

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

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

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Overview of Quarter (October to December 2014)

In NSW, gastroenteritis and foodborne outbreaks are identified via a range of mechanisms, including reports from the public, general practitioners, institutions such as residential care facilities and child care centres, emergency departments, analysis of surveillance data, and reports to the NSW Food Authority's (NSWFA) Consumer Complaints Line to public health units. 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 Gastrointestinal Disease

Salmonellosis notifications were 32% higher than the previous five-year average for the same quarter (figure 1). In the fourth quarter 2014 there were 1,087 notifications, which is the highest count of salmonellosis notifications for this period (the previous five-year average was 820 cases) since reporting began in 1991.

There was a 56% increase in **giardiasis** notifications (729 cases) when compared to the five-year average of 466 notifications for the same quarter (figure 1). No clustering of giardiasis cases by age, sex or place of residence was identified. Single cases are not routinely followed up by PHUs.

There was an 8% increase in **cryptosporidiosis** notifications when compared with the previous five-year average for the same quarter (123 vs. 113.6, figure 1). No clustering of cryptosporidiosis cases by age, sex or place of residence was identified.

Shigellosis notifications were similar to the five-year average for the same quarter (39 vs. 37.6 cases, figure 2). Eleven (28%) cases reported travelling overseas during their incubation period, 23 (59%) acquired their infection in Australia, and for five (13%) cases the place of acquisition was unknown. The majority (22, 96%) of the locally acquired cases were male, with 18 (82%) of these recorded as having male to male sex as a possible exposure route, one (4%) acquired their infection from a household member, and three (14%) exposure was unknown. The female locally acquired case acquired her infection from a household contact. The most common *Shigella* subtype was *Shigella sonnei* G which was identified in 24 (62%) cases.

Typhoid notifications for the fourth quarter of 2014 were 23% higher than the five-year average for the same quarter (13 vs. 10.6 notifications, figure 2). Eleven of the typhoid notifications likely

acquired their infections overseas. The remaining two cases had not travelled and their route of infection could not be determined.

Notifications of **hepatitis A** in the fourth quarter of 2014 were 44% higher than the five-year average for the same quarter (25 vs. 17.4 notifications, figure 2). Twenty three of the hepatitis A notifications (92%) acquired their infections overseas. One case was a secondary case from his wife who had acquired her infection overseas. The source of the last case could not be determined.

Notifications of **hepatitis E** were 33% higher in the fourth quarter of 2014 compared to the five-year average for the same quarter (4 vs. 3 notifications, figure 3). Two of the hepatitis E notifications (50%) acquired their infection overseas. Two cases were locally acquired and both had a history of consuming pork products from different sources.

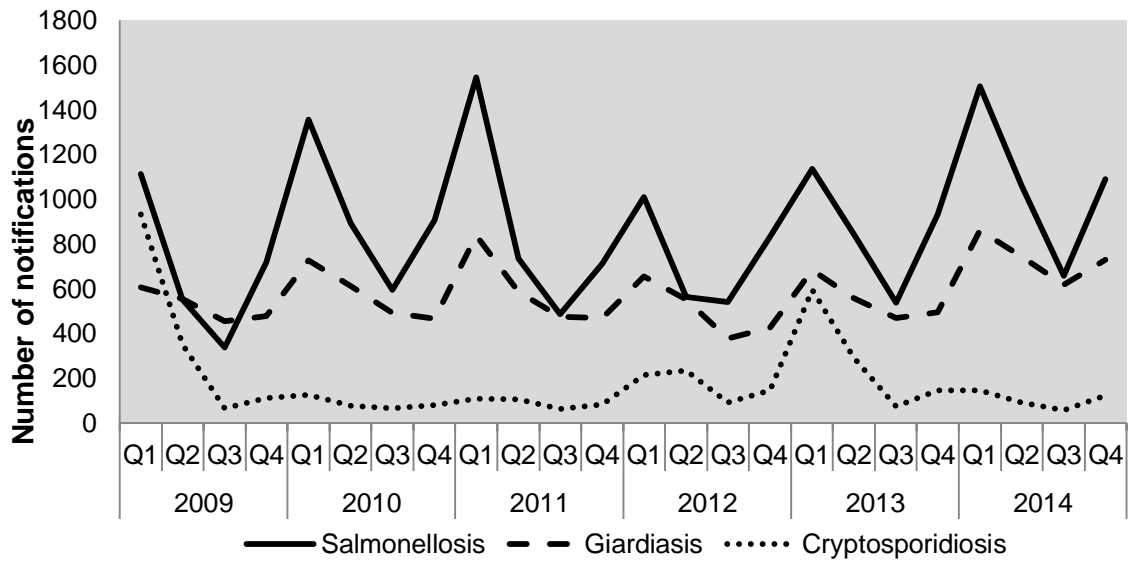
There were five notifications of **listeriosis** in the fourth quarter of 2014, which was 26% higher than the previous five-year average for the same quarter (5 vs. 3.8, figure 3). The cases did not have any common exposures and had different molecular typing results. One (20%) of the listeria cases died due to their infection.

