

Controlling the Mbare Typhoid Outbreak, Harare (2016-2017)

Masunda KPE, Chonzi P, Mukeredzi

City of Harare Health Department, Zimbabwe

Background: Typhoid fever is a systemic bacterial infection caused by *Salmonella enteric* serotypes *S. typhi* and *S. paratyphoid typhi* and it remains a significant health challenge in developing countries like Zimbabwe. The City of Harare has had periodic outbreaks of typhoid since 2010, mainly affecting the western suburbs. In October 2016, a typhoid outbreak started in the southern suburb of Harare in Mbare.

Methods: An epidemiological outbreak investigation was instituted and line lists were analysed to describe the outbreak and to determine the source and potential areas for spread. Spot maps were created to plot cases and boreholes. An environmental assessment including lab testing was done to describe the water and sanitation issues in Mbare. Laboratory investigations were done on stool and blood samples to confirm cases and assess antibiotic sensitivity.

Results: As of 1 February, 2017, there have been 207 suspected cases plus 28 confirmed cases and 2 deaths (Case Fatality Rate= 0.9%). Cases in Mbare have been reported since 21 October, 2016. Environmental assessment found broken and blocked sewer lines and a limited supply of piped water with residents relying heavily on borehole water for consumption. Borehole analysis showed that 20 out of the 42 boreholes in Mbare were contaminated with faecal coliforms or *Salmonella* species. The attack rate was higher in males and children <15 years.

Conclusions: This was a common source outbreak due to the breakdown of water and sewage systems and the reduced supply of municipal water. Contamination of borehole water at such a level showed that in the cities reliance should be on piped water system and all efforts should be made to improve the water supply and repair sewer lines to prevent the occurrence of further outbreaks.