

3 ENTERIC DISEASES

a Typhoid fever in South Africa, 2015-2016

South Africa has a low endemicity for typhoid fever, with an estimated annual incidence rate of 0.1 cases per 100,000 general population. Localised clusters of cases occur in vulnerable populations, such as those living in informal settlements or in crowded conditions. Currently, typhoid fever cases are primarily notified through a laboratory-based notification system to the national reference laboratory, the Centre for Enteric Diseases (CED), NICD. Confirmation of *Salmonella enterica* serotype Typhi (*Salmonella* Typhi) and *Salmonella* Paratyphi sourced from clinical laboratories in South Africa, is performed by the CED, followed by further phenotypic and genotypic characterization of the isolates.

In 2016, 125 cases of *Salmonella* Typhi were reported from multiple provinces in South Africa (Figure 4). Of the 125 cases, 113 viable isolates were received by the CED and confirmed as *Salmonella* Typhi. Antimicrobial susceptibility data suggest that resistance to ciprofloxacin and azithromycin is emerging. In 2016, 12% of isolates were resistant to ciprofloxacin and 0.9% to azithromycin. Molecular subtyping using PFGE analysis is routinely performed on all *Salmonella* Typhi; a database of di-

verse PFGE patterns has been established, which has proved invaluable in relating isolates and monitoring for emergence of new strains and clusters. PFGE analysis has assisted to show importation of typhoid cases from neighbouring countries and overseas countries, and also to demonstrate person-to-person transmission in localised clusters, and help in local outbreak investigations. Going forward, PFGE analysis will be augmented by whole-genome sequencing analysis of selected isolates, as required for investigation of clusters and outbreaks.

As there have been reports of typhoid fever outbreaks in neighbouring countries, all provinces in South Africa are on high alert for identification, notification and reporting of cases of typhoid fever.

Source: Centre for Enteric Diseases, NICD-NHLS; Division of Public Health Surveillance and Response, NICD-NHLS; outbreak@nicd.ac.za

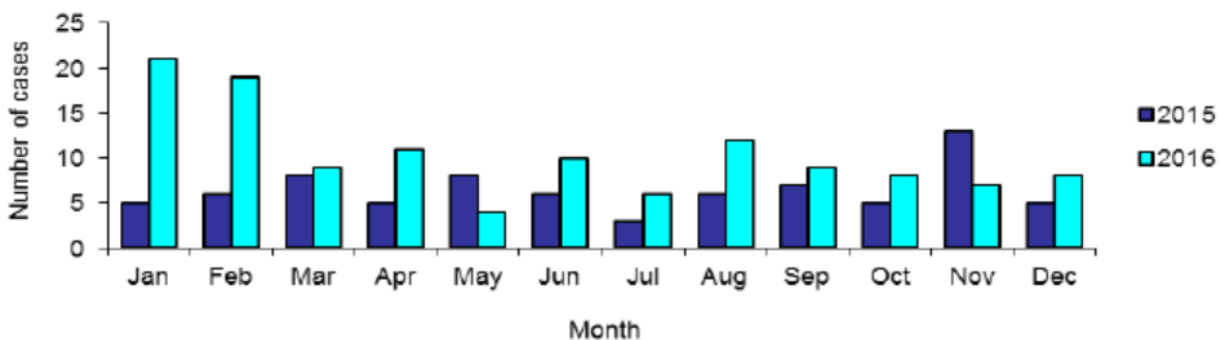


Figure 4. Number of *Salmonella* Typhi cases by month in South Africa, January to December 2015 & 2016