Shiga-toxin producing *E. coli* (STEC) notifications were 32% lower in the fourth quarter of 2014, compared with the previous five-year average for the same quarter (3 vs. 4.4 notifications, figure 3). Two of these STEC cases were also notified with **haemolytic uraemic syndrome (HUS)**. The two HUS cases in this quarter represented a 67% increase in cases compared to the five-year average (1.2 cases) for the same quarter.

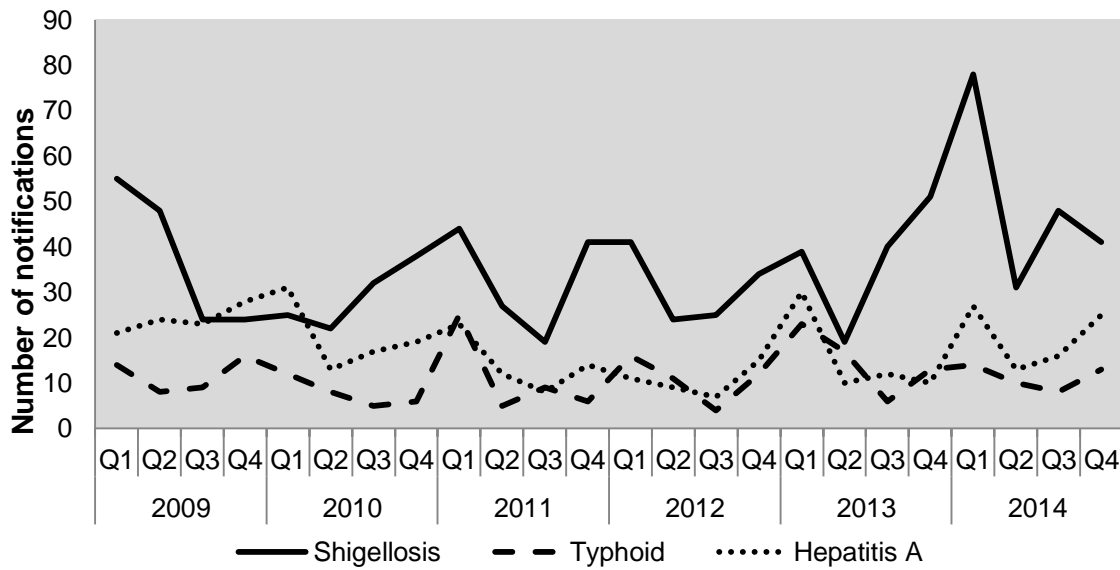
Outbreak investigations

During the fourth quarter of 2014, the public health units in NSW and OzFoodNet investigated 11 foodborne or suspected foodborne outbreaks. In addition, 150 outbreaks with suspected person to person transmission were investigated.

