

Abstract

# Investigation of a Collective Foodborne Illness Shows a Multi-Pathogen Contamination in Training Institute in Rabat, June 2017, Morocco - A Case Control Study

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## Abstract

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**Background:** Foodborne diseases outbreaks are common worldwide and an important public health issue. According to WHO, approximately 600 million of foodborne illness and 400 thousand related deaths per year. In Morocco, an average of 1500 cases is notified annually. On June 18, 2017, the public health service was alerted about 43 suspected students in a training Institute in Rabat admitted in emergency for collective foodborne disease following an uptake of meal a day before.

**Objective:** We investigated this outbreak to confirm the outbreak, to identify the source of contamination and to recommend control measures.

**Methods:** We conducted a case control study. We selected cases and controls in the ratio of 1:1. We defined a case as anyone who attended the meal served on 17 June 2017 at the Institute's restaurant and presented in the two days after diarrhea and one of the following signs: nausea, vomiting, abdominal pain, fever, and dizziness. A control was defined as anyone who had consumed the same meal and had not presented any digestive signs. We conducted bivariate and multivariable analysis. Stools of ill students were collected, and food specimen was collected for bacterial testing.

**Results:** Among 100 students interviewed, we identified 50 cases. Among cases, males were predominant (86%), the median age was 21 years. 47 sought medical care. The episode was short with an estimated average incubation period of 9 hours. The epidemic curve oriented towards a common source of contamination. Among food items, Briwates were strongly associated with the illness with an odd ratio of 14.23 (5.04-40.04). Laboratory testing of Briwates found EColi O157 and Staphylococcus Aureus.

**Conclusions:** This was an outbreak associated with the consumption of Briwates contaminated by two germs, which was the source of this episode. We recommended to strengthen hygiene measures and safe food handling, to raise awareness and educate the staff.

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