

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

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

April 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 decreased by 5% compared to the same quarter in the previous five years. In 2013 there were 1,104 notifications compared to a five-year average of 1,157 cases.

Typhoid notifications for the first quarter of 2013 were 43% higher than the five-year mean for the same quarter (22 vs. 15.4 cases). Twenty-one of the typhoid infections were acquired overseas. For the remaining cases the country where the infection was acquired was unknown.

There was an increase of 34% in notifications of **hepatitis A** in the first quarter of 2013. There were 30 notifications compared to a five-year average of 22.4 cases for the same quarter. Twenty-one of the hepatitis A infections (70%) were acquired overseas. For eight of the remaining cases the cause was thought to be household contact with hepatitis A cases who had acquired the infection overseas. For the final case no cause could be identified, though she had consumed food brought in by visiting relatives from Nepal, though no other illness was reported in the family.

There were 11 notifications of **listeriosis** in the first quarter of 2013. This was the same as the previous five-year average for the same quarter. Two of these cases were linked to a multi-jurisdictional outbreak associated with soft cheese produced in Victoria that started in August 2012.

There was a very slight 2% decrease in **giardiasis** notifications (666 cases) when compared to the five-year average of 676.2 notifications for the same quarter. We identified no clustering of giardiasis cases by age, sex or place of residence. Single cases are not routinely followed up by public health units (PHUs).

There was an increase of 79% in **cryptosporidiosis** notifications. In the first quarter of 2013 there were 572 notifications compared with a previous five-year average of 319.6 cases for the

same quarter. The median age of cryptosporidiosis cases was 6.3 years and the mean age was 14.6 years. Ages ranged from less than 1 month to 75 years. One quarter of cases (142) reside in north-eastern Sydney. Forty three percent of all cases (247) and 61% of cases in north-eastern Sydney (86), reported swimming in public pools prior to the onset of illness. Affected pools were inspected by environmental health officers who confirmed that superchlorination was occurring regularly. A cryptosporidiosis health alert was released by the NSW Ministry of Health on 28/03/2013.

Shigellosis notifications were similar to the five year mean for the same quarter (37 vs 37.6 cases). Eighteen (49%) cases were noted as having travelled overseas during their incubation period, 12 (32%) acquired their infection in Australia, and for 7 (19%) cases the place of acquisition was unknown. Eight notifications (22%) were typed as *Shigella sonnei* biotype G, of which only two were locally acquired.

There was an increase of 127% in notifications of **Shiga-toxin producing *E. coli* (STEC)** infection. In the first quarter of 2013 there were ten notifications, compared with a previous five-year average of 4.4 cases for the same quarter. There was no clustering by location or time, and no cause identified in these cases. Three cases of **haemolytic uraemic syndrome (HUS)** were notified during the first quarter of 2013, with two stool specimens positive for STEC. This is slightly higher than the five-year average of two cases for the same quarter of the year.

During the first quarter of 2013, the public health units in NSW and OzFoodNet investigated 17 foodborne or suspected foodborne outbreaks. In addition, 136 outbreaks with suspected person to person transmission in institutions were investigated.

Foodborne Disease Outbreaks

Of the 12 foodborne or suspected foodborne outbreaks reported by members of the public or identified through routine surveillance of *Salmonella* data in this quarter, five were due to *Salmonella* Typhimurium, one each were due to norovirus, *Salmonella* Birkenhead and *Salmonella* Cerro, and the others were due to unknown pathogens.

***Salmonella* Typhimurium (MLVA type 3-9-7/8-14-523) infection associated with a restaurant**

Information was received by a PHU of three groups of people that ate at a restaurant in February 2013 and subsequently became ill with gastrointestinal illness. Seven out of a total ten people consumed fried ice cream and all of these developed illness. All cases had stool samples that tested positive for *Salmonella* Typhimurium (MLVA 3-9-7-14-523 or 3-9-8-14-523). The NSWFA inspected the restaurant and took samples of frozen and cooked fried ice-cream balls that were

made in the days following the visits by the salmonellosis cases. All sampled fried ice-cream balls tested positive for *Salmonella* Typhimurium (MLVA 3-9-7-14-523 or 3-9-8-14-523). The restaurant proprietor was warned about the risks of preparing fried ice cream with raw eggs and was fined for the sale of unsafe food. The NSWFA also inspected the egg farm that supplied the restaurant and found *Salmonella* with the same MLVA pattern on an egg rinse sample. (NC34848)