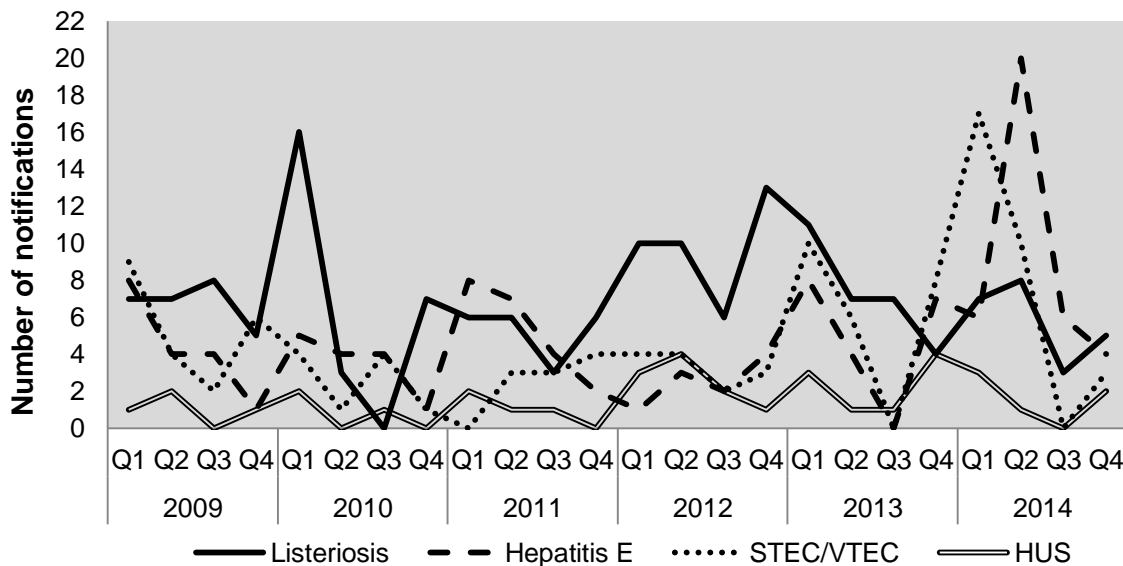
Figures 1-3. Counts of notifications of enteric disease for each quarter of each year, 2009-2014



1.



2.



3.

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, October to December 2014, nine were due to *Salmonella* Typhimurium, one was due to *staphylococcus aureus* and the other had an unknown aetiology.

***Salmonella* Typhimurium (MLVA type 3-12-12-9-523) infection associated with a self-serve food bar**

An outbreak was identified on 13 October 2014 following the notification by a general practitioner who informed the public health unit of three people who became ill after eating at a self-serve food bar. All three were positive for *Salmonella* Typhimurium (MLVA 3-12-12-9-523). Further interviews with *Salmonella* Typhimurium (MLVA 3-12-12-9-523) cases identified a total of 13 people who had eaten there between 3 October 2014 and 5 October 2014 and became ill 1-4 days later. The items eaten were a selection of foods from bain-marie self-serve counters. No food was common to all cases. The NSWFA inspected and found safe-food practice deficits such as inadequate food hot holding temperatures and inadequate sanitisation. These were subject to an improvement notice. This MLVA has previously been associated with eggs and egg outbreaks, eggs were an ingredient of several of the dishes served but were not common to all items eaten. Considering the lack of sanitisation observed, cross-contamination is a possible route of infection. (SES42075)

***Staphylococcus aureus* outbreak associated with a tour group**

An outbreak of acute gastrointestinal illness was investigated in members of a tour group in October 2014. Eleven of the 27 presented to an emergency department with symptoms, of which four were hospitalised. Symptoms were diarrhoea and vomiting (all afebrile). The group had flown from the Gold Coast that morning and had consumed sushi rolls prepared from a Queensland restaurant at 7.30am. Onsets began from 11.30am and all developed vomiting within 10-20 minutes of each other. All symptoms ceased by 4pm. Three stool samples were tested and all were negative for norovirus and on microscopy. Samples were later tested for *Staphylococcus aureus* enterotoxin and were found to be positive. Queensland environmental health officers conducted an inspection of the restaurant. Hygiene deficits were noted included hand washing was only performed with hand sanitiser, not soap and water. Surfaces and utensils also showed inadequate cleaning and sanitising. Swabs of kitchen surfaces were positive for *Staphylococcus aureus* and bacillus cereus. Boiled rice was tested and was negative. Contaminated sushi from this restaurant was the likely source of these cases' illness. (LIV201401)

