

[Fictitious abstract created for teaching purposes]

Water supply system as a cause of Shigella outbreak among children living in an island of Stockholm archipelago, Sweden, September-October 2013

Background:

Shigella are a major cause of dysentery throughout the world. Infection occurs mainly following consumption of contaminated food or contaminated water. In October 2013, the Swedish national institute in Stockholm notified more than 10-fold increase of report Shigella cases among children living in rural areas of the island of Nåttarö, in the Stockholm archipelago. They investigated the outbreak to determine the source and extent in order to implement control measures.

Methods:

The outbreak investigation team defined a case: "People with a laboratory-confirmed diagnosis of Shigella at the Stockholm General Hospital since 1 September 2013 to 31 October 2013" and described the outbreak by time, person and place. They carried out a matched case-cohort study and used univariate stratified analysis (STATA). Controls were chosen from the population registry of affected municipalities, frequency matching for sex and age by 1- year intervals (6-month intervals for cases aged below 1 year).

Results:

In Stockholm General Hospital, Sweden, were during September – October 2013 laboratory-confirmed 174 cases (90 men, 84 women) of Shigella. 174 controls (90 men, 84 women) were chosen. The most affected age group were children under 12 months of age (AR= 150 per 10,000). Cases were more likely in areas affected by a pipeline leakage OR = 8.28, 95% CI (1.36- 16.03, p-value = 0.000) than in other area. Consumption of tap water area affected by leakage has statistically significant OR= 14.30, 95% CI (1.61-19.3), than in the other area, OR = 0.31, 95% CI (0.02-18.5).

Conclusions:

It is necessary to repair pipeline leakage rapidly on remote islands.