

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

**First Quarter Summary, 2014
NSW/Hunter New England OFN sites combined**

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Overview of Quarter

In NSW, foodborne outbreaks are identified via a range of mechanisms, including reports from the public, general practitioners (GP), and emergency departments to public health units (PHUs), 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 PHUs. These outbreaks usually require limited epidemiological investigation and often the aetiology cannot be determined.

Incidence of Foodborne Disease

Salmonellosis notifications increased by 19% compared to the same quarter in the previous five years. In 2014 there were 1,473 notifications compared to a five-year average of 1,233 cases.

Typhoid notifications for the first quarter of 2014 were 22% lower than the five-year mean for the same quarter (14 vs. 18 cases). Thirteen of the typhoid infections were acquired overseas. For the other case the source is unknown, but it is thought the infection was likely acquired from an undiagnosed overseas house-hold visitor.

There was an increase of 13% in notifications of **hepatitis A** in the first quarter of 2014. There were 27 notifications compared to a five-year average of 24 cases for the same quarter. Twenty-four of the hepatitis A infections (89%) were acquired overseas. For the three remaining cases the cause could not be identified.

There were 7 notifications of **listeriosis** in the first quarter of 2014. This was a 30% decrease from the previous five-year average of 10 for the same quarter. There were no epidemiological links between any of the cases. One case died as a result of his infection and there was one maternal case where the foetus survived.

There was a 21% increase in **giardiasis** notifications (849 cases) when compared to the five-year average of 703 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 PHUs.

There was a decrease of 64% in **cryptosporidiosis** notifications. In the first quarter of 2014 there were 143 notifications compared with a previous five-year average of 396 cases for the same quarter.

There was a 95% increase in **Shigellosis** infections. In the first quarter of 2014 there were 80 notifications, compared with a previous five-year average of 41 for the same quarter. Twenty-two (27.5%) cases were noted as having travelled overseas during their incubation period, 52 (65%) acquired their infection in Australia, and for 6 (7.5%) cases the place of acquisition was unknown. For those notification acquired in Australia 42 notifications (81%) reported male to male sex as a risk factor, 2 others had contact with a family member with shigellosis and 2 were part of a foodborne outbreak detailed below (see outbreak SSW201401 below). No known risk factors were identified for the remaining 6 cases. The increase seen this quarter was due almost entirely to the increase in locally acquired cases.

There was an increase of 215% in notifications of **Shiga-toxin producing *E. coli* (STEC)** infection. In the first quarter of 2014 there were 17 notifications, compared with a previous five-year average of 5.4 cases for the same quarter. Five cases were linked to the foodborne outbreak below (see outbreak SES201402) but no other clustering by location or time, and no cause was identified in the other 12 cases. Three cases of **haemolytic uraemic syndrome (HUS)** were notified during the first quarter of 2014, all three cases had stool specimens positive for STEC. This is slightly higher than the five-year average of 2.2 cases for the same quarter of the year.

During the first quarter of 2014, PHUs and OzFoodNet investigated 11 foodborne or suspected foodborne outbreaks. In addition, 107 outbreaks with suspected person to person transmission in institutions 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, six were due to *Salmonella* Typhimurium, two were due to ciguatera fish poisoning, and one each were due to *shigella* and *STEC*. The other outbreak did not have a pathogen identified.