Salmonella Typhimurium (MLVA 3-9/10-8-12-523) outbreak in Taree

On 8 December 2014, Hunter New England Population Health noted an increase in salmonellosis cases reported from Taree and its surrounding area. A total of 16 confirmed, probable and secondary cases were identified. The 14 confirmed cases were infected with *Salmonella* Typhimurium (MLVA 3-9/10-8-12-523). Illness onset dates for confirmed cases ranged from 26 November – 11 December 2014, ages ranged from 14 – 81 years (median 34 years), 50% were female. Initial case interviews identified two restaurants of interest. The NSW Food Authority inspected both restaurants and took several environmental swabs and food specimens. *Salmonella* Typhimurium (MLVA 3-9-8-12-523) was isolated from an environmental swab and from a raw beef sample at one of the restaurants. Cross contamination was suspected based on the restaurant inspection and case interviews. The NSW Food Authority is conducting a trace-back on chicken and eggs supplied to the restaurants. The investigation is ongoing. (HUN0488)

Salmonella Typhimurium (MLVA 3-9-8-11-523) in Old Bar

Five residents and five staff from a special needs home in Forster shared a common meal in Old Bar, NSW, on 17 December 2014. Three residents reported illness onsets on 18 December 2014 and one staff member (suspected secondary case) on 22 December, 2014. One resident was infected with *Salmonella* Typhimurium (MLVA 3-9-8-11-523) and one was PCR positive (without culture). Recall issues and shared dishes made specific food exposures difficult to ascertain. The NSW Food Authority inspected the venue and is conducting trace-back activities. The investigation is ongoing. (HUN489)

Salmonella Typhimurium (MLVA 3-9-8-12-523) in Forster

Three individuals ate a single common meal at a restaurant in Forster on 19 December 2014. All three became ill on 20 December 2014. One case was positive for *Salmonella* Typhimurium (MLVA 3-9-8-12-523) and one was PCR positive (without culture). Satay chicken and fried ice-cream were common foods eaten by cases. NSW Food Authority inspected the venue and is conducting trace-back activities. The investigation is ongoing. (HUN0488)

Salmonella Typhimurium (MLVA 3-12-11-14-523) outbreak at a Resort in the Hunter Valley

A total of 38 cases were associated with an outbreak at a Resort in the Hunter Valley. There were 18 confirmed cases infected with *Salmonella* Typhimurium (MLVA 3-12-11-14/15-523); 16 probable cases (acute gastrointestinal illness with no clinical specimen) and four possible secondary cases. Illness onset dates for confirmed and probable cases ranged from 20 September– 15 October and exposure dates from 19 September 2014 – 15 October 2014. There were six distinct clusters within this exposure time frame. The largest cluster (n=20) occurred

over the weekend of 19-21 September 2014. Chocolate milk was implicated as the probable source of infection (RR 29, $p < 0.05$). Chocolate milk was not associated with any of the subsequent clusters. Several meals of interest were identified; however, no common food, ingredient, food handler or kitchen utensil was implicated. The NSW Food Authority conducted three inspections and took multiple food and environmental samples. Only one sample (shrimp) was positive, this sample was positive for the outbreak strain (*Salmonella* Typhimurium MLVA 3-12-11-14-523). This finding is likely the result of cross contamination within the kitchen. A blender used to mix raw eggs/chicken as well as the chocolate milk is suspected as the source of contamination over the weekend of 20-21 September. It is also possible the blender seeded contamination of other foods resulting in ongoing transmission. The blender was swabbed/tested three times and was negative for *Salmonella* on all three occasions. The original source of infection remains unknown. (HUN0486)

***Salmonella* Typhimurium (MLVA 3-12-12-9-523) infection associated with a food market**

The PHU was notified by a general practitioner of gastrointestinal illness in four from a group of 15 people who ate at a food market in October 2014. The four ill ate from different food stalls at the event and did not share food. Two of the cases have been confirmed *Salmonella* Typhimurium (MLVA 3-12-12-9-523). The cases claimed to have not eaten together at any other time. The food stalls did not share food, with some dishes prepared off site in restaurants. No other complaints had been received by the local council and the event was over at the time of investigation so no inspections were possible. The cause of the illness remains unknown. (SSW201403)

