b Foodborne outbreak amongst staff at a hospital in Gauteng Province

On 30 May 2018, the NICD received an alert of a suspected foodborne outbreak amongst staff at a hospital in Johannesburg, Gauteng Province. NICD carried out investigations between 31 May - 04 June 2018. It was established that the reported illness may have occurred as a result of either a staff lunch on 29 May or a water-cut at the hospital from 28-29 May 2018.

A case-control study was conducted to determine the cause and source of the outbreak. Staff members completed a case investigation form to establish demographics, any previous illness, access to drinking water, bathroom usage and a detailed history of foods consumed at the staff lunch. Leftover food items and self-administered rectal swabs from cases were sent for microbiological testing. The City of Johannesburg environmental health practitioners conducted an environmental investigation.

Of the 62 staff members who completed a questionnaire, 33 (53%) were identified as cases and 29 (47%) staff members met the inclusion criteria as controls. The average age of the cases was 38.4 years (range: 22.4 – 58.7). The majority of cases (n= 26, 79%) were females.

From the epidemiological curve (Figure 6), the average incubation period was 12.5 hours (range: 4-21). The most commonly reported symptoms amongst cases were diarrhoea (n=32, 96%) and abdominal cramps (n=29, 90%) with illness self-resolving within 24-48 hours. Logistic regression analysis indicated that staff who consumed beef lasagne were approximately 15 times more likely to develop symptoms compared to those that did not consume beef lasagne [aOR:14.8 (CI:3.4–63.3)]. Microbiological testing of the food specimens indicated the presence of *Clostridium perfringens* in roasted vegetables, enterotoxin-producing *Bacillus cereus* and *Pseudomonas putida* in a three-dish composite vegetable sample, *C. perfringens* and a non-diarrhoeagenic *Escherichia coli* in beef stew and *C. perfringens* and *Cronobacter sakazakii* in the beef lasagne. However, toxin screening was not conducted on the *C. perfringens*. Microbiological investigations on the self-administered rectal swabs revealed no significant findings, while environmental investigations were limited to only an inspection of the food preparation facility, which was compliant with all regulations.

Based on the epidemiological information (incubation period, symptoms, duration of illness), logistic regression analysis and food microbiology results, the source of the outbreak was most likely inadequately reheated beef lasagne served at the lunch, with the causative pathogen the *C. perfringens*. Control measures implemented included education of both the food handlers and hospital management on the World Health Organization’s five keys to safer food with a particular focus on reheating food to appropriate temperatures before consumption.

Source: South African Field Epidemiology Training Programme and Division of Public Health Surveillance and Response; NICD-NHLS (outbreak@nicd.ac.za)