***Salmonella* Typhimurium 135 (MLVA type 3-17-9-12-523) infection associated with raw eggs**

A cluster of *Salmonella* Typhimurium (MLVA 3-17-9-12-523) notified by a hospital from a family of four was investigated by the PHU. They were admitted to a hospital with salmonellosis in March 2013. The only common risk food consumed prior to this was banana smoothies made with milk and raw eggs. They had been eating these smoothies daily. The eggs came from a small boutique free-range egg farm. The family were provided with information about salmonellosis and the risks involved with eating raw eggs and they have discontinued this practice. (SES201301)

***Salmonella* Typhimurium (MLVA type 3-27-8-21-496) infection associated with a social club gathering**

A cluster of 3 cases of an unusual MLVA was investigated by a PHU. These cases occurred in December 2012 and were members of the same social club who had shared a dinner organised for 52 attending members. Further interviews found that eight of the members had gastroenteritis symptoms with two of those requiring admission to hospital. The group ate a menu of chicken & corn soup, roast chicken, potato salad, coleslaw, commercial frozen cheesecake, lemon meringue pie and trifle. The items were prepared in members' homes or bought from a grocery store. The group were not willing to provide further information about specific foods consumed so the exact cause remains unknown. (NC201302).

***Salmonella* Birkenhead infection associated with a social club gathering**

A PHU was notified of three salmonellosis cases from a hospital. The three were part of a group who all attended a play rehearsal in February 2013. All people ate food that was re-heated left-overs from a dinner party of the previous night (held by one of the attendees). The food was held at a warm temperature in a bain-marie and served for lunch. The ill people reported nine others were also ill. The group were not keen to extend the investigation and no further action was taken. No food types were mentioned. (NC201301).

***Salmonella* Typhimurium 135 (MLVA type 3-17-9-12-523) infection cluster associated with a food court**

A PHU were notified of three people who presented to an emergency department in January 2013 who subsequently tested positive for *Salmonella* Typhimurium. Interviews were conducted and the only link found was that all three cases had consumed meals purchased at two food outlets next door to each other in a food court: a sushi outlet and a seafood outlet. One person had eaten at both locations and the other two had eaten at one place each. No link could be identified between the two premises besides physical locality. The cause of the illness remains unknown. (SES201302).

***Salmonella* Typhimurium 44 (MLVA type 3-9-8-9-523) infection cluster associated with an entertainment complex**

A PHU investigated a cluster of *Salmonella* Typhimurium 44 (MLVA type 3-9-8-9-523). The five cases were unrelated but had all eaten at an entertainment complex at the end of December 2013. This complex has four restaurants and the cases ate at two of these, though all foods eaten were different. No other common exposure was identified. The local council had inspected the restaurants in early January 2013 and found no major issues. They used a pasteurized egg product to make sauces. The cause of the salmonellosis remains unknown. (SES201302).

Norovirus infection associated with a hotel restaurant

In January, HNE OzFoodNet was notified of gastrointestinal illness in a group of five people from four different households that had shared a meal at a hotel restaurant. This was the only shared exposure for the group with no contact between the households or contact with ill people in the week prior to the meal. Three people were ill with symptoms of nausea, vomiting, abdominal cramping and diarrhoea with one or more of joint/muscle pain, headache and lethargy. The median incubation period was approximately 25 hours with duration of three days. Foods consumed included chicken schnitzel and salad. The NSW Food Authority conducted an inspection of the premises and identified ill food handlers and staff who had been unwell with symptoms of vomiting and had returned to work before the recommended 48 hour exclusion period. One clinical sample obtained from a case was positive for norovirus by polymerase chain reaction. A verbal warning was given to the hotel restaurant. (HUN0469)

***Salmonella* Cerro infection associated with Christmas lunch**

In January, two cases of *Salmonella* Cerro were detected through routine surveillance in the Hunter New England region. The cases were contacted and interviewed using standardised hypothesis generating and trawling questionnaires. The cases identified that they had attended a Christmas lunch function at a local restaurant with eight other family members prior to the onset of gastrointestinal symptoms. One case identified that their partner had also become unwell after the function. There had been no contact between cases in the week prior to onset and no contact with ill persons. The cases lived in separate households. Symptoms included nausea, vomiting, abdominal cramping, fever and muscle pain with an incubation period of approximately 8-11

hours and duration up to seven days. HNE OzFoodNet interviewed all ten family members. No further cases were identified. Foods consumed included fetta, olives, tapenade, sourdough, seafood, salad, spatchcock, ham, lamb, potato bake, pureed pumpkin, fresh asparagus, pavlova and cherry pudding with anglaise sauce. Interviewees reported that the spatchcock was undercooked.

