

**5 ENTERIC DISEASES**

**a *Salmonella* Typhi cases in South Africa, 2016**

A case series of 19 cases of typhoid fever was reported in the Communiqué, January 2016. As of 12 February 2016, a total of 30 typhoid fever case-patients had been reported in five provinces across the South Africa (Figure 3). Diagnosis was based on the isolation of *Salmonella* Typhi in blood culture (93%, n=28) and stool specimens (7%, n=2).

The ages of these 30 case-patients range from 9 months to 52 years with a median of 11 years (IQR 7 – 30 years). A single case-patient’s age is unknown. Five (5/30; 17%) case-patients are children <5-years-old while nine are adults 20-45 years of age. Females account for 60% (n=18) of cases. Two deaths (8%) have been reported. All case patients were admitted to hospital. The average length of stay was 7.4 days. Amongst the 30 case-patients, 3 epidemiological clusters were identified through collation of data obtained from the case investigation forms as follows:

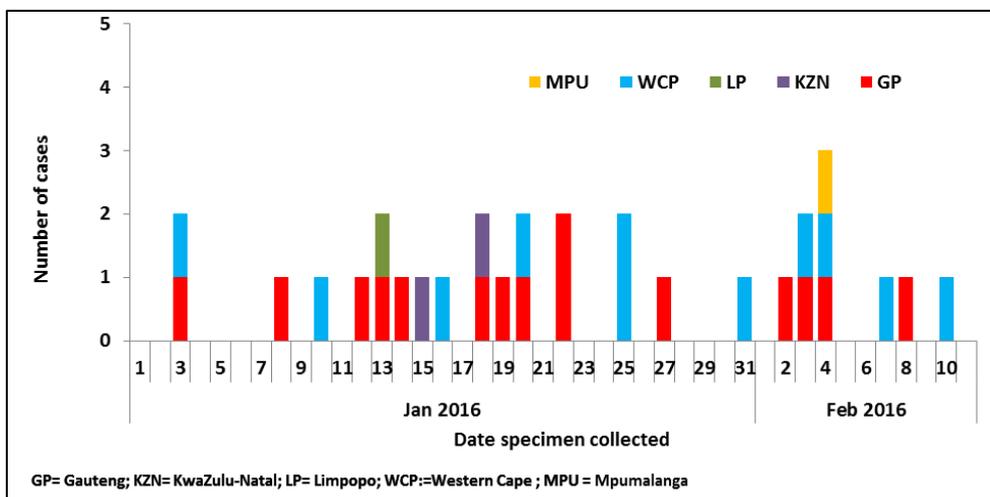
- 1) Two case patients (1 from KwaZulu-Natal Province, 1 from Western Cape Province) were cousins and had travelled together to India in the month prior to becoming ill.
- 2) Two siblings were initially admitted with clinical typhoid fever. Their care-giver was found to have a positive stool culture for typhoid fever, though she was asymptomatic at the time.
- 3) A further two siblings were identified as case-patients. Investigation of the index sibling revealed that his younger brother had a positive stool culture and was asymptomatic at the time. However, the second sibling became symptomatic and presented at hospital with a pyrexial illness and was found to have a positive blood culture for *Salmonella* Typhi before his stool culture isolates were confirmed.

Amongst the 25 case-patients in whom travel history is known, 13 (13/25; 52%) reported a history of travel outside their hometown/city within 1 month before the onset of illness.

