

# Invasive multidrug-resistant non-typhoidal Salmonella infections in Africa:

## **Abstract:**

In Africa, multidrug-resistant non-typhoidal salmonellae (NTS) are one of the leading causes of morbidity and high mortality in children under 5 years of age, second in importance only to pneumococcal disease. The authors studied NTS isolates from paediatric admissions at two hospitals in Nairobi, Kenya, and followed the index cases to their homes, where rectal swabs and stools from parents and siblings, and from animals in close contact, were obtained. The majority of NTS obtained from cases were *Salmonella enterica* serotype Typhimurium (106 out of 193; 54.9%) and *Salmonella enterica* serotype Enteritidis (64; 33.2%), a significant proportion (34.2%) of which were multiply resistant to three or more antibiotics, including ampicillin, tetracycline, cotrimoxazole and chloramphenicol. Only 23.4% of NTS were fully susceptible to all 10 antibiotics tested. Of the 32 NTS obtained from contacts (nine adults and 23 children) at the homes of index cases, 21 (65.6%) isolates were similar by antibiotic-susceptibility profiles and plasmid content, and their XbaI- and SpeI-digested chromosomal DNA patterns were indistinguishable from those of the corresponding index cases. Only three out of 180 (1.7%) samples from environmental sources, including animals, soil, sewers and food, contained NTS matching those from corresponding index cases. The carriage of NTS in an asymptomatic population was represented by 6.9% of human contacts from 27 out of 127 homes sampled. This population of carriers may represent an important reservoir of NTS that would play a significant role in the epidemiology of community-acquired NTS bacteraemia in children