

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

**Second Quarter Summary, 2013
NSW/Hunter New England OFN sites combined**

July 2013



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 increased by 28% compared to the previous five-year average for the same quarter. In 2013 there were 837 notifications compared to a five-year average of 654.8 cases.

Typhoid notifications for the second quarter of 2013 were 70% higher than the five-year average for the same quarter (15 vs. 8.8 cases). Twelve of the typhoid infections were acquired overseas. The remaining 3 cases are a family group with no recent international travel. Epidemiological evidence suggests that a random shedding event from the 1st case, an asymptomatic suspected chronic carrier, was the source of the other 2 cases. The shedding event was possibly provoked by a recent course of antibiotics.

There was a decrease of 26% in notifications of **hepatitis A** in the second quarter of 2013. There were 10 notifications compared to a five-year average of 13.6 cases for the same quarter. Eight of the hepatitis A infections (80%) were acquired overseas. One case had no overseas travel but was a close contact of one of the above cases. In the final case, the cause of infection was undetermined.

There were 7 notifications of **listeriosis** in the second quarter of 2013. This was 9% higher than the previous five-year average for the same quarter (6.4). Three of these cases constituted a hospital based outbreak. The outbreak was linked to dessert items provided by a single external food vendor. An environmental sample from the vendor's manufacturing premises proved to have the same MLVA typing sequence as that of the three cases (discussed further below).

There was a very slight 0.5% decrease in **giardiasis** notifications (554 cases) when compared to the five-year average of 557 notifications for the same quarter.

There was an increase of 65% in **cryptosporidiosis** notifications. In the second quarter of 2013 there were 290 notifications compared with a previous five-year average of 176.2 cases for the same quarter. This was a continuation of a large sustained increase reported in the previous quarterly report associated with public swimming pools. Cases peaked in March and declined substantially over the second quarter to almost average levels for June.

Shigellosis notifications were decreased by 28% compared to the five year average for the same quarter (20 vs 27.6 cases). Ten (50%) cases were noted as having travelled overseas during their incubation period, 5 (25%) acquired their infection in Australia, and for 5 (25%) cases the place of acquisition was unknown. Twelve (60%) notifications were male and 5 were recorded as having male to male sex as a possible exposure route. The most common Shigella subtype (in 30% (6) of cases) was *Shigella flexneri 3a*, 5 of these were male and 3 were recorded as having male to male sex.

There was an increase of 88% in notifications of **Shiga-toxin producing E. coli (STEC)** infection. In the second quarter of 2013 there were 6 notifications, compared with a previous five-year average of 3.2 cases for the same quarter. Two stool specimens were positive for STEC O157. There was no clustering by location or time. Contact with cattle, contact with sheep manure and contact with raw kangaroo meat were suspected as the cause for 3 of these cases respectively. For 2 cases no cause was identified and 1 case was acquired overseas. One STEC case developed **haemolytic uraemic syndrome (HUS)**, this is lower than the five-year average of 2.4 cases for the same quarter.

During the second quarter of 2013, the public health units in NSW and OzFoodNet investigated 11 foodborne or suspected foodborne outbreaks. In addition, 115 outbreaks with suspected person to person transmission in institutions and 3 outbreaks of unknown transmission were investigated.

Foodborne Disease Outbreaks

Of the 11 foodborne or suspected foodborne outbreaks reported by members of the public or identified through routine surveillance of *Salmonella* data in this quarter, three were due to *Salmonella* Typhimurium, one each were due to *Salmonella* Zanzibar, *Listeria monocytogenes*, and norovirus and the others were due to unknown pathogens.

