

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

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

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Overview of Quarter (July to September 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 third quarter 2014 there were 654 notifications, which is the highest count of salmonellosis notifications for this period (the previous five-year average was 496 cases) since reporting began in 1991.

There was a 36% increase in **giardiasis** notifications (614 cases) when compared to the five-year average of 450 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 a 23% decrease in **cryptosporidiosis** notifications when compared with the previous five-year average for the same quarter (55 vs. 71.6, figure 1). No clustering of cryptosporidiosis cases by age, sex or place of residence was identified.

Typhoid notifications for the third quarter of 2014 were 22% higher than the five-year average for the same quarter (8 vs. 6.6 notifications, figure 2). Six of the typhoid notifications likely acquired their infections overseas. The remaining two cases had not travelled and their likely route of infection was overseas visitors staying in their home.

Shigellosis notifications were 71% higher than the five year average for the same quarter (48 vs. 28 cases, figure 2). Fourteen (29%) cases reported travelling overseas during their incubation period, 29 (60.5%) acquired their infection in Australia, and for five (10.5%) cases the place of acquisition was unknown. The majority (25, 86%) of the locally acquired cases were male, with 21 (84%) of these recorded as having male to male sex as a possible exposure route, one (4%) acquired their infection from a household member, one (4%) from a female partner and two (8%) exposure was unknown. Of the four female locally acquired cases, two (50%) acquired their

infection from their partner and two (50%) from travel interstate. The most common *Shigella* subtype was *Shigella sonnei* G which was identified in 21 (41%) of cases.

Notifications of **hepatitis A** in the third quarter of 2014 were 14% higher than the five-year average for the same quarter (15 vs. 13.2 notifications, figure 2). Fourteen of the hepatitis A notifications (93%) acquired their infections overseas. One case had no overseas travel but had exposure to sewerage waste in his occupation.

Notifications of **hepatitis E** were 79% higher in the third quarter of 2014 compared to the five-year average for the same quarter (5 vs. 2.8 notifications, figure 3). One of the hepatitis E notifications (20%) acquired their infection overseas. Four cases were locally acquired and all had a history of consuming pork products from different sources.

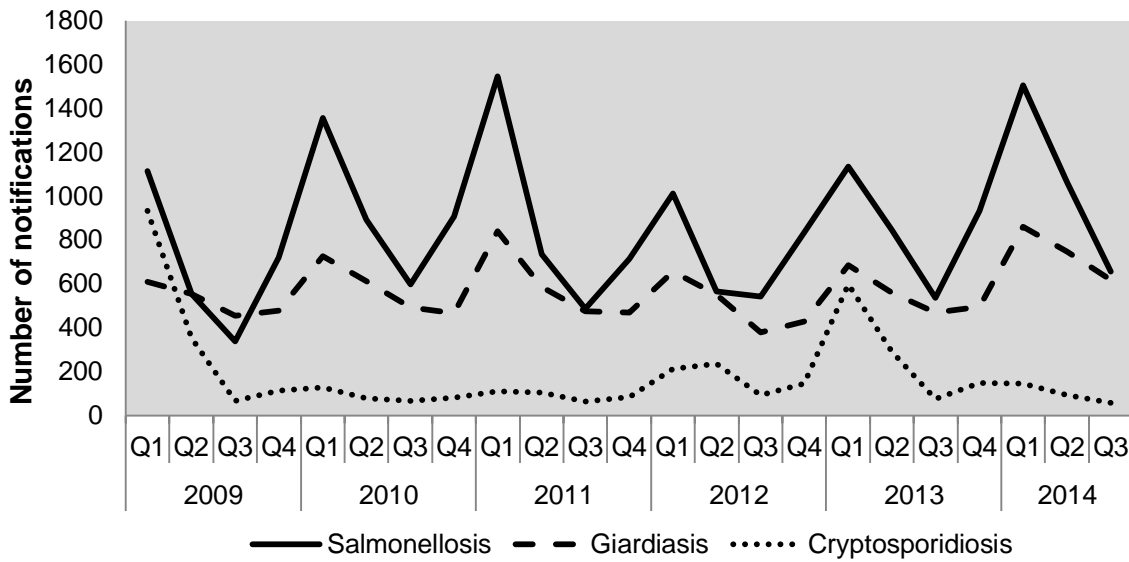
There were two notifications of **listeriosis** in the third quarter of 2014, which was 58% lower than the previous five-year average for the same quarter (2 vs. 4.8, figure 3). The cases did not have any common exposures and had different molecular typing results.

