

**OzFoodNet—Enhancing Foodborne Disease
Surveillance Across Australia**

**Second Quarter Summary, 2012
NSW/Hunter New England OFN sites combined**

August 2012



Overview of Quarter

In NSW, foodborne outbreaks are identified via a range of mechanisms, including reports from the public to public health units, general practitioners, emergency departments, analysis of surveillance data, and reports to the NSW Food Authority's (NSWFA) Consumer Complaints Line. Reports to the NSWFA result in a number of outbreaks affecting small numbers of people being referred to public health units (PHUs). These outbreaks usually require limited epidemiological investigation and often the aetiology cannot be determined.

Incidence of Foodborne Disease

Salmonellosis notifications decreased by 12% compared to the same quarter in the previous five years. In 2012 there were 580 notifications compared to a five-year average of 665 cases.

Typhoid notifications increased by 25% for the second quarter of 2012 compared to the same quarter in the previous five years (11 vs. 8.8 cases). All of the typhoid infections were acquired overseas.

There was a decrease of 37% in notifications of **hepatitis A**. In the second quarter of 2012 there were 9 notifications compared to a five-year average of 14.2 cases for the same quarter. All of the hepatitis A infections were acquired overseas.

There were 9 notifications of **listeriosis** in the second quarter of 2012. This was a 67% increase on the previous five-year average of 5.4 cases for the same quarter. A number of different subtypes were identified and there were no links between cases.

Giardiasis notifications for the second quarter of 2012 (545 cases) were very similar to the five-year average of 546.4 notifications for the same quarter, while **cryptosporidiosis** notifications increased by 60% (233 notifications compared with a five year average of 145.4 notifications for the same quarter). A number of public pools were identified as possible exposure sites for a small number of cryptosporidiosis cases but for the majority of cases a source was not identified. Twenty-nine public pools with varied locations over the state were identified as possible exposure sites for 39 cases (1-4 cases per pool). In these cases the local council environmental health officer inspected the pools and if appropriate the pools were super-chlorinated.

Shigellosis notifications decreased by 13% during this quarter with 22 cases reported, compared with 26.8 cases for the five-year average for the same quarter. Ten (45%) cases were noted as having travelled overseas during their incubation period, 4 (18%) acquired their infection in Australia, and for 8 (36%) cases the place of acquisition was unknown. Three of the locally acquired cases (75%) were males who reported engaging in male to male sex. These cases were not clustered by serotype.

There were five cases of **Shiga-toxin producing *E. coli* (STEC)** infection notified during the second quarter of 2012, which was a 92% increase on the five-year average of 2.6 cases for the same quarter. Investigations did not reveal a source of infection for these cases and no links could be found. Four cases of **haemolytic uraemic syndrome (HUS)** were notified during the second quarter of 2012 including one death. STEC (subtype O157:H) was confirmed in stool of one of these cases. This was a 122% increase on the five-year average of 1.8 cases for the same quarter of the year. These cases were investigated and no links could be found.

During the second quarter of 2012, the public health units in NSW and OzFoodNet investigated 13 foodborne or suspected foodborne outbreaks. In addition, 200 outbreaks with suspected person to person transmission in institutions (199) and non-institutional settings (1) were investigated.

Foodborne Disease Outbreaks

Of the 13 foodborne or suspected foodborne outbreaks reported by members of the public or identified through routine surveillance of *Salmonella* data in this quarter, 6 were due to *Salmonella* Typhimurium, one was due to *Staphylococcus aureus*, and one to scombroid poisoning. One was thought to be due to an unknown viral pathogen and the other 4 were due to unknown pathogens.

1. **Outbreak of *Salmonella* Typhimurium 170 (MLVA type 3-9-9-12-523) infection linked to eggs from the same farm**

The following three outbreaks (a, b & c) are related to the same egg farm and are linked to an outbreak reported in the previous quarterly report, repeated here.

SES30680 - There were 18 cases of gastrointestinal illness in a group that attended a meal at restaurant A in Sydney on 11 March 2012. They were a group of 24 who ate a banquet menu. Four people submitted stool samples of which 3 were positive for *Salmonella* Typhimurium (MLVA 3-9-9-12-53). The only high risk foods in the banquet were the Bombe Alaska, which was coated in raw egg

meringue and was only slightly cooked, and the raw vegetable ingredients in the Peking duck pancakes. Consumption of these foods were not however statistically significantly associated with illness. The NSWFA inspected the premises and found no issues with the exception of the serving of raw egg products. A warning letter advising of the risks involved in serving raw egg based menu items and minimally cooked egg based foods has been issued to the food service management of the premises. The restaurant agreed to stop serving Bombe Alaska. Samples were taken of food and the environment and an egg rinse was positive for *Salmonella* Chester. Egg trace back was conducted to farm A where multiple *Salmonella* serotypes were detected in the environment and the grading area. *S. Typhimurium* with the same MLVA was detected. Increased cleaning and improvement of the grading facility was imposed on egg farm A. (SES30680)

a) *Salmonella* Typhimurium 170 (MLVA type 3-9-9-12-523) infection associated with a restaurant