Salmonella Zanzibar

- In April, a PHU was notified of five positive cases of *Salmonella* Zanzibar. Two cases were linked to a common meal cooked by a church group and brought in to work to sell by a member of the congregation. Two cases were unable to be interviewed, but worked at the

same business and were reported to have consumed the same meal. The other interviewed case worked elsewhere and did not appear to be linked but was a poor historian. The NSWFA investigated the incident but insufficient evidence was available to determine a finding. (SSW201301)

Salmonella Typhimurium (MLVA 3-13-11-9-523)

- In April, three members of a family of four were admitted to hospital. All three were positive for *Salmonella* Typhimurium MLVA type 3-13-11-9-523. All members of the family consumed the same food. The mother remained well, and the father and children had concurrent onsets of illness. The source of the infection could not be determined. The father was a food handler and was provided with education regarding maintaining hygiene and advised to avoid work until 48 hours after symptoms ceased. (SES201303)

Salmonella Typhimurium (MLVA 3-23-23-11-523)

- A PHU was notified of Salmonellosis cases associated with a privately prepared dinner party in June 2013. Fourteen of 17 attendees became unwell following a meal that contained raw egg béarnaise sauce. In addition, three people who did not attend the dinner party but consumed the leftover food from the dinner party that consisted of the béarnaise sauce also became unwell. Five of the cases were positive for *Salmonella* Typhimurium MLVA type 3-23-23-11-523. The chef who cooked the meals for the dinner party was provided information about Salmonellosis and the risks of using raw or minimally cooked eggs in food. (SES201304)

Salmonella Typhimurium (MLVA 3-17-9-12-523)

- In April, nine cases of *Salmonella* Typhimurium MLVA type 3-17-9-12-523 that had eaten at the same bowling club were identified whilst conducting a cluster investigation of this pathogen. Four of the cases had consumed meals at the lunch service on different days and five of the cases had consumed meals at the dinner service on different nights. A wide variety of foods were consumed including Asian cuisine and other meals. An unmatched case control study was initiated. Booking lists from the bowling club were obtained. A total of 16 cases and 54 controls were recruited. The median incubation period was 48 hours and the median duration of illness was 8.5 days. Illness was not significantly associated with any single food item however inspection of the premises identified opportunities for cross contamination of multiple food items and an improvement notice was issued by the NSWFA. (HUN0470)

Listeria monocytogenes

- In April, three cases of *Listeria monocytogenes* infection were notified as testing positive for listeriosis within eight days of each other. One patient died and the other two recovered after serious illness. All three cases were inpatients in hospitals within the same local health districts during their incubation period. A public health investigation was commenced to determine whether the three cases were linked through the consumption of contaminated hospital food. The specimens were all indistinguishable by binary type (223), serotype (1/2b, 3b, 7), PFGE (4A:4:1), and MLVA (04-17-16-05-03-11-14-00-16), indicating a common source. Food and menu histories revealed that the three cases had consumed profiteroles from the same external commercial supplier on the same day. Products from this company were then withdrawn from all relevant NSW hospitals. NSW FA conducted investigations on the external commercial supplier and found that they had a profiterole test positive for *Listeria* (unspecified) prior to this incident that had not been reported at the time as this was not a requirement. Two environmental swabs from the premises tested positive for *Listeria monocytogenes*. One of these samples was indistinguishable by MLVA from that found in the cases. *Listeria innocua* was also found in swab samples at the factory site. NSW Health Service Support are tightening requirements about *Listeria* control in foods served to their patients. (SSW201302)

Norovirus in Oysters (multi-jurisdictional outbreak)

- Cases of gastrointestinal illness in two groups who ate Tasmanian oysters purchased from a fish market over the Easter long weekend (30/04/2013 – 01/04/2013) were investigated in NSW. Seven from a group of eleven ate oysters on 30 March 2013 and five developed symptoms of nausea, vomiting, diarrhoea, body aches and pains and lethargy 28-38 hours after consumption. Three people ate oysters on 31 March 2013 and all developed symptoms of vomiting approximately 24 hours later. No specimens were tested but the oysters were the same as those involved in a large multi-jurisdictional outbreak of norovirus in Tasmanian oysters (MJOI 2013 001).

