

Abstract

# Cholera Outbreak Investigation in Baghdad Al-Rusafa August-November 2017

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## Abstract

**Background:** Iraq is a cholera-endemic country with outbreaks occurring every 3-4 years. Since 29th, August 2017, Iraq CDC received reports on confirmed cholera patients in Baghdad/ Resafa (Eastern Baghdad with a population of 4.8 million). Up to Nov 29th the total number of confirmed cholera patients was 257.

**Objective:** To determine the epidemiological characteristics of the patients and identify potential risk factors.

**Methods:** A team of FETP residents dispatched to investigate the outbreak and developed a form to compile demographic and epidemiological data from all the patients' investigation forms that were filled at the treating hospitals. Then a case-control study conducted using the accessible cholera patients and neighbors' controls. The cholera case was defined as any patient with acute watery diarrhea, and isolation of *Vibrio cholera* O1 or O139 from a stool sample.

**Results:** Among the 257 confirmed cases, 51% were male, mean age was 38.2 years and 44% were illiterate. The attack rate was 5.4/100,000; the highest was in Baladiyat (13/100,000), Baghdad - Jadida (12/100,000), and Madain (8/100,000) districts. The case fatality rate was 1.17%. The significant risk factors were: drinking tap water (OR=5.2, 95% CI:2.2-12.5), using Reverse Osmosis water (OR=8, 95% CI:2.4-26.1), not using boiled water (OR=2, 95% CI:1.2-3.8), not practicing washing hand after using a toilet (OR=5, 95% CI:1.9-13.4), lack of awareness toward boiling water (OR=1.8, 95% CI:1.04-3.3) and history of having meals outside home within seven days preceding onset (OR=4.8, 95% CI: 1.9-12.2). No significant association found with the following factors: education, occupation, crowding index, house sewage disposal type, using aqua tabs, chlorine readings, and travel history.

**Conclusions:** Shortage of safe water and poor hygiene are still the main causes of cholera outbreaks in Iraq. Political commitment towards the provision of safe water and improving sanitary conditions are the cornerstone to stop these outbreaks.

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