A PHU followed up 3 *Salmonella* notifications from a single family; they were interviewed and found to have eaten at restaurant A in Sydney. Further investigation revealed a total of 12 people (from 15) in 3 family groups had been ill following this meal. The 12 ill all consumed fried ice cream. Restaurant A was investigated in March following a food poisoning event from raw egg dessert (SES30680 above) with the same MLVA type. *S. Havana* was also isolated in one case. Egg farm A that supplies this restaurant was investigated by the NSWFA. *S. Typhimurium* MLVA type 3-9-9-12-523 and *S. Havana* were detected in the farm environment. Increased cleaning and improvement of the grading facility was enforced on egg farm A. (GS31108)

b) *Salmonella* Typhimurium 170 (MLVA type 3-9-9-12-523) infection associated with a restaurant

In April, OzFoodNet (HNE) investigated a point source salmonellosis outbreak associated with a meal at restaurant A. Forty nine students and staff travelled to Sydney for a school excursion. Approximately 24 hours after consuming the implicated meal, 4 students and 1 staff member reported symptoms consistent with salmonellosis. Specimens collected from one staff member and one student were positive for *Salmonella* Typhimurium MLVA 3-9-9-12-523. The only food item common to all cases was deep fried ice-cream which was eaten by cases either in its entirety or shared between cases. In response to the earlier outbreak, the NSWFA issued an advisory letter advising the risks of using raw and undercooked eggs. As a result of this outbreak, NSWFA issued a prohibition order, prohibiting the use of raw and minimally cooked eggs. The *Salmonella* strain was isolated from a sample of uncooked deep fried ice cream taken from the premises. NSWFA also

conducted a trace back investigation of the eggs to egg farm A. A summary of the investigation is described under outbreak SES30680. (HUN0462).

c) *Salmonella* Typhimurium 170 (MLVA type 3-9-9-12-523) infection associated with a bakery

Since January 2012, cases of a previously uncommon MLVA type 3-9-9-12-523, were clustered in the south west Sydney area. This MLVA type is the same as was identified in cases who had complained about illness after meals in restaurant A on three separate occasions (outbreaks summarised above) and following a party at restaurant B on 7 January 2012 (SSW29733). The epidemiological investigation into restaurant B did not identify an association between illness and any particular food. Three different types of cakes, mixture of éclairs, white choc profiteroles and milk choc profiteroles, were consumed at this party and had been supplied by bakery A. Following the investigation of egg farm A subsequent to the outbreaks from restaurant A, it was identified that bakery A was a wholesale customer of egg farm A. The NSWFA inspected bakery A on 15 May 2012 and the same strain of *Salmonella* was found on re-usable piping bags, machine nozzles and in freshly whipped cream. The bakery was prohibited from selling any fresh cream products until further environmental samples were negative for *Salmonella* after thorough cleaning and disinfection. The business is now using only disposable piping bags. Other salmonellosis cases notified in 2012 with MLVA type 3-9-9-12-523 and the related profile 3-9-8-12-523 were interviewed to determine if they had consumed food from this bakery. Nineteen additional cases reporting eating food from the bakery in their exposure period (and these cases knew of another 18 people who ill but not confirmed with salmonellosis). No further cases linked to this bakery were reported after the NSWFA intervention. (SSW201203).

2. *Salmonella* Typhimurium (MLVA type 3-10-7-13-523) infection associated with a bakery

Two complaints were made after two people suffered gastrointestinal illness after eating products purchased from a bakery on 13 April 2012. These cases were diagnosed with salmonellosis after submitting stool specimens for laboratory confirmation. Additional cases with the same MLVA type were interviewed and a total of 12 confirmed *Salmonella* (11 cases MLVA type 3-10-7-13-523 and 1 case MLVA type 3-9-8-14-523) and 2 clinical cases reported eating from the bakery in their exposure period. The single case (MLVA type 3-9-8-14-523) reported eating a sausage roll, the others had a variety of rolls and sandwiches containing meat and/or salad items, consumed between 11 and 17 April. The NSWFA investigation revealed that food for the bakery was prepared at home and transported to the shop. Foods were not held at an acceptable temperature and the premise was lacking appropriate sanitiser. Sampled foods were found to have

unacceptable growth of coliforms but no *Salmonella* was detected. The NSWFA prohibited the sale of all goods with the exception of bread until a subsequent inspection was passed where the defects had been corrected. (NSCC31173)