Shiga-toxin producing *E. coli* (STEC) notifications were 55% lower in the third quarter of 2014, compared with the previous five-year average for the same quarter (1 vs. 2.2 notifications, figure 3). No cases of **haemolytic uraemic syndrome (HUS)** were reported in this quarter, which is less than the five-year average of one case for the same quarter.

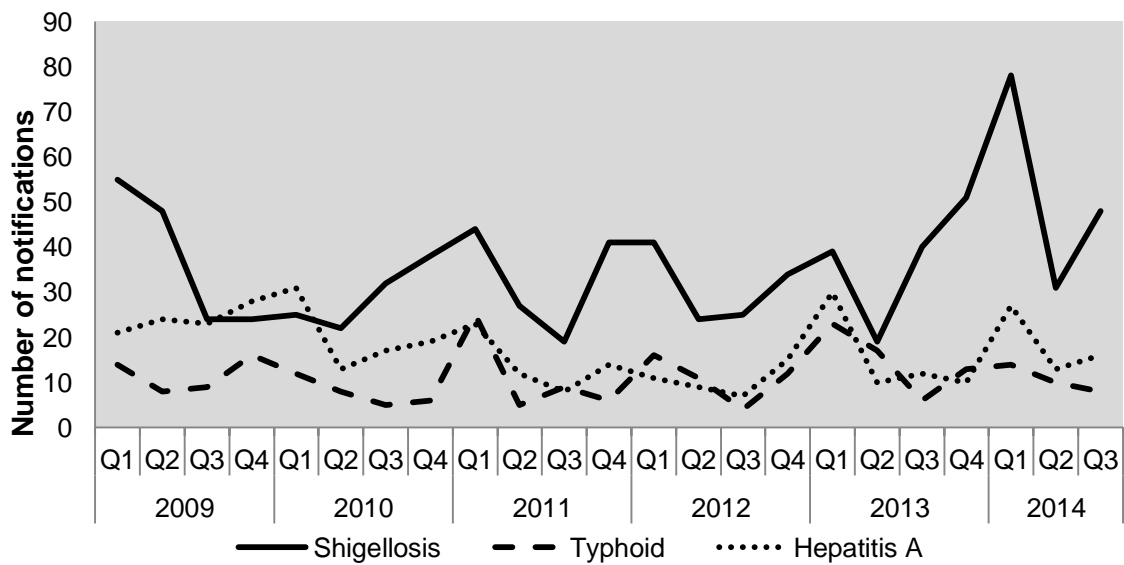
Outbreak investigations

During the third quarter of 2014, the public health units in NSW and OzFoodNet investigated 11 foodborne or suspected foodborne outbreaks. In addition, 178 outbreaks with suspected person to person transmission in institutions were investigated.

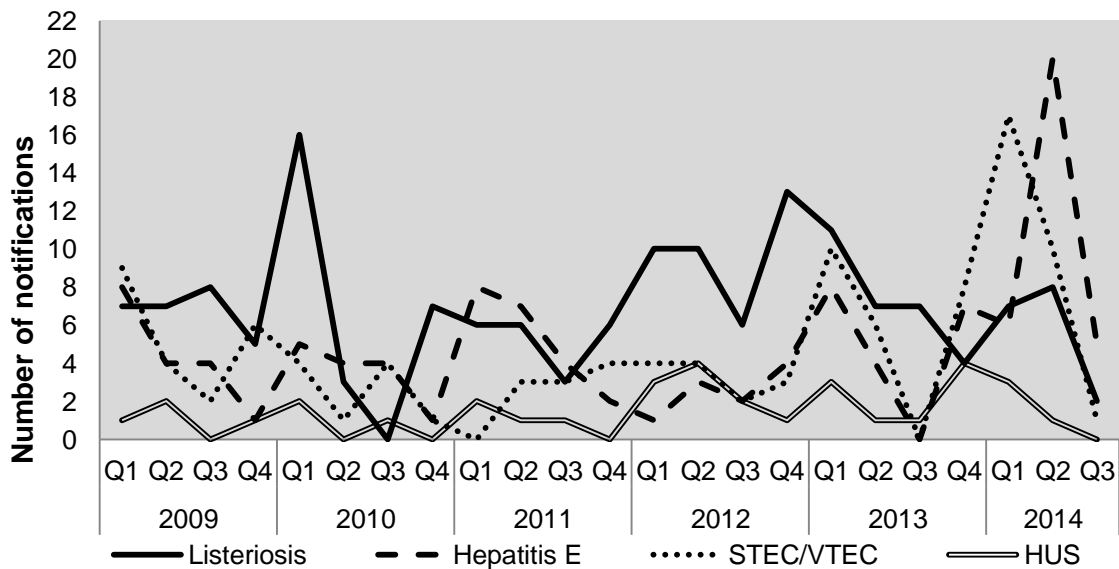
Figures 1-3. Counts of notifications of enteric disease for each quarter of each year, 2009-2014