An inspection of the restaurant was conducted by the NSW Food Authority and identified unclean food preparation and storage equipment. The Food Authority also identified that the chef had used visual inspection to determine if the spatchcock was cooked rather than the usual oven timer on this occasion. The restaurant was served with an improvement notice. (HUN0468)

For the other four suspected foodborne outbreaks, the pathogen could not be established. In summary:

- Cases of gastrointestinal illness in a group that ate at a Mexican restaurant in February 2013 were investigated. Four from a group of seven developed nausea, abdominal cramps and diarrhoea 9-12 hours after the meal. The group ate a taco platter of assorted fillings. The four who were ill were the only ones to eat the beef taco filling. Illness duration was from 12-48 hours. The NSWFA inspected the premises and found there was issues with the holding temperatures for the taco fillings held in bain maries. The temperature range of the filling at the time of inspection was from 28-61.6C. There were also lapses in proper cooling procedures, both of which could have contributed to a bacterial toxin incident that was assumed to have occurred in the case of these diners. These deficiencies were subject to an improvement order. (WS34857)
- Cases of gastrointestinal illness in a group that ate chicken burgers from a burger shop in January 2013 were investigated. Three people developed nausea, diarrhoea and vomiting after eating from a burger shop on 21/11/13. The three were work colleagues and consumed various chicken burgers at different times of the day. Onsets were 3, 6 & 9 hours after eating the burgers. No samples were submitted for testing. The complaint was referred to the local council, to recommend an inspection. (SES34634)
- Cases of gastrointestinal illness in a pair who ate rolls from a sandwich shop in February 2013 were investigated. The two developed vomiting fever and diarrhoea 40 hours after eating BBQ pork sandwiches. Onsets were 6 hours apart from each other and illness lasted 24 hours. The pair did not know each other prior to this meeting; a third person was present at the meeting but did not eat and was not ill. The complaint was referred to the local council, to recommend an inspection. (WS35000)

Unknown mode of transmission

Five episodes of gastroenteritis illness in groups affecting a total of 18 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.

In another incident the cause of the illness was found to be norovirus, but the mode of transmission could not be determined. In summary;

- Cases of gastrointestinal illness in a group that attended an 18th birthday at a restaurant in February 2013 were investigated. Fifteen out of 30 guests developed vomiting and diarrhoea 8-42 hours after the meal. The duration of illness was approximately 48 hours. Meals served were alternate veal and beef pasta. One stool sample was submitted which was positive for norovirus. Most of the group were 18 year old males from the same social group. It is believed this was a person-person spread due to staggered onsets and social mixing over several days, though a foodborne cannot be discounted. (SSW35034).

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 NC201302 described above was identified through surveillance of *Salmonella* Typhimurium notifications by MLVA type. The top five *Salmonella* Typhimurium notifications by MLVA type in the first quarter of 2012 were:

MLVA type	Associated with phage type*	Number of notifications
3-9-8-13-523	170	59
3-17-9-12-523	135	57
3-10-14-12-496	9	34
3-9-8-9-523	44	30
3-16-9-12-523	135	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 67 *Salmonella* Typhimurium cases at the time of writing this report.

***Salmonella* Typhimurium MLVA profile 3-9-8-9-523 (STm 44)**

In February, HNE OzFoodNet, in conjunction with NSW Health, commenced an investigation into a *Salmonella* Typhimurium (STm) cluster with an MLVA pattern of 3-9-8-9-523. Twenty-six cases of *Salmonella* Typhimurium 3-9-8-9-523 were notified to NSW Health with collection dates from the 24/12/2012-26/01/2013. This MLVA profile has been seen infrequently in NSW previously with cases in 2008(1), 2011(2) and 2012(3). The isolate from 2008 was phage typed and identified as Phage Type 44 which is historically associated with eggs. Cases were predominantly male (61%), with a median age of 21.5 years (range 1-88). Place of residence for cases included Hunter New England (3), Northern Sydney Central Coast (6), Sydney South West (7), South East Sydney (3), Sydney West (5), Greater Southern (1) and ACT (1).

