-related visits to primary care centers by at-risk patients with no previous history of brucella. At-risk subjects within the intervention and first control group will be asked to complete a questionnaire to assess their awareness about brucellosis, specifically about its clinical presentation and risk for exposure in people. At-risk subjects in the second control group will not receive any questionnaire. The educational intervention procedures will consist of briefings to a group of healthcare professionals, delivered through BTRP regular training events, together with printed materials to be explained by the physicians to patients in the intervention group. The briefings and materials will show practical ways of preventing the spread of brucellosis targeted at common practices within the at-risk groups. The seasonality of the disease in endemic regions like Samarqand dictates that the best timing for the intervention program is in the fall (Sept–Dec), before lambing season (Feb–Jun). Our measurable outcome is the number of newly acquired human brucellosis cases among the three study

groups registered after the intervention. Registration of brucellosis cases will follow existing protocols within the Uzbek healthcare system. Additionally, the questionnaire administered to the intervention and one control group will provide an insight of the baseline awareness about the disease. Adequate sample size and analysis of the data will allow comparisons between the three study groups and between strata within the groups, e.g., veterinarians and farmers. The control group not exposed to the questionnaire will allow an assessment of the impact of possible increased awareness as a result of our interventions.

Results

Disease awareness questionnaires, educational materials and further details of our study design will be presented at the conference.

The anticipated increase in knowledge about risk practices associated with the transmission of brucellosis from animals in at-risk populations should lead to a reduction in human cases of brucellosis in the intervention group, compared to control groups.

Conclusions

The epidemiology of brucellosis among humans and animals is well-characterized. Preventive measures for the diseases are well known; yet, applying this knowledge in resource-poor countries remains a constant challenge. Having effective health education programs is a vital component in efforts to reduce the disease burden by reducing the animal-to-human transmission rate.

Keywords

Brucellosis; education; brucellosis prevention; brucellosis at-risk population; education effectiveness

Reference

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