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Typhoid Outbreak Investigation in Dzivaresekwa Suburb of Harare City, Zimbabwe, 2011

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BACKGROUND: Typhoid fever is a systemic infection caused by a gram negative bacterium, *Salmonella* Typhi. Harare City reported 1078 cases of suspected typhoid fever cases from October 2011 to January 2010. We initiated an investigation to identify possible source of transmission so as to institute control measures.

METHODS: An unmatched 1:1 case-control study was conducted. A questionnaire was administered to study participants to identify risk factors for contracting typhoid. A case was a resident of Dzivaresekwa who presented with signs and symptoms of typhoid between October and December 2011. Water samples were collected for microbiological analysis.

RESULTS: A total of 115 cases and 115 controls were enrolled. Drinking water from a well [OR= 6.2 95% CI (2.01-18.7)], attending a gathering [OR= 11.3 95% CI (4.3-29.95)], boiling drinking water [OR= 0.21 95% CI (0.06-0.76)] and burst sewer pipe at home [OR= 1.19 95% CI (0.67-2.14)] were factors associated with contracting typhoid. Independent risk factors for contracting typhoid were drinking water from a well [AOR=5.8; 95% CI (1.90-17.78)], and burst sewer pipe at home [AOR=1.20; 95% CI (1.10-2.19)]. Faecal coli forms and *E. coli* were isolated from 8/8 well water samples. Stool, urine and blood specimens were cultured and serotyped for *Salmonella* typhi and 26 cases were confirmed positive. Shigella, Giardia and *E. coli* were also isolated. Ciprofloxacin, X-pen and Rocephin were used for case management. No complications were reported.

CONCLUSIONS: Contaminated water from unprotected water sources was the probable source of the outbreak. Health education campaigns were conducted. Water storing containers and aqua tabs were distributed to 3000 households. Water trucking was conducted, 6 boreholes were drilled and burst sewer pipes were repaired.

KEYWORDS: typhoid, risk factors, Dzivaresekwa, Harare