An outbreak of *Salmonella* Typhimurium (MLVA 3-9-7-12-523) associated with a bakery

In March, 10 cases of *Salmonella* Typhimurium clustered in time and location were investigated by OzFoodNet. Illness onset dates ranged from 10/03/2014 to 29/04/2014. Seven cases (70%) reported eating food from a common bakery. A range of foods were consumed including sandwiches with sliced deli meat, bread, sweets and hot foods. A food safety investigation identified a number of food handling issues including temperature abuse, cross contamination and inadequate equipment sanitization. Several foods were sampled and environmental swabs taken. Two open foods samples (sliced silverside and sliced roast beef) were positive for *Salmonella* Typhimurium with an MLVA pattern identical to the confirmed cases. It appears that

cross contamination and poor temperature control likely resulted in a number of foods being contaminated. It is uncertain how the pathogen was initially introduced into the bakery.
(HUN0483)

Two outbreaks of Ciguatera fish poisoning associated with Spanish mackerel

The PHU in Northern NSW was notified of two outbreaks of suspected ciguatera fish poisoning in this quarter. The first was in February and involved 5 people developing symptoms of extremity numbness, tingling, diarrhoea, vomiting, nausea, myalgia, hypotension, bradycardia, cold to hot sensation both hands. A professional fisherman had caught three Spanish mackerel which were sold through a local seafood co-op. Two fish were served to employees at a local restaurant. The other fish was removed from sale at a Sydney restaurant on advice from the NSWFA, prior to any being consumed. The second incident occurred in March, with a recreational fisherman who caught a 25.7kg Spanish mackerel who gave portions of it to friends. Seven people in total were affected by ciguatera fish poisoning symptoms. Advice was issued locally in Northern NSW and via the NSWFA for fishers to avoid eating Spanish mackerel above 10kgs, to reduce the risk of ciguatera poisoning as the toxin is concentrated as it moves up the food chain so large predator fish that feed in warm ocean waters are potential carriers of large amounts of ciguateratoxin.

Salmonella Typhimurium (MLVA type 3-17-10-11-523) infection associated with Vietnamese rolls

A PHU was notified of two people who had gastrointestinal illness after eating Vietnamese rolls from a cafe on 24 January 2014. The PHU conducted case finding via emergency department notifications and of *Salmonella* notifications and identified 24 people (16 *Salmonella* Typhimurium with MLVA 3-17-10-11-523 cases and another 8 symptomatic cases) with gastrointestinal illness after eating at this cafe on either 23 or 24 of January. The NSWFA inspected the premises on 29/1/2014 with most procedures satisfactory and commercial mayonnaise in use, however sanitiser was not in use for utensils and equipment. Food samples were taken and the pate was positive for *Salmonella* Typhimurium with MLVA 3-17-10-11-523. The pate was made on site and it is possible the chicken liver was not cooked to a temperature necessary to kill any *Salmonella* present, so may have been the source of the salmonellosis.
(SSW38921)

Salmonella Typhimurium (MLVA type 3-16-9-12-523) infection associated with Vietnamese rolls

An increase in *Salmonella* notifications from late February was noted in a particular area of East Sydney. Initial case interviews identified a Vietnamese bakery as the possible source. Forty salmonellosis cases who were residents in this area were followed up. Twenty-three *salmonella* Typhimurium cases (MLVA 3-16-9-12-523) were identified as well as at least three clinical cases

who reported consuming rolls from 19 to 22 of February 2014. Cases reported different fillings in the rolls but almost all reported mayonnaise. The NSWFA inspected the premises on 6 March 2014 and reported that raw egg mayonnaise was in use. A prohibition order was served on serving pork and salad rolls until identified cleaning issues were addressed and use of raw egg mayonnaise ceased. Two different brands of eggs were reportedly used to make the mayonnaise and no sampling on farm was undertaken at the time. (SES201401).

***Salmonella* Typhimurium (MLVA type 3-24-12-12-523) infection associated with Caesar salad**

A PHU was notified by GP of a patient with a *Salmonella* infection. The patient had presented to the doctor after experiencing diarrhoea and stomach pains following consumption of chicken Caesar salad at a café. Another person ate the same meal with the case and was also ill. NSWFA inspected and found raw egg was used in the salad dressing. Other minor issues with cleaning and sanitising were also found. Samples were taken (2 weeks after poisoning event) but all were negative. The likely cause was the raw egg dressing and the café switched to commercial mayo and addressed the other issues identified. The farm origin of the eggs used will be sampled as part of the NSWFA individual verification program later in 2014. (SSW38910)

