



Department for Health and Ageing

2016-17 Annual Report

Department for Health and Ageing

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Appendix 2: Food Outbreak Investigations 2016-17

An **outbreak** is defined as an event where two or more people experience a similar illness after eating a common meal or food and epidemiological and/or microbiological evidence indicates the meal or food as the source of the illness.

Outbreak No. 1: *Salmonella* Hvittingfoss – Community - Multijurisdictional

An increase in *Salmonella* Hvittingfoss notifications was observed in NSW, WA and SA. A total of 168 cases were reported nationally between 14 June and 25 August 2016. SA had 33 cases of *S. Hvittingfoss*, of which 19 were confirmed to meet the MJOI case definition on whole genome sequencing. A case-case study was conducted using *Campylobacter* or *Salmonella* Typhimurium controls. Univariate analysis identified several food items with elevated odds ratios. However, upon multivariate analysis, only rockmelon remained statistically significant (adjusted odds ratio = 6.4; 95% confidence intervals (CI) 1.8-22.4). Rockmelon samples collected from retail outlets in SA were positive for *S. Hvittingfoss*. Food Standards Surveillance conducted trace back activities which identified that Rockmelon producer was interstate. Rockmelon samples (cut or whole) were collected from suppliers of the aged care facilities and child care centres associated with the outbreak. An onsite inspection of the producer was conducted by their state department and producer conducted a voluntary trade recall to remove product from the supply chain.
(520160110483)

Outbreak No. 2: *Salmonella* Typhimurium phage type 9 – Restaurant

Multiple reports of suspected food poisoning were made to CDCB and the local council following consumption of food at the same hotel restaurant in August 2016. In total, 219 people were interviewed, and 140 reported feeling unwell after eating at the hotel. An additional four unwell people that were not able to be interviewed were reported to be linked to the hotel by the notifying doctor and/or relatives. Eighty-five cases were confirmed as *Salmonella*, and the majority of these were further identified as *S. Typhimurium* phage type 9 (STm 9) or *S. Typhimurium* (STm) with a MLVA pattern of 03-24-11-10-523 (72 cases of STm 9, and 7 cases of STm with this MLVA). There were four cases who consumed food from the hotel that had other strains of *Salmonella*; *S. Bareilly*, *S. Newport*, STm 9 with a different MLVA pattern of 03-24-24-10-523 and one case with a dual infection of STm 9 and STm 30 with an MLVA pattern of 03-24-11-10-523. A case-control study was conducted and the results implicated consumption of scrambled eggs as the likely vehicle of transmission of illness (crude odds ratio 40.67, 95% CI 16.99 – 99.45, $p < 0.0001$; and multivariate odds ratio 41.47, 95% CI 15.46 – 111.24 [adjusted for consumption of mushrooms, hash browns and bacon]). Environmental swabs of the kitchen did not detect *Salmonella*.
(520160111832)

Outbreak No. 3: *Salmonella* Typhimurium phage type 135 – Bakery

Eight cases of STm 135 ate meat and salad or egg and salad sandwiches or wraps from the same bakery. Six cases consumed food from the bakery on the same day, 25 October 2016, and the other two cases consumed food from the bakery on 24 or 26 October 2016. All cases had the same MLVA profile of 03-14-10-10-523. An environmental health inspection of the premises was conducted. No major issues were identified. The egg supplier for this bakery was the same as two other confirmed foodborne outbreaks of the same type of *Salmonella* in early 2017.
(520160122171)

Outbreak No. 4: *Campylobacter jejuni*– Commercial caterer

Six cases of campylobacteriosis (four of which were further typed as *Campylobacter jejuni*) and five cases of gastroenteritis were reported among 90 attendees at a wedding on 10 December 2016. One case reported symptoms prior to the wedding, all other cases reported onset of illness on 12 or 13 December 2016. Food was supplied by a catering company for the wedding and served on boards to be shared amongst a group of people. The local council inspected the catering company and the preparation of chicken liver parfait was inadequate; cases also reported inadequate and dirty toilet facilities at the venue.

(520160126652)

Outbreak No. 5: *Salmonella* Typhimurium phage type 9 – Restaurant

Eleven confirmed cases of *Salmonella* Typhimurium phage type 9 (STm 9) reported consuming food at the same restaurant between 13 and 22 December 2016. Additionally, three staff members, including one food handler, at the restaurant were also reported with STm 9 infection. Two of the staff members were asymptomatic, including the food handler. Frequently eaten foods at the restaurant included salt and pepper calamari with aioli (6 cases) and wrapped haloumi (5 cases). Food samples, including aioli, hummus and dukkha, were positive for STm 9 and three environmental swabs were also positive for STm 9. Multiple environmental investigations of the implicated business revealed many concerns around cross contamination including unhygienic food handling practices, poor kitchen layout design and significant gaps in food handler's skills and knowledge. Inappropriate hand washing was another key issue identified during the investigation. A total of 80 samples were collected at three separate visits by authorised officers. Eight samples detected the presence of *Salmonella* S.Tm9 in them and four of them were food items. An improvement notice and a prohibition order was placed on the venue and it was closed until clearance was given by SA Health. The investigation concluded that S.Tm9 may have been introduced in the kitchen environment via cross contamination of raw egg based products however lack of basic food safety skills and knowledge and poor food handling practices was most likely the cause of the incident.