Ten cases were interviewed by HNE OzFoodNet using a standardised Hypothesis Generating (HGQ) and Trawling Questionnaires. Two further cases were interviewed using the Salmonella Online Survey and a Trawling Questionnaire. One additional case was interviewed by the Communicable Diseases team in the ACT using a HGQ.

Foods of greatest interest included free range eggs (72%), BBQ chicken (58%) and chicken or produce containing chicken (50%). Free range egg consumption was a feature of this cluster, however no common source was identified.

***Salmonella* Typhimurium MLVA profile 3-10-14-12-496 (STm 9)**

In February, HNE OzFoodNet, in conjunction with NSW Health, commenced an investigation into a *Salmonella* Typhimurium cluster with a novel MLVA pattern of 3-10-14-12-496. 21 cases of 3-10-14-12-496 were notified to NSW Health with onset dates from 29/12/2012 – 9/01/2013. Clinical samples from previous cases have been phage typed and identified as Phage Type 9. Cases were predominantly female (57%) with a median age of 10 (range 1-88). Place of residence for cases included Sydney South West (13) and South East Sydney (8).

Thirteen cases were interviewed by HNE OzFoodNet using a standardised Hypothesis Generating Questionnaire (HGQ) and Trawling Questionnaire. A further case was interviewed using the Salmonella Online Survey and a Trawling Questionnaire.

Foods of greatest interest included fresh seafood (78%), fresh chicken (57%) and BBQ chicken (42%), however no common source was identified. Greek ethnicity was a feature of this cluster with ten cases identifying as Greek. Two cases identified as being of African origin with the remaining cases identified as being of other ethnic origins.

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

In February, HNE OzFoodNet, in conjunction with NSW Health, commenced an investigation into a *Salmonella* Typhimurium cluster with an MLVA pattern of 3-17-9-12-523. This MLVA pattern emerged in 2012 and was associated with a multi-jurisdictional outbreak investigation linked to chicken. At this time remedial action was taken by industry in relation to chicken production and cases declined. Clinical and food samples from this outbreak were phage typed and identified as Phage Type 135.

Fifty nine cases were notified to NSW Health with collection dates from 03/01/2013-21/03/2013. Twelve cases were residents of the HNE region. Collection dates for the HNE residents were 17/01/2013-12/03/2013. Cases were predominantly female (66%), with a median age of 21 (range 1-56). Nine cases were interviewed by HNE OzFoodNet using standardised Hypothesis Generating (HGQ) and Trawling Questionnaires. Foods of greatest interest were any chicken (100%), eggs (88%), pre-packaged bacon (77%), beef sausages (66%) and carrots (88%), however no common source was identified.

***Salmonella* Wangata**

In January, HNE OzFoodNet, in conjunction with NSW Health, commenced an investigation into a cluster of *Salmonella* Wangata, as part of an ongoing investigation to identify the source of this *Salmonella* serovar. Twenty-two cases were notified to NSW Health from 03/01/2013-15/03/2013. Cases were a median age of 42 years (range 1-81) and 50% were female. Place of residence included Hunter New England (6), North Coast (8), Northern Sydney Central Coast (3), South East Sydney (3), Sydney South West (1) and Greater Western (1).

Seventeen cases were interviewed by HNE OzFoodNet using a Hypothesis Generating Questionnaire (HGQ) with additional environmental questions and Trawling Questionnaire. Exposures of greatest interest included close proximity to rivers/creeks (65%), lizards (53%) and dogs (40%). The investigation is ongoing.

Non-foodborne Disease Outbreaks

There were 136 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the first quarter of 2013. Of these, 49 (36%) occurred in aged care facilities, 71 (52%) occurred in child care centres, 14 (10%) in hospitals and one each in a school and a military institution. The outbreaks affected a total of 1,925 people.

In 45% (61/136) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 34% (21/61) of the outbreaks. In seven outbreaks, another pathogen was detected alongside norovirus (rotavirus in one outbreak, *Clostridium difficile* in three outbreaks, giardia in one outbreak and *Salmonella* in two outbreaks).

Of the 61 outbreaks where one or more stool specimens were tested, 61% (37/61) of all results were negative for any pathogens.

Notes for Quarterly Report

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

We wish to thank and acknowledge the people who collaborated and contributed to the surveillance and control of enteric disease in NSW in the first quarter of 2012: NSW public health unit staff, Dr Jeremy McNulty, Hunter New England Population Health team (Kim Lilly and Dr Tony Merritt), NSW Food Authority, ICPMR, IMVS, MDU, primary laboratories, local councils and the OzFoodNet team.