3. *Salmonella* Typhimurium 170 (MLVA type 3-9-7-12-523) infection associated with a restaurant

A PHU investigated 3 family members who returned positive *Salmonella* Typhimurium results from stool. All 3 were children, with the 2 parents remaining well. Symptoms of abdominal cramps, vomiting and diarrhoea began on 19 May 2012 and lasted for ten days. The family ate at a restaurant on the evening of 18 May 2012 and shared garlic bread, consumed different main meals and shared a 'Tasting Platter of Desserts'. The local council inspected the restaurant and confirmed one of the desserts was a raw egg ice-cream. The restaurant received eggs from a local unlicensed egg producer. The NSWFA inspected the egg farm and swabs of the egg shed and chicken faeces were positive for *Salmonella* Typhimurium (MLVA 5-15-14-0-490). (GS31892)

4. *Salmonella* Typhimurium (MLVA type 3-14-9-14-523) infection associated with a prison

OzFoodNet (HNE) and Justice Health NSW investigated a salmonellosis outbreak associated with a correctional facility in May. Initially it was reported that 21 people had symptoms of gastroenteritis over a three day period. A review of line listed data collected by the facility identified 3 people with laboratory confirmed *Salmonella* Typhimurium MLVA profile 3-14-9-14-523 (no historical phage type association). However the majority of cases on the line listing had mild symptoms of short duration and were not confirmed *Salmonella* cases or likely *Salmonella* cases (clinically). The 3 confirmed cases had tightly clustered onsets of illness (within <24 hrs), resided in separate units of the facility, did not eat together or share food, and did not socialise with each other. All confirmed cases consumed food from the facility catering service, but no high risk meals were identified in reviewing the menu for 48 hours prior to onset of illness. There were no reports of illness in other facilities in NSW where food was provided by same catering service. A council inspection found no obvious food safety failures associated with the operation of the catering service. In summary, this appears to be a point source of outbreak of likely foodborne origin; however the vehicle for the infection is unclear. (HUN0463)

5. Scombroid poisoning associated with a private meal

Three people in a family of 4 developed symptoms consistent with scombroid poisoning after consuming tuna steaks purchased and frozen on 31 March 2012 and eaten on 5

May 2012. Symptoms started 3 hours after consuming the fish. The NSWFA visited the fish market and found the premises to have adequate temperature control. Due to the length of time the fish had been stored, there was no way to confirm the conditions of storage of the fish at the time of purchase. (SSW201202)

6. *Staphylococcus aureus* infection associated with a sports event

On 2 June 2012, 22 individuals attending sports championships in Sydney became severely ill with gastrointestinal symptoms 1-5 hours after eating. Illness lasted 2-13 hours. The 22 were from a group of 40 people who ate the same meal. 35 were interviewed. All 22 ill had eaten fried rice. No other food had a significant association. It was revealed that this fried rice was from the same batch which had been prepared and allegedly hot-held from the lunch meal. The investigation suggested an emetic toxin producing organism, so stool samples were sent interstate for testing. *Staphylococcus aureus* was grown from one stool specimen and *Staphylococcus aureus* toxin was detected in another. (WS31832)

For the other five suspected foodborne outbreaks, the cause could not be established. In summary:

7. Cases of gastrointestinal illness in 19 out of a group of 25 people who attended a birthday party at a restaurant were investigated. Symptoms of vomiting and diarrhoea began 24-48 hours after the event with an average 24 hour duration of illness. Public health investigation revealed that one case was experiencing gastrointestinal symptoms before the event and prepared a cake at this time which she brought to the restaurant. Statistical analysis showed this cake to be the food vehicle for illness: OR=11.67 (CI 3.54-38.42). No stool samples were submitted so the pathogen remains unknown, although the symptom profile suggests a viral pathogen. (SESI30974).

8. Cases of gastrointestinal illness in a group of three people that shared a meal at a restaurant on 21 April 2012 were investigated. Cases developed vomiting and diarrhoea 6-18 hours after eating the meal. The cases shared a number of small dishes including sushi, grilled and fried dishes. The local council inspected the restaurant and expressed concerns about the of handling of ready to eat foods and a lack of soap at hand basins representing a cross-contamination risk but could not identify any specific source of contamination. (SES31204)

9. Cases of gastrointestinal illness in attendees of a 2-day conference on 15 and 16 May 2012 were investigated. Five of 12 people became ill with vomiting, abdominal cramps,

fever and diarrhoea within 12 hours of the conference ending. Symptoms lasted from 12 to 96 hours. Cases ate a variety of foods. No stool samples taken. The local council inspected the facility and reported they served no high risk foods. The facility was reported as clean and they followed a strict food safety scheme. The cause remains unknown. (WS31726)

10. Cases of gastrointestinal illness in a private residence were investigated. Seven of 8 people developed nausea, vomiting and diarrhoea 24-48 hours after eating home delivered pizza. The group ate a variety of pizzas and each had their own. No single pizza topping was associated with illness. The local council inspected the premise that was found to be clean and food temperatures were adequate. There were no reports of any staff illness around the time of the meal in question and no other customers had reported illness. The local council did not identify any issues that would result in the illness experienced by the group. (Ill31823).