Summary of the other suspected foodborne outbreaks where a pathogen could not be established:

- Cases of gastrointestinal illness in a group who ate at a takeaway food outlet in April 2013 were investigated. Three people developed abdominal cramps and diarrhoea 8-10 hours after eating chicken roll with aioli and vegetables. Symptoms lasted on average for 12 hours and no specimens were tested. NSWFA inspected the premises and found several potentially hazardous practices such as raw egg aioli and Caesar salad dressing, inadequate storage of potentially hazardous foods and inadequate hand washing facilities. Microbiological testing of the samples from the outlet excluded the raw egg aioli as the source of infection. However, *Escherichia coli* was detected in BBQ chicken and chicken roll

samples. The business was given a written warning regarding the deficiencies. Immediate steps were taken by the proprietor to address the issues and further inspection of the premises and food sample testing by NSWFA confirmed the improvements made. (NS35433)

- In June, the PHU was notified of gastroenteritis in a family group that had attended a hotel restaurant. Five from a group of six from three different households developed nausea, vomiting and lethargy following the shared meal. Median incubation was 2 hours with median duration of illness of 23 hours. The birthday was the only shared meal for this group. Foods consumed included individual serves of battered fish, hot chips and side salad with a serving of tartare sauce in a small container on the plate. Toxin mediated illness was suspected. Two clinical samples were negative for bacterial and viral pathogens. An inspection of the premises was conducted by local council with no significant issues identified. (HUN0472)
- In June, the PHU was notified of gastrointestinal illness in a group of 13 that attended a birthday at a Chinese restaurant. Five people were ill with vomiting and diarrhoea following the meal. Three cases were able to be interviewed. Incubation ranged from 5-13 hours with a short duration ranging from 3-24 hours. A variety of foods were served and all cases consumed the fried rice. Toxin mediated illness was suspected. An inspection was conducted by local council. Recommendations were made in relation to the storage time of foods and the separation of raw and cooked foods. (HUN0471)
- Cases of gastrointestinal illness in a group who attended a function at a hotel in early March 2013 were investigated. Ten out of 14 people who attended a 2-day workshop became unwell and the symptoms started on the first day of the workshop. No specimens were tested. Given the lateness of the report and the lack of detail making it impossible to determine whether the cause was foodborne, on that basis the NSW FA did not investigate further. (NS35476)
- Cases of gastrointestinal illness in a group who ate at a private dinner in June 2013 were investigated. There were five people who attended the dinner. The complainant prepared the food and suspected raw oysters as the cause. Four of the diners ate oysters. Three out of the four people who ate oysters developed symptoms of profuse watery diarrhoea and abdominal cramps 24-30 hours following consumption of the dinner. No specimens were collected. NSWFA investigated the seafood retailer and found the premise to be satisfactory and there had been no issues with the area the oysters were harvested in the recent months. The same batch of oysters was also sold in the cafe attached to the seafood retailer shop and there had been no reported illness relating to the cafe. The investigation of this outbreak was not able to determine a likely cause or mode of transmission as there was no clinical specimen collected. (NS201301)

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 HUN0470 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 2013 were:

MLVA type	Associated with phage type*	Number of notifications
3-17-9-12-523	135	66
3-9-7-13-523	170	32
3-23-23-11-523	9	31
3-9-7-14-523	170	27
3-9-8-13-523	170	19

* At the time of writing of this report, phage types were not known for these notifications. However, in the past the recorded MLVA types have been associated with the recorded phage types in this table. MLVA was also not recorded for 130 *Salmonella* Typhimurium cases at the time of writing this report.

Salmonella Typhimurium MLVA 3-23-23-11-523 (STm 9)

In June, a cluster of *Salmonella* Typhimurium with MLVA profile 3-23-23-11-523 was investigated. A total of 53 cases of *Salmonella* Typhimurium MLVA 3-23-23-11-523 were notified to NSW Health with collection dates from 14/10/2012 – 17/06/2013. Three of the cases were ACT residents. A sample from a family member of one of these cases has been determined to be phage type 9. This MLVA profile is a novel pattern that has not been seen previously in NSW . Cases were predominantly male (56%) with a median age of 30 years (range 2-87yrs). Place of residence for all cases included: Hunter New England (8), South East Sydney (19), Illawarra (2), Northern Sydney (10), Parramatta (4), Nepean Blue Mountains (1), Sydney South West (3), Greater Southern (1), ACT (3), VIC (1), O/S (1). A total of 17 cases were interviewed (five of these were interviewed as part of the outbreak SES201304 above. All cases interviewed consumed eggs or dishes containing egg. This is above the expected proportion of egg consumption (63%) when compared to historical data of interviewed salmonellosis cases at the same time of year. Eight cases were able to identify the brand of eggs they purchased. The high consumption of eggs suggests that contaminated eggs were a likely transmission vehicle for this cluster. The investigation continues into the possible origins of these eggs.