***Salmonella* Typhimurium (MLVA 3-9-7-12-523) infection associated with a café**

A cluster of five *Salmonella* Typhimurium (MLVA 3-9-7-12-523) cases was detected in northern Sydney with collection dates in the first week of October. Interviews with these five cases revealed four had eaten at the same café between 27 September 2014 and 3 October 2014. All four reported eating a beef burger with a side salad. One case reported that the patty was undercooked. The NSWFA inspected the premises on 11 November 2014 and found there to be no deficits in hygiene practices and no raw egg products on the menu. No food samples were taken and all environmental swabs were negative for any pathogens. The NSWFA recommended an internal probe thermometer be used to ensure hamburgers are cooked to 75 degrees minimum internal temperature. (NS42411)

***Salmonella* Typhimurium (MLVA 3-10-7-11-523) infection associated with a bakery**

A cluster of 17 *Salmonella* Typhimurium (MLVA 3-10-7-11-523) cases was detected in northern Sydney with collection dates in the first three weeks of November. Interviews revealed one common food item, a chocolate mousse cake from a bakery chain. The 17 *Salmonella*

Typhimurium cases and nine other symptomatic cases consumed the cakes on nine different dates from 26 October 2014 to 16 November 2014. These had been purchased from five different locations. The NSWFA determined that all cakes were produced at a central kitchen and inspected the premises. The cake contained raw egg and had only a minimal heating step. Production of the cake was ceased until a pasteurised egg product was obtained. Samples of food and environmental swabs taken during the inspection were negative; however the eggs used in the cake were traced back to a farm, which had had the same *Salmonella* Typhimurium MLVA detected in a farm inspection in May 2014. More recent inspections of the same farm have not found any defects in egg processing. (NS42810)

***Salmonella* Typhimurium (MLVA 3-12-11-14-523) infection associated with a sports club**

A PHU investigated reports of gastrointestinal illness in members and employees of a sports club. Thirty-five of a total of 75 people developed gastrointestinal illness after consuming a meal prepared by a catering company on 25 November 2014. Symptoms began 24 hours later. Stool samples were submitted and 10 returned positive results for *Salmonella* Typhimurium (MLVA 3-12-11-14-523). Those ill all consumed a lamb ragout. The NSWFA inspected the caterers on 1 December 2014. Leftovers at the sports club venue tested positive for *Salmonella* Typhimurium with the same MLVA, as did a sample of cooked pork and a floor swab of the cool room of the caterer. It remains unclear how the food became contaminated as the cooking step of the dishes served would have been sufficient to kill any *Salmonella* present at that stage. The contamination is suspected to be due to post cooking cross-contamination of the batch served to this sports club. The same product served to other groups did not cause any illness. (CAM201401)

***Salmonella* Typhimurium (MLVA 3-17-9-11-523) infection associated with a restaurant**

A PHU received notifications of salmonellosis in three different groups who had all consumed food at a restaurant on 6 and 7 December 2014. Approximately 19 people were reported to be ill, with 14 of these confirmed with *Salmonella* Typhimurium (MLVA 3-17-9-11-523). The foods consumed are a selection of Chinese dishes including fried rice, chicken dishes, and pork dishes, but no food was consumed by all cases. The NSWFA inspected the premises and found a number of issues including many avenues for possible cross-contamination, such as no evidence of hand washing. Food samples taken were negative for salmonella but some environmental samples (a cutting board and a cold room floor swab) were confirmed *Salmonella* Typhimurium (MLVA 3-17-9-11-523). The source of the infection remains unknown. The business was required to enhance their hygiene practices. (LIV201402)

