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Concurrent outbreaks of *Salmonella* Typhimurium in South Australia

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Abstract

The Communicable Disease Control Branch of the South Australian Health Commission received 45 laboratory notifications of *Salmonella* between 23 December 1996 and 17 January 1997. A rapid screening test, undertaken by the Institute of Medical and Veterinary Sciences, Adelaide, was the first indication that this was more than one outbreak, prompting the establishment of separate investigations. Three *Salmonella* Typhimurium (*S. Typhimurium*) phage types were subsequently identified. Investigations are continuing into an outbreak of *S. Typhimurium* phage type (PT) 64, while investigations failed to identify any association between four cases of PT 44. As of 12 February 1997, 71 notifications had been confirmed as *S. Typhimurium* PT 135. Epidemiological investigations found this outbreak was associated with consumption of bread rolls with a meat filling distributed through local Asian grocery stores from a home-based manufacturer. The product was voluntarily withdrawn and there have been no new cases of PT 135. *Comm Dis Intell* 1997;21:61-62.

Introduction

On 31 December 1996, the Communicable Disease Control Branch of the South Australian Health Commission received a laboratory notification of a *Salmonella* isolated from the faecal specimen of a two year old female with an Indochinese name. A second case with an Indochinese name was notified on 2 January 1997 and a further seven were notified on 15 January.

Methods

On 16 January, all laboratories were asked to notify isolation of *Salmonella* by telephone. Investigation forms were sent to three practitioners who had been consulted by most of the patients and to the Womens and Childrens Hospital. A range of information including disease details, patient contacts, animal contacts, travel details and food history was collected.

From 21 January, local council environmental health officers contacted each notified case to complete the information requested in

the investigation forms. Food samples were obtained from the homes of cases, associated retail outlets and from the manufacturer of the suspected food. All food samples were refrigerated and transported to the Institute of Medical and Veterinary Sciences (IMVS), Adelaide.

The Australian Salmonella Reference Centre at the IMVS conducted serotyping and phage typing of all isolates. As an early indicator, the IMVS undertook Randomly Amplified Polymorphic DNA (RAPD) analysis of the isolates.

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A case-control study commenced by telephone interview on 29 January to test the hypothesis that a particular meat-filled bread roll was associated with the outbreak of *Salmonella* Typhimurium phage type 135 (*S.* Typhimurium PT 135).

Results

Forty-five laboratory notifications of *Salmonella* were received between 23 December 1996 and 17 January 1997. RAPD typing on 18 January indicated that the *Salmonella* isolated in the previous week consisted of two groups: one RAPD type correlated with phage type 64 and the second RAPD group, which had not at that time been phage typed, included all the isolates from people with Indochinese names. In the next week it was found that this second RAPD group were all *S.* Typhimurium PT 135. A third group of four *S.* Typhimurium PT 44 were not epidemiologically linked.

No samples of the suspected foodstuffs consumed by the cases were available for testing. *Salmonella* was not isolated from any food samples obtained from the manufacturer or from retail outlets.

The case-control study found the outbreak of *S.* Typhimurium PT 135 was associated with consumption of a particular meat-filled bread roll distributed through local Asian grocery stores from a home-based manufacturer. The product was voluntarily withdrawn and production ceased on 27 January. There have been no new cases of phage type 135 with onset since this date. A report on the case-control study is being prepared for publication.

Serotyping and phage typing of *Salmonella* isolates is continuing. As of 12 February 1997, 71 notifications linked to consumption of the rolls had been confirmed as *S.* Typhimurium PT 135. Epidemiological investigations are continuing into the outbreak of *S.* Typhimurium PT 64.

Discussion

Timeliness is an essential component of outbreak investigations, particularly when compilation of food histories is involved. As a result of laboratory screening of the isolates through RAPD typing, the existence of the second outbreak was identified before phage typing confirmed the isolates were *S.* Typhimurium PT

135. The early screening prompted the establishment of separate investigations. Both the early screening and subsequent confirmation through phage typing were crucial because it meant the investigation was not unduly distracted by unrelated cases. This then assisted in the establishment of a hypothesis which we tested using a case-control approach.

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