

An integrated approach to developing an anthrax-free model area in Bangladesh

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Abstract

An integrated approach was sought to establish an anthrax-free model, where there will be no anthrax in an anthrax-prone area of Bangladesh. The integrated approach included regular vaccination, increased public awareness, rapid confirmation, and prompt disposal, setting up an effective surveillance system, developing an emergency prevention system, enforcing regulations, and enhancing veterinary services' collaboration. Before the research work, a study area reported anthrax in cattle or humans almost every one or two years. The location remains Jamtoil village in Kamarkhanda Upazila of Sirajganj district located between 24°18' and 24°27' north latitudes and amidst 89°35' and 89°42' east longitudes. Numerous interventions that included both social and laboratory work were implemented from 2017 to 2020. After rigorously implementing the study works, it showed that most community members (97.5%) were aware of the nature, occurrence, public health importance, and management of the disease. The risky habits and attitudes of the farmers toward the slaughtering of sick cattle reduced significantly (<85%). Vaccination coverage expanded from 40 to 85%, and the percentage of farmers who can presumptively diagnose anthrax by its notable clinical findings has increased from 30% to 85%. A PCR-based confirmation protocol was applied. Soil samples were collected to examine the pathogenic spores of *Bacillus anthracis*, and researchers developed a map so that the farmers in the area would be more cautious about grazing their cattle. A steering committee was formed with the administration, law enforcement agency, local government, livestock, health department, and political elites. This committee periodically reviewed the progress of research work. At the beginning of the investigation, the score was 18, but after implementing research interventions, it increased to 100 out of 120. The locals set up a slaughterhouse in that region, and people slaughtered their animals after examining their animals by qualified veterinarians. As a result of all these works, the model area has been free of anthrax infection for four years. The research finding concluded that the integrated approach is an efficient, effective, and suitable method to establish an anthrax-free model area where there will be no anthrax outbreak.

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