

## **A False Reported Typhoid Outbreak Due to Inadequacies in Typhoid Surveillance**

Joy Kusiima<sup>1</sup>, Daniel Kadobera<sup>1</sup>, Eric Ikoona<sup>2</sup>, Alex R. Ario<sup>1</sup>, Rhoda Wanyenze<sup>1,3</sup>

<sup>1</sup>*Public Health Fellowship Programme – Field Epidemiology Track, Kampala, Uganda;* <sup>2</sup>*Frontline Field Epidemiology Training Program, Kampala, Uganda;* <sup>3</sup>*Makerere University School of Public Health, Kampala, Uganda*

**Background:** The Health Management Information System reported 1549 cases of typhoid fever in 2015 and 1743 in 2016 in Nakaseke District. The Uganda Ministry of Health has provided surveillance case definitions on typhoid fever to districts; however, adherence is unknown. We conducted an investigation to determine whether an outbreak had occurred, and evaluated the adherence to the surveillance guidelines.

**Methods:** We compared the number of typhoid cases reported during January – April 2016 in three health facilities in Nakaseke District and the same time period in 2015. We extracted patient medical records to assess adherence to surveillance guidelines, especially in regard to standard surveillance case definitions, and to identify any cases of perforations. We also examined freshly admitted typhoid in-patients and reviewed laboratory and data collection procedures. We collected blood specimens from 5 freshly diagnosed typhoid patients for culture confirmation.

**Results:** Nakaseke District reported 560 typhoid cases during January to June 2016, compared to 291 reported cases during the same time-period in 2015. Of the admitted patients reviewed, 28% (5/18) met the surveillance case definition. Of the 1025 records reviewed in 2016, 81% (829/1025) of diagnoses were clinical only, and 19% (192/1025) had a positive Widal test as the supporting laboratory evidence. All 5 samples from the freshly diagnosed patients cultured negative for typhoid at the reference laboratory. No cases of perforations were identified in area hospitals during the time periods under review.

**Conclusions:** No evidence supported that a typhoid outbreak had occurred in the district. The increase in the reported typhoid cases was likely due to inadequate use of standard surveillance case definitions and use of unreliable laboratory diagnostic tests. We recommend enforcing the use of surveillance case definitions for typhoid reporting, and developing laboratory capacity for typhoid diagnosis.