Two different MLVA profiles were identified in cases (12 cases with 03-23-05-10-523 and two cases with 03-24-25-10-523), and three different MLVA profiles were identified in food and environmental samples (two food and four environmental samples with 03-23-05-10-523, one food sample with 03-23-24-10-523 and one food sample with 03-24-24-10-523).

(520160126714)

Outbreak No. 6: *Salmonella* Typhimurium phage type 135a – Restaurant

Six cases of STm 135a (MLVA 03-14-10-10-523) reported eating at the same café between 27 and 31 December 2016. Cases ate a variety of different foods and the environmental inspection identified the production and use of a raw egg aioli onsite for several foods. The premises decided to cease production of their own aioli and use a commercial product instead.

(520170001588)

Outbreak No. 7: *Salmonella* Typhimurium phage type 9 – Restaurant

Six cases of STm 9 (MLVA 03-15-06-11-550) reported eating at the same restaurant between 19 and 28 January 2017. All cases consumed egg dishes (eggs benedict, scrambled eggs or poached eggs). Several food and environmental samples were taken and no *Salmonella* was detected.

(520170002605)

Outbreak No. 8: *Salmonella* Typhimurium phage type 135a – Restaurant

Nine cases of STm 135a (MLVA 03-14-09-11-523) reported eating at the same restaurant between 28 January and 2 February 2017. Cases ate a variety of different foods. Several food and environmental samples were taken and no *Salmonella* was detected.
(520170003650)

Outbreak No. 9: *Salmonella* Typhimurium phage type 135a – Restaurant

Four cases of STm 135a (MLVA 03-14-09-11-523) reported eating at the same restaurant between 7 January and 5 February 2017. Cases ate a variety of foods, with two specifying that aioli was part of the meal. An environmental inspection identified concerns around house-made raw egg sauces used in the rolls and baguettes. Several food and environmental samples were taken and one sample from a stab mixer was positive for STm phage type 135a (MLVA 03-14-09-11-523).
(520170004688)

Outbreak No. 10: *Campylobacter jejuni* – Restaurant

One confirmed case of *Campylobacter jejuni* was reported with a medical notification indicating others ill after attendance at a wedding. The wedding reception was held at a restaurant. Contact was made with several attendees, with reports of approximately 11 others unwell with gastroenteritis of a total of 102 attendees at the wedding. An analytical epidemiological study could not be undertaken. An environmental health officer inspected the premises and identified several high risk foods, including a chicken liver parfait and a chicken galantine. Recommendations were provided to the restaurant to have a higher temperature/time combination to ensure thorough cooking of the chicken galantine.
(520170005923)

Outbreak No. 11: *Salmonella* Typhimurium phage type 12a – Restaurant

Thirteen cases of STm 12A (MLVA 05-15-17-09-490) reported eating at the same restaurant between 2 and 10 March 2017. Cases reported eating a variety of foods including salads, savoury slices and smoothies. Multiple food and environmental samples were collected and no *Salmonella* was detected.
(520170006101)

Outbreak No. 12: *Salmonella* Typhimurium phage type 135a – Bakery

An increase in cases of STm 135a was noted in March 2017 and cases were identified for interview. A total of 14 cases of STm (12 further typed as phage type 135a, one as untypeable and one as phage type 135) reported consumption of pork pies in their incubation period. All 14 cases had the same MLVA type of 03-14-09-11-523. Seven of the cases purchased their pies directly from the bakery that produced them, six from independent supermarkets and one as part of a meal from a hotel. Six cases were hospitalised for their illness (43%) and the median age of cases was 62 years (range 19-89 years). An inspection of the bakery premises identified problems with the production of the pies including application of a post-cook raw egg wash to the pies, inadequate storage temperature for the pies and inadequate cleaning and sanitising of equipment used to prepare the pies. Several food and environmental samples were taken, and three food samples were positive for STm 135a. An emergency order was issued to the premises and a recall occurred on 22 March 2017. A return to work plan was completed for the premises to allow recommencement of pork pie production with a modified process. Food Standard Surveillance and Biosecurity officers monitored the production of pies for compliance with safe food handling practices and time and temperature control. The manufacturer had decided to discontinue applying the egg wash after the final cooking step due to the potential high risk of possible contamination from a raw egg product. Some of the

pies that were produced in the return to work program were taken for laboratory testing. These samples tested negative to Salmonella (520170006238)

Outbreak No. 13: *Salmonella* Hessarek – Community

An increase in cases of *S. Hessarek* was noted and cases notified in March identified for hypothesis generating interviews. Eight cases were interviewed and all reported eating eggs, with five specifying the consumption of the same brand of free range eggs. Samples of the named brand of eggs were taken with one sample positive for *S. Hessarek* in the contents of the eggs. SA Health and PIRSA are considering undertaking research on *S. Hessarek*. (520170006637)

Outbreak No. 14: *Salmonella* Typhimurium phage type 135 – Aged Care Facility

Twelve residents and one staff member from an aged care facility were positive for STm 135, with illness onset between 28 March and 22 April 2017. One resident had no gastroenteritis symptoms, but was positive for STm 135 from a urine specimen collected on 23 April 2017. This resident died of sepsis attributed to a urinary tract infection. The staff member was suspected to have acquired their infection from person-to-person transmission due to direct care of unwell residents and a later onset date than the residents. Three residents were hospitalised.