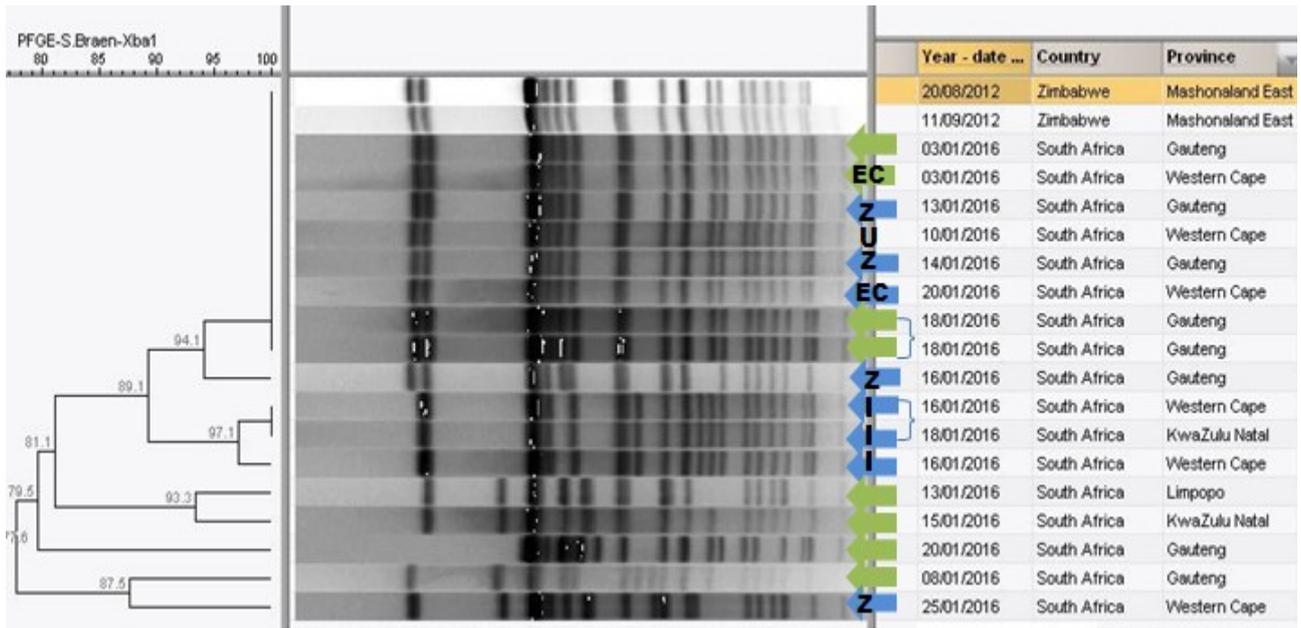
PFGE typing (Figure 4) of 15 isolates identified 9 profiles of which 7 were unique. Eight and 3 isolates respectively shared identical profiles. The eight identical strains shared a common profile with the Zimbabwean 2012 outbreak strain. Of these eight strains, 3 had a travel history (2 to Zimbabwe and 1 to Eastern Cape Province) while 4 had no travel history and the travel history for one isolate was unknown. The three isolates with the second identical PFGE profile were obtained from two patients who were cousins and who had travelled to India over December before becoming ill. Isolates from the other two epidemiological clusters described above are not represented in Figure 4.

The concern by the health care workers, the media, the public and government structures over typhoid fever cases in South Africa and particularly in Gauteng has facilitated an in depth investigation into the epidemiology of typhoid fever in South Africa over January and February of 2016. These investigations have highlighted the need for continuing thorough case management and contact tracing in order to contain further person-to-person spread and prevent contamination of water sources, ongoing surveillance for typhoid fever, the use of more discriminatory molecular epidemiological tools to identify recent transmission events. The absence of typhoid fever cases outside of urban settings requires further investigation.

**Source:** Division of Public Health, Surveillance and Response, Centre for Enteric Diseases, NICD-NHLS ([outbreak@nicd.ac.za](mailto:outbreak@nicd.ac.za))



**Figure 3.** Number of Laboratory-confirmed typhoid fever cases identified in five South African Provinces, 1 January to 12 February 2016



**Figure 4.** Pulsed-field gel electrophoresis patterns showing genetic relatedness of 15 typhoid fever isolates obtained in January 2016. Blue arrows=positive travel history within 30 days preceding isolation of the organism (destination as follows: Z=Zimbabwe, I=India). Green arrows=no positive travel history (travel history of relatives within preceding 30 days: EC=Eastern Cape)