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Abstract Title:

National outbreak of Salmonella Give in Malta linked to a local food manufacturer, October 2016

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Abstract

Background

Salmonella Give is a rare serotype across Europe. In Malta, an average of one case per 100,000 was reported annually from 2007-2015. On 15/10/2016, five cases of S. Give were detected. We investigated to identify the source and implement control measures.

Methods

We conducted a descriptive epidemiological investigation. Confirmed cases were defined as persons with laboratory-confirmed S. Give infection since 08/10/2016 and suspected cases as persons with gastroenteritis and epidemiologically linked to a confirmed case. Casualty physicians reported patients presenting with fever and gastroenteritis. Laboratories were alerted to report preliminary Salmonella results. We collected data on risk exposures from cases by telephone interviews, inspected implicated restaurants and conducted food trace-back investigations. Food and human samples were microbiologically analysed. Whole Genome Sequencing (WGS) was performed on positive human isolates.

Results

Thirty-three cases were reported with onset dates from 8-30th October (18 confirmed, 15 suspected). Eight confirmed cases required hospitalisation. Twelve (67%) confirmed and 14 (93%) suspected cases were linked to four restaurants. Eight sequenced human isolates belonged to the same distinct phylogenetic cluster. S. Give was isolated from ready-to-eat antipasti served by the restaurants which were supplied by the same local manufacturer. At the manufacturer, S. Give was identified in packaged bean dips, ham products and an asymptomatic food handler; inspections found inadequate separation between raw and ready-to-eat food during processing.

Conclusions

Multi-disciplinary investigations identified cross-contamination at the manufacturer as the likely source of infection. The severity of illness indicates a high virulence of this specific serotype. To



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prevent further cases, food products were recalled and the manufacturers' food safety practices reviewed. This outbreak highlights the importance of reinforcing adherence to food safety standards at manufacturing level.

Message

This research highlights the importance of cross-collaboration and using a multi-disciplinary approach e.g. epidemiological, environmental and microbiological analysis, during outbreak investigations. This outbreak also highlights the importance of reinforcing adherence to food safety standards at manufacturing level.