

A Retrospective Cohort Study on an Outbreak of Gastroenteritis Linked to a Buffet Lunch Served during a Conference in Accra

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Abstract : On 21st November, 2016, an outbreak of foodborne illness occurred after a buffet lunch served during a stakeholders' consultation meeting held in Accra. An investigation was conducted to characterise the affected people, determine the etiologic food, the source of contamination and the etiologic agent and to implement appropriate public health measures to prevent future occurrences. A retrospective cohort study was conducted via telephone interviews, using a structured questionnaire developed from the buffet menu. A case was defined as any person suffering from symptoms of foodborne illness e.g. diarrhoea and/or abdominal cramps after eating food served during the stakeholder consultation meeting in Accra on 21st November, 2016. The exposure status of all the members of the cohort was assessed by taking the food history of each respondent during the telephone interview. The data obtained was analysed using Epi Info 7. An environmental risk assessment was conducted to ascertain the source of the food contamination. Risks of foodborne infection from the foods eaten were determined using attack rates and odds ratios. Data was obtained from 54 people who consumed food served during the stakeholders' meeting. Out of this population, 44 people reported with symptoms of food poisoning representing 81.45% (overall attack rate). The peak incubation period was seven hours with a minimum and maximum incubation periods of four and 17 hours, respectively. The commonly reported symptoms were diarrhoea (97.73%, 43/44), vomiting (84.09%, 37/44) and abdominal cramps (75.00%, 33/44). From the incubation period, duration of illness and the symptoms, toxin-mediated food poisoning was suspected. The environmental risk assessment of the implicated catering facility indicated a lack of time/temperature control, inadequate knowledge on food safety among workers and sanitation issues. Limited number of food samples was received for microbiological analysis. Multivariate analysis indicated that illness was significantly associated with the consumption of the snacks served (OR 14.78, P < 0.001). No stool and blood or samples of etiologic food were available for organism isolation; however, the suspected etiologic agent was *Staphylococcus aureus* or *Clostridium perfringens*. The outbreak could probably be due to the consumption of unwholesome snack (tuna sandwich or chicken). The contamination and/or growth of the etiologic agent in the snack may be due to the breakdown in cleanliness, time/temperature control and good food handling practices. Training of food handlers in basic food hygiene and safety is recommended.

Keywords : Accra, buffet, conference, *C. perfringens*, cohort study, food poisoning, gastroenteritis, office workers, *Staphylococcus aureus*

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