Gastroenteritis outbreak associated with an aged care facility

A PHU investigated reports of acute gastrointestinal symptoms in eight residents at an aged care facility with onset dates on 21 September 2014. Illness onsets were closely clustered within several hours of each other. All the cases reported eating a common roast beef meal several hours before their illness onset. One stool and one vomitus specimen was submitted for laboratory testing. The stool specimen was negative for enteric pathogens and the vomitus specimen was not processed by the laboratory. Toxin testing was not undertaken. The NSWFA investigated and identified a number of issues such as the reheating of food (including the roast beef consumed several hours prior to illness onsets), unclean kitchen equipment and inadequate cooking and cooling temperatures. It is likely the cause of the outbreak was due to a toxin produced in food that was not subject to proper temperature control, however no microbiological evidence was available to confirm this. The aged care facility was directed to improve the deficits noted on inspection. (HUN0487)

Non-foodborne Disease Outbreaks

There were 147 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the fourth quarter of 2014. Of these, 62 (42%) occurred in aged care facilities, 70 (48%) in child care centres, 11 (7%) in hospitals and one each in a school, military institution, disabled care facility and a residential care facility. The outbreaks affected a total of 2,141 people. There were also three reports of viral gastroenteritis in community settings.

In 48% (70/147) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 64% (45/70) of the outbreaks and rotavirus was identified in 10% (7/70) of the outbreaks. In six norovirus outbreaks, other pathogens were also detected alongside norovirus. Of the six outbreaks, *Clostridium difficile* was identified in four, while rotavirus was identified in two outbreaks. In the four outbreaks where *Clostridium difficile* was detected, the epidemiology of the outbreaks was more consistent with a norovirus outbreak and this pathogen was likely a coincidental finding in individuals rather than the cause of the outbreaks. Of the 70 outbreaks where one or more stool specimens were tested, 29% (20/70) were negative for any pathogens.

Gastroenteritis associated with a business function

A group of 60 people attended a professional workshop held at a hotel on 5 December 2014. A total of 36 of the attendees reported symptoms compatible with a viral gastroenteritis infection. Illness onset dates ranged from 6-9 December 2014. Symptoms of vomiting, diarrhoea, fever and nausea occurred one to four days after the workshop and lasted on average three days. Seven people reported secondary cases in their homes after they had been ill. Five cases saw a doctor but none submitted a stool specimen. Common meals were shared by the group however

interviews were limited and no food could be identified as a possible source. There was however a report of a vomiting event in the lobby of the hotel during the workshop and a single toilet for the group to use with no soap for hand washing. It is likely this outbreak was due to a viral gastroenteritis infection spread person to person transmission. (100365582)

Norovirus outbreak on a cruise

On 26 December, 2014, the NSW Food Authority notified Hunter New England Population Health of an acute gastrointestinal illness outbreak following a party cruise. The cruise took place on the evening of 21 December 2014. Of the 81 people on board, 28 become ill with vomiting and/or diarrhoea within 24-48 hours of the cruise. Two cases submitted specimens and one was positive for norovirus. Secondary transmission within case households was also reported. The cruise menu was extensive and multiple foods were consumed by the majority of cases. No analytic epidemiological study was conducted as the outbreak was consistent with viral gastroenteritis which could have been spread person to person or from an infected person to food subsequently consumed by others.

Norovirus outbreak at a hotel

A PHU were notified of gastroenteritis in a group of 74 people who attended a christening at a Hotel in Sydney on 16 November 2014. Of the group, 38 people were able to be interviewed and 28 people reported a gastrointestinal illness. The date on onset ranged from 16 November 2014 to 19 November 2014. Cases were analysed by family groups. There was more than one case of gastrointestinal illness within five family groups. Of these, the date of onset was staggered in three family groups (12 hours to 3 days). This may represent secondary transmission within families or variation in incubation period. Two samples were submitted, one of which was positive for norovirus. On interview with the cases, no one food showed a likely cause of illness. A witness reported an episode of vomiting by a child at the event. The source of the infection was likely a person, with additional person to person spread. (WS42571)

Notes for Quarterly Report

Data was reported as received by the Communicable Diseases Branch on 27 February 2015. For both (suspected) foodborne illness outbreaks as well as gastroenteritis outbreaks in institutions, PHUs are required to complete a summary form within one month of completion of the investigation, or within one month of notification respectively. This means that for outbreaks reported after 27 January 2015, 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 fourth quarter of 2014: NSW public

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