Salmonella Typhimurium MLVA profile 3-17-9-12-523 (STm 135)

In May, a cluster of STm 3-17-9-12-523 was investigated. Thirty-three cases of *Salmonella* Typhimurium with an MLVA pattern of 3-17-9-12-523 were notified to NSW Health with collection dates between 26/04/2013 and 15/05/2013. This is the third clustering of this MLVA type that has been identified in NSW since May 2012, when the organism first emerged. At this time cases were also detected in QLD, Victoria and the ACT. Phage typing of previous isolates has identified this organism as phage type 135 and it has been previously associated with exposure to chicken. Cases were predominantly female (54%). The median age was 27 years (range 0-59). Place of residence included Hunter New England (18), Northern Sydney (5), Sydney West (5), South East Sydney (2), Greater Western (2) and Sydney South West (1). Nine cases were associated with an outbreak. A trawling questionnaire was completed for 23 cases, which included eight outbreak cases (HUN0470 above). Food exposure information was collated for the 15 non-outbreak cases. Foods of greatest interest include eggs (86%), sliced deli-ham (46%), apples (73%), chicken produce eaten outside of the home (60%), Asian cuisine (33%) and sushi/sashimi (26%). The proportion of cases that had consumed free range eggs, Asian cuisine and sushi/sashimi products were higher than expected, when compared to historical data of interviewed salmonellosis cases at the same time of year.

Gastrointestinal outbreaks of unknown mode of transmission

Three episodes of gastroenteritis illness in groups affecting a total of 25 people were reported to PHUs as suspected food poisoning. The investigation of these outbreaks was not able to determine a likely cause or mode of transmission, typically because the ill individuals were not able to provide enough information with details of the incident.

- Cases of gastrointestinal illness in a group who ate at a club were investigated. Alternate meals were served with entrees of caesar salad or seafood, mains of lamb or chicken and desserts of sticky date pudding or mousse. Fifteen out of sixty people who ate the meal developed nausea, vomiting and diarrhoea 10-20 hours following the event. The illness lasted for 18 hours. No specimens were tested. Further details including a contact list were unable to be obtained and the complaint was withdrawn. No further action was taken. (Ill35545)
- Cases of gastrointestinal illness in a group following a meal in a restaurant in April 2013 were investigated. Four out of ten people developed symptoms ranging from abdominal cramps, to vomiting and diarrhoea 1-5 hours following consumption of a meal at the hotel. All four cases ate a beef pie; the other attendees ate other foods. The illness lasted for 5 hours. No specimens were tested. Due to the short duration of symptoms and lack of microbiological

evidence, the complaint was referred to the local council for a routine inspection.
(SSW35618)

- Cases of gastrointestinal illness in a group who attended private birthday party in a club in April 2013 were investigated. Initially 80 out of 100 attendees at the party were reported ill with diarrhoea, vomiting and abdominal cramps 24-48 hours after eating assorted finger foods. No specimens were tested. The complainant was unable to provide a contact list or details of the foods eaten. Only the illness of six people could be confirmed and the onset times for these cases varied and viral gastroenteritis was suspected. The local council investigated the premises and found no food safety issues. (WS35756)

Non-foodborne Disease Outbreaks

There were 115 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the second quarter of 2013. Of these, 42 (37%) occurred in aged care facilities, 56 (49%) occurred in child care centres, 15 (13%) in hospitals and one each in a school and a military institution. The outbreaks affected a total of 1,612 people.

In 47% (54/115) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 31% (17/54) of the outbreaks. In two outbreaks, another pathogen was detected alongside norovirus (*Salmonella* in one outbreak and *Blastocystis hominis* in one outbreak). *Giardia*, *cryptosporidium* and *Clostridium difficile* were also each detected in one outbreak, these were thought to be coincidental findings of pathogens during otherwise viral gastrointestinal outbreaks. Of the 54 outbreaks where one or more stool specimens were tested, 63% (34/54) of all results were negative for any pathogens.

Notes for Quarterly Report

Data was reported as received by the Communicable Diseases Branch on 26 July 2013. 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 after 26 June 2013, the information in this report and in the Outbreak Register may not be complete.

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