A nested case-control study (11 cases with gastroenteritis, 22 controls) was conducted using the food histories obtained from the facility. Four items from the menu in the previous week had elevated odds ratios (OR): butter chicken on 22 March (OR undefined, 95% CI 4.75 – undefined, $P=0.0003$); country chicken pie on 23 March (OR undefined, 95% CI 1.6 – undefined, $P=0.02$); crumbed fish on 24 March (OR 8.3, 95% CI 0.83 – 397, $P=0.04$); and scrambled eggs on 27 March (OR 6.25, 95% CI 0.75 – 55.75, $P=0.04$).

All 13 cases had the same MLVA pattern of 03-16-09-12-523. Food processes in the kitchen were reviewed and a total of 20 food and environmental samples were taken. No *Salmonella* was detected in any of the samples collected from the site. The egg stamp on the eggs used at the site indicated they were sourced from another jurisdiction that was also seeing the same MLVA pattern in humans. (520170006930)

Outbreak No. 15: *Salmonella* Typhimurium phage type 9 – School

Reports of gastroenteritis at an out of school hours care (OSHC) facility were received by CDCB and an investigation was launched. Hypothesis generating interviews were conducted with seven cases reporting gastroenteritis after attending OSHC in the week 24 to 28 April 2017. Six of the seven cases reported making and/or eating cupcakes at the OSHC. An online survey was sent to parents of 158 attendees at the OSCH facility, however only 35% of people responded (55/158). In total there were 24 children who reported gastroenteritis after attending the OSHC, and 12 of the cases were confirmed with STm 9 (MLVA 03-23-12-10-523). Several of the online survey responses were incomplete with a maximum of 35 valid responses available for analysis for some exposures. On univariate analysis, four items had significant raised odds ratios: apple cupcakes on 27 April (OR 15.33, 95% CI 1.11 – 787, $p=0.019$); watermelon on 27 April (OR 11.5, 95% CI 1.28-140, $p=0.012$); plain cupcakes on 26 April (OR 8.53, 95% CI 1.28 – 65.3, $p=0.021$) and cocktail sausages on 27 April (OR 6.3, 95% CI 1.02 – 41). The environmental investigation identified inadequate sanitation procedures in the kitchen and for equipment used when the children were baking. Some of the children also reported consuming uncooked cake mixture. Eggs in the cupcakes were the suspected source of the illness. (520170009353)

Outbreak No. 16: *Salmonella* Typhimurium phage type 8 – Private residence

A medical notification was received reporting that several people were unwell after a common meal at a private residence. Five people shared a meal and all five were reported to be unwell with gastroenteritis the day after the meal. Four of the five ill people were family members within the one household, and the additional attendee did not share any other meals in common with the family. The host of the meal was interviewed and it was identified that the meal included a chocolate mousse made with raw eggs. Three of the attendees (two family members and the additional attendee) were confirmed to have STm 8 infections (MLVA 03-27-16-11-523). Eggs were the suspected source of the illness.
(520170012112)

Outbreak No. 17: Hepatitis A – Community - Multijurisdictional

A MJOI commenced on 25 May 2017 in response to three cases of locally acquired hepatitis A with the same sequence type notified in three different jurisdictions (1 Vic, 1 SA and 1 Qld) with onsets of illness between January and April 2017. The sequence was the same as cases of locally acquired hepatitis A linked to frozen berries in 2015. From 1 January to date (3 August 2017) there have been ten confirmed cases of hepatitis A with the same outbreak sequence from four jurisdictions (4 Qld, 3 SA, 2 NSW and 1 Vic), seven of which recalled eating frozen mixed berries in their incubation period. A household contact of a South Australian case also developed a clinically compatible illness after the confirmed case in the household, and was likely to be due to secondary transmission. The environmental investigation has included the identification of hepatitis A virus in one opened packet of frozen mixed berries collected from a case's household, and in one of seven sealed packets of frozen mixed berries submitted for testing (all testing conducted on Creative Gourmet brand frozen mixed berries, 300g bags). Trace back evidence also identified that the source of the berries in the implicated product, Creative Gourmet frozen mixed berries 300g, were the same source as the berries linked to the 2015 MJOI hepatitis A outbreak. The implicated product was withdrawn from the market and a national consumer level recall was co-ordinated by Food Standards Australia and New Zealand on 2 June 2017. (The investigation was still open at the time of writing this report due to the long incubation period up to 50 days for hepatitis A, and the number of confirmed associated cases may change in the future.)
(520170015211)