

P0849 Epidemiologic and antimicrobial resistance patterns of *Salmonella enterica* serotype Typhi isolates from Zimbabwe from 2009 to 2018

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Background: Typhoid fever remains a major public health problem in Zimbabwe with recurrent outbreaks reported since 2009. To provide guidance on appropriate treatment choice in order to minimise the morbidity and mortality of typhoid fever and prevent large-scale outbreaks, we investigated the antimicrobial susceptibility patterns and molecular subtypes of *S. Typhi* from Zimbabwean outbreak strains isolated from 2009 to 2018 and compared these to isolates from neighboring African countries.

Materials/methods: Antimicrobial susceptibility testing was performed on all isolates from stool and blood using disk diffusion and E-test, and results were interpreted using the 2017 Clinical Laboratory Standards Institute guidelines. Pulsed-field gel electrophoresis (PFGE) was performed on isolates.

Results: Altogether 22036 suspected cases and 805 confirmed cases of typhoid fever were notified in Zimbabwe. An increase in ciprofloxacin resistance was observed in isolates collected from 2012 to 2017 (0% to 22.0%). In 2018 and outbreak of a *S. Typhi* strain was reported which showed 73% and 100% ciprofloxacin resistance amongst the isolates obtained from Kuwadzana and Gweru respectively. These ciprofloxacin-resistant isolates had minimum inhibitory concentrations ranging from 1 mg/L to 2 mg/L. In Gweru a cumulative total of 1943 suspected typhoid cases, 21 confirmed cases and eight deaths were recorded. The Mabvuku *S. Typhi* 2009 subtype was noted to be circulating in Harare during 2013 and 2016, in Mutawatawa during 2014, in Chitungwiza during 2012, in Mutare during 2016, in Rusape during 2014 and in Inyanga during 2013, demonstrating a relationship between isolates across a wide area and timeline. The PFGE analysis of isolates collected in 2013, 2014 and 2016 revealed a dominant strain with an indistinguishable PFGE pattern previously identified in strains isolated from South Africa, Zambia and Tanzania.

Conclusions: Resistance to ciprofloxacin, which is the first line antimicrobial for typhoid fever management in Zimbabwe, is emerging. A better understanding of the molecular epidemiology of *S. Typhi* can greatly contribute to the prevention and control of outbreaks as well as to determine cross-border spread of specific strains. Comprehensive and integrated strategies as part of infection control and prevention can be developed using the molecular surveillance data.

