

Authors and FETP Identification

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Title:

A Series of Norovirus Outbreaks Associated with Contaminated Water Source — New Taipei City, Taiwan, 2016

Abstract Text:

Background:

During March to April 2016, five consecutive gastroenteritis outbreaks occurred in a short-term boarding-school-like training facility in New Taipei City, causing illness among at least 98 of 481 trainees. We investigated the cause and source of these outbreaks.

Methods:

We conducted a cohort study and enrolled all 250 trainees of the three classes which began the training course on April 25. We used a semi-structured questionnaire to collect trainees' demographics, symptoms, and food and water consumed ≤ 48 hours before illness onset. Cases were defined as illness in trainees who developed ≥ 2 of the following symptoms: diarrhea, vomiting, abdominal pain, nausea, fever and/or weakness within 96 hours of moving into the facility. We used bivariate analyses to identify associated food and water exposures. Rectal swabs and stool of ill trainees and food handlers, and leftovers and environmental samples of the kitchen were collected for bacterial culture and viral polymerase chain reaction testing.

Results: Of 250 trainees staying at the facility during April 25–29, 55 were ill. The median interval from check-in to illness onset was 61.5 hours (range, 27–94). No food item or water dispenser was associated with illness. Norovirus were detected in 7/7 trainees, 1/7 food handlers, and water from one deep well, the only water source in the facility, and warm water from the drinking machine, water from two toilets for hand washing. The outbreak ceased after isolation of ill patients and change of water source to chlorine-treated tap water.

Conclusions: Norovirus-contaminated well water was the most likely source of these outbreaks. Using treated water for such large boarding-school-like facility is needed to ensure the water safety.

Keywords: *Norovirus, Outbreak, waterborne, Gastroenteritis*

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