***Salmonella* Typhimurium (MLVA type 3-10/11-7-12-523) infection associated with raw egg mayonnaise**

A PHU was notified of eight people from a group of sixteen who developed gastrointestinal illness after eating food prepared during a cooking class on 11/02/2014. Six students, 2 staff members and 2 family members who ate left overs became unwell. Five of these returned positive *Salmonella* Typhimurium specimens, four with the MLVA 3-10-7-12-523 and one with 3-11-7-12-523. All cases consumed the various fish dishes with a raw egg mayonnaise. NSWFA traced back the eggs to a producer and inspected the egg farm. *Salmonella* was detected on environmental swabs at the egg farm including one boot swab of the egg laying shed with STm with the same MLVA of these cases, however the farm was found to be in very good running order and no further improvements were suggested. (NS39137)

***Salmonella* Typhimurium (MLVA type 3-12-13-9-523) infection associated with a cruise shop**

A cluster of 3 cases of STm with MLVA 3-12-13-9-523 were identified through routine surveillance. All three cases had been passengers on the same pacific cruise from 29/12/2013 to 10/01/2014. Disease onsets were between 07/01/2014 and 12/01/2014. All three cases were interviewed. Only one had consumed food off the ship and there were no common activities or non-food exposures identified. All 3 cases had eaten eggs every day on the cruise, and these were usually served runny. Routine on board surveillance identified 27 guests with gastroenteritis

but investigation by the cruise staff did not suggest a point source outbreak and no samples were taken for the remaining cases. (HUN0482)

***Shigella Sonnei* biotype F infection associated with a function**

A PHU became aware of a cluster of employees with gastrointestinal symptoms after attending a catered training event on 27 February 2014, when following up a Shigellosis case. There were approximately 50 staff members in attendance but not all ate the food provided. An online survey was conducted and fifteen attendees who had consumed the food completed the survey. Seven of these had experienced gastrointestinal symptoms and 2 were diagnosed with *Shigella Sonnei* biotype F. No specimens were collected for the five others who had symptoms. One person was admitted to hospital after this event although no stool tests had been collected. The Food Authority conducted an inspection of the catering company that supplied the food and found no major concerns. The facility reported no staff illness. Another company had also been provided with food by the same caterers on the 26, 27 and 28 of February. Those attending the training were also asked to fill in an online survey relating to food items eaten and gastro-intestinal symptoms. Twelve out of fourteen attendees responded to the survey. Out of this group, two individuals reported experiencing gastro-intestinal symptoms after eating the food provided by the catering company but no samples were taken to confirm the illness. The food served to the groups included sandwiches and some hot finger foods, though from the surveys no food items showed an association with illness. (SSW201401)

STEC infection associated with a take away food store

A PHU was notified of STEC cases from the same local health district. Interviews with the cases revealed a common take away food premises that sold kebabs and pide. A total of 5 cases were notified with the serotype O157-H (Stx genes 1 & 2 positive). One further symptomatic case was reported by a doctor but no stool specimen was taken. Foods were consumed between 4/1/2014 and 17/1/2014 and included a mix of items and no one common ingredient. The kebab shop was closed on 17/1/2104 by the NSWFA and food and environmental samples were taken. The results of the samples were negative, but numerous hygiene and process breaches were noted on the inspection that could have led to cross-contamination of foods eaten that did not undergo a final kill step. The business was closed until it could satisfy the requirements of improvement notices regarding the proper handling and cooking of shaved rotisserie meat, ensuring meat handling utensils are not a source of cross-contamination risk and are routinely cleaned and sanitised, ensuring adequate temperature controls are in place and that repair and maintenance work was undertaken. (SES201402)