11. Cases of gastrointestinal illness in those who attended a function at a restaurant on 7 June 2012 were investigated. Thirty-five of 250 people developed nausea, vomiting, diarrhoea and fever 24 hours after eating at the restaurant. The function was attended by a number of work place groups. The foods consumed were numerous platters with corresponding dipping sauces. The PHU conducted a web-based survey and received 52 responses of which 35 people were ill. The clinical symptoms are consistent with an outbreak of viral origin; though no clinical samples were submitted for testing. There were reports of cases having contact with people with similar symptoms prior to the event. There was a statistical association of illness in those consuming fries compared with those who did not, and with consuming beef skewers with a garlic chilli dipping sauce compared to those who did not consume it with the sauce. Due to the low response rate, the statistical associations with foods may have been due to selection bias. (NS31930)

Cluster Investigations

Since 2008, ICPMR laboratory Westmead, routinely conducts Multiple-Locus Variable number tandem repeat Analysis (MLVA) to type *Salmonella* Typhimurium to improve capacity for cluster identification. For investigation purposes, a cluster is defined as five or more isolates with the same MLVA type collected over a period of four weeks. The foodborne outbreak SSW201203 described above was identified through surveillance of *Salmonella* Typhimurium notifications by MLVA type. The top five *Salmonella* Typhimurium notifications by MLVA type in the second quarter of 2012 were:

The top five *Salmonella* Typhimurium notifications by MLVA type in the second quarter of 2012 were:

MLVA type	Associated with phage type*	Number of notifications
3-10-7-13-523	170	18
3-9-8-12-523	170	16
3-9-7-13-523	170	16
3-9-8-13-523	170	14
3-12-11-13-523	#	13

* At the time of writing of this report, phage types were not yet known for these notifications. However, in the past the recorded MLVA types have been associated with the recorded phage types in this table
 # *Salmonella* Typhimurium with this MLVA pattern has never been phage typed.

Non-foodborne Disease Outbreaks

There were 199 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the second quarter of 2012. Of these, 98 (49%) occurred in aged care facilities, 66 (33%) occurred in child care centres, 32 (16%) in hospitals and three (1.5%) in other facilities. The outbreaks affected a total of 3,662 people. There was also 1 outbreak of suspected viral gastroenteritis in the community, affecting 10 people.

In 60% (120/199) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 58 % (69/120) of the outbreaks and rotavirus was identified in 4% (5/120). In ten outbreaks, one or more pathogens were detected alongside norovirus (rotavirus in 2 outbreaks, *Clostridium difficile* in 5, *Campylobacter* in 2 and adenovirus in 2). Of the 120 outbreaks where one or more stool specimens were tested, 38% (46/120) of all results were negative for any pathogens.

There was also one gastrointestinal illness outbreak in a non-institutional situation. In summary:

The PHU were notified of an outbreak of gastrointestinal illness associated with a birthday party held at a play centre on 21 April 2012. Nine out of 12 children and 1 parent were ill. A variety of party foods were consumed by the children, the parent case only consumed lollies from a large lolly container. The most likely cause is person to person transmission. Advice was given to the play centre regarding cleaning and sanitising of contact surfaces, amenities, party rooms, service of food, and keeping a log of complaints/faecal/vomit spills. (HNE SC 07-2012)

Notes for Quarterly Report

Data for foodborne disease outbreaks was reported as received by the OzFoodNet sites on 21 July 2012. For both (suspected) foodborne illness outbreaks as well as gastroenteritis outbreaks in institutions, PHUs are required to complete a summary form within 1 month of completion of the investigation, or within 1 month of notification respectively. This means that for outbreaks reported late in June, the information in this report may not be complete.

We wish to thank and acknowledge the people who collaborated and contributed to the surveillance and control of enteric diseases in NSW in the second quarter of 2012: NSW Public Health Unit staff, NSW enterics team, Dr Jeremy McAnulty, Dr Tony Merritt, NSW Food Authority, ICPMR, IMVS, MDU, primary laboratories, local councils and the OzFoodNet team.