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### **en Investigation of a typhoid fever epidemic in Moyale Sub-County, Kenya, 2014–2015**

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#### ABSTRACT

**Aim:** Typhoid fever is a vaccine-preventable bacterial disease that causes significant morbidity and mortality throughout Africa. This paper describes an upsurge of typhoid fever cases in Moyale Sub-County (MSC), Kenya, 2014–2015.

**Methods:** We conducted active hospital and health facility surveillance and laboratory and antimicrobial sensitivity testing for all patients presenting with headache, fever, stomach pains, diarrhea, or constipation at five MSC health facilities between December 2014 and January 2015. We also conducted direct observation of the residential areas of the suspected cases to assess potential environmental exposures and transmission mechanisms. Demographic, clinical, and laboratory data were entered into, and descriptive statistics were calculated with, MS Excel.

**Results:** A total of 317 patients were included in the study, with mean age  $24 \pm 8.1$  years, and 51% female. Of the 317 suspect cases, 155 (49%) were positive by Widal antigen reaction test. A total of 188 (59%) specimens were subjected to culture and sensitivity testing, with 71 (38%) culture positive and 54 (76%), 43 (60%), and 33 (46%) sensitive to ceftriaxone, cefuroxime, and ciprofloxacin, respectively. Environmental assessments through direct observations showed that commercial and residential areas had limited (1) clean water sources, (2) latrines, and (3) hygiene stations for street food hawkers and their customers.

**Conclusions:** Typhoid fever is endemic in MSC and causes significant disease across age and sex groups. The local health department should develop policies to (1) assure community access to potable water and hygiene stations and (2) vaccinate specific occupations, such as food and drink handlers, against typhoid.

#### KEYWORDS

*Typhoid epidemic; Kenya; Sanitation; Laboratory*

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