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

Gastroenteritis infection associated with a shower tea

On 10/02/2014, a PHU was notified of a suspected outbreak of gastroenteritis following a shower tea party at a private residence. Twelve of the 37 guests were ill with symptoms of vomiting and diarrhoea; 83% of cases were female. Symptom onset ranged from 09/02/2013 to 10/02/2013. The median incubation and duration of illness was 36 and 24 hours respectively. No clinical specimens were provided for testing. No prior illnesses were identified. Multiple snack foods were served during the shower tea, however, no food exposure information was available. (HUN0481)

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 top five *Salmonella* Typhimurium notifications by MLVA type in the first quarter of 2014 were:

MLVA type	Number of notifications
3-17-9-11-523	77
3-17-10-11-523	69
3-16-9-11-523	61
3-16-9-12-523	49
3-9-7-12-523	42

* MLVA was also not recorded for 43 *Salmonella* Typhimurium cases at the time of writing this report.

***Salmonella* Typhimurium MLVA profile 3-16-9-11-523**

In February, an investigation into a cluster of STm with the MLVA pattern 3-16-9-11-523 commenced. A total of 38 cases were notified to NSW Health from 01/02/2013 to 22/01/2014. Thirty-four of these cases were notified between 18/11/2013 and 22/01/2014. A total of nine cases were interviewed. Six cases (66%) were male and the median age was 31 yrs (range 4-84 yrs). Place of residence included Hunter New England (3), Northern Sydney Central Coast (1) and Sydney West (5). All of the cases in this cluster had consumed fresh chicken in the seven days prior to the onset of illness; however brand information was not available. This is a higher than expected proportion of fresh chicken consumption when compared with previous salmonella case series investigation data.

***Salmonella* Typhimurium MLVA profile 3-17-9-11-523**

In February, an investigation into a cluster of STm with the MLVA pattern 3-17-9-11-523 commenced. A total of 29 cases were notified to NSW Health from 1/01/2014 to 31/01/2014. A

total of thirteen cases were interviewed. Cases were predominantly male (77%) and the median age was 46 years (range 2-89 years). Place of residence included Sydney West (3), Northern Sydney Central Coast (1), South East Sydney (4), North Coast (1), Greater Southern (1) and Sydney South West (3). The only commonly eaten food was fresh chicken, with 83% of cases reporting consumption of fresh chicken in the seven days prior to the onset of illness. This is a higher than expected proportion of fresh chicken consumption when compared with previous salmonella case series investigation data. Specific brand information for the fresh chicken was only available for one case. In the past (October 2013), this MLVA profile (3-17-9-11-523) was associated with an egg farm in NSW, but egg exposures have not featured this time. This MLVA is molecularly similar to the cluster described above with MLVA 3-16-9-11-523, so it is possible that the clusters are related to a similar origin, most likely associated with chicken meat.

Non-foodborne Disease Outbreaks

There were 107 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the first quarter of 2014. Of these, 36 (33.6%) occurred in aged care facilities, 66 (61.7%) occurred in child care centres, 3 (2.8%) in military facilities and 2 (1.9%) in hospitals. The outbreaks affected a total of 1,317 people.

In 38% (41/107) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 20% (8/41) of the outbreaks. In one outbreak, *Clostridium difficile* was detected alongside norovirus. In other outbreaks, *Clostridium difficile* (one outbreak), giardia (one outbreak), cryptosporidium (one outbreak) and *Salmonella* (two outbreaks) were detected in individual peoples stool specimens; however the epidemiology of the outbreaks was more consistent with a viral gastroenteritis outbreak and these pathogens were likely coincidental findings in individuals rather than the cause of the outbreaks. Of the 41 outbreaks where one or more stool specimens were tested, 71% (29/41) of all results were negative for any pathogens.

Notes for Quarterly Report

Data was reported as received by the Communicable Diseases Branch on 23 April 2014. 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 23 March 2014, the information in this report and in the Outbreak Register may not be complete.

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