

## How to Break an Outbreak: Containment Measures of a Salmonella Outbreak Associated with Egg Consumption

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**Abstract :** Background: Salmonella enteritidis is a common cause of foodborne outbreaks, primarily associated with poultry eggs. S. enteritidis This is the only Salmonella type that is found inside the eggshell. A rise in Salmonella enteritidis notifications was noted in spring 2017. Aims: The aim of this study is to describe the epidemiological investigation of the outbreak in the Jerusalem district, along with the containment measures taken. Methods: This study is a population-based epidemiological study with a description of environmental control activities. Results: During the months May - July, 2017 848 salmonellosis cases were reported to the Jerusalem district health office compared to 294 cases May - July 2016. Salmonella enteritidis was isolated in 58% of reported cases. Clusters and outbreaks ( > 2 cases) were reported among nursery schools, nursing homes, persons residing in one kibbutz and several cases in different food service establishments in the Jerusalem district. Epidemiological investigations revealed eggs consumption as a common feature among the cases (uncooked or undercooked eggs in most cases). A national investigation among egg suppliers revealed that most cases consumed eggs provided by a single provider with isolation of Salmonella enteritidis at the source as well. Containment measures were taken to control the epidemic including distributing information via electronic and written media to the public, searching for all egg distribution centers, informing local authorities, the poultry council and food stores. The eggs originating from the provider were recalled and extinguished. Written instructions to all food preparation facilities in the district were distributed regarding the proper storage and preparation of eggs. The number of reported cases declined and the outbreak vanished during correlating months of 2018. Conclusions: The investigation of Salmonella enteritidis outbreaks should include epidemiological and laboratory investigations, tracing the source of the eggs and testing the eggs and the source of eggs. Health education activities are essential as to the proper handling of eggs and egg products aiming to minimize susceptibility to Salmonella infection.

**Keywords :** epidemiological investigation, food-borne disease, food safety, Salmonella enteritidis

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