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, July to September 2014, four were due to *Salmonella* Typhimurium, and one was due to suspected Scombroid fish poisoning. The other six had an unknown aetiology.

***Salmonella* Typhimurium (MLVA type 3-26-13-8-523) infection associated with Vietnamese rolls**

An outbreak was identified on 19 September 2014 following the notification of a cluster of 11 *Salmonella* Typhimurium cases with a MLVA pattern that had only been seen twice previously in 2014 (MLVA 3-26-13-8-523). Interviews revealed that all 11 cases had consumed Vietnamese style rolls (10) or bacon & egg roll (1) from one of two bakeries on 28 or 29 August. Both bakeries had the same name and were owned by the same company (which also owns a third outlet) but were in different suburbs. The Vietnamese style rolls all contained chicken and different salad ingredients with mayonnaise and the bacon & egg roll also included mayonnaise. The NSWFA inspected both bakeries simultaneously on 23 September and reported that raw egg mayonnaise was in use. The mayonnaise is produced daily in one store and distributed to the other stores in an esky. The NSWFA reported that there was some acidification of the mayonnaise but not enough to substantially lower the risk of *Salmonella*. Temperatures, hygiene and cleaning at all three stores were good. A large number of food and environmental samples were taken for analysis but all were negative. The business has agreed to switch to a pasteurised egg yolk product to produce their mayonnaise in the future. The NSWFA is following up with the egg supplier. (NSW201401)

***Salmonella* Typhimurium (MLVA 3-12-11-14-523) outbreak associated with a resort**

An outbreak of acute gastrointestinal illness was investigated at a resort. There were 20 cases identified, 14 of these cases were confirmed as *S. Typhimurium* with MLVA pattern 3-12-11-14/15-523. Illness onset dates ranged from 20-22 September, 2014; the median age of cases was 18 years (range 2-64 years), 75% of cases were male. A cohort study involving several defined groups who ate food at the resort was conducted (16 cases and 44 well individuals were interviewed). Chocolate milk served during the breakfast buffets on 20 and 21 September was significantly associated with illness (consumed by 15/16 cases and 1/30 well individuals; RR 29, $p < 0.05$). The only other foods that were significantly associated with illness were cereals (different types) consumed on Saturday morning (consumed by 8/11 cases and 12/26 well individuals; RR 3.9, $p 0.04$) and the beef sausages consumed on Sunday morning (consumed by 6/12 cases and 1/23 well individuals; RR 4.1, $p 0.005$). There were no egg related dishes significantly associated with illness. Cross contamination within the restaurant kitchen at the resort is suspected. A commercial stick blender used to prepare the chocolate milk was also

used to for blending raw eggs and raw chicken products. The blender was swabbed on two occasions and then sent to the laboratory for further testing. All swabs and tests did not detect *Salmonella* spp. The root cause of the contamination was not determined.(HUN0486)

Salmonella Typhimurium (MLVA 3-24-12-10-523) infection associated with a café

The PHU was notified by a general practitioner of gastrointestinal illness in 4 from a group of 5 people who ate at a café on 6 July 2014. The group ate a variety of plates which were shared. Onset for 3 of the cases occurred 12 hours after eating, the fourth case, a two year old had an onset 24 hours after that and may have been a secondary case. Stool samples were submitted by three of the cases, two of which were positive for STM (MLVA 3-24-12-10-523). The NSWFA did a joint inspection with the local council but could not find any major issues that may have led to *Salmonella* contamination. The only potential issue was food handlers not changing gloves frequently enough, which was brought to their attention. Food and environmental samples were taken for analysis but all were negative. The source of the salmonellosis remains unknown. (SES201404)

Salmonella Typhimurium (MLVA 3-25-13-10-523) infection associated with an aged care facility

A PHU was notified of cases of salmonellosis in residents of an aged care facility. There were three cases with STM (MLVA 3-25-13-10-523). These cases lived in different residential areas but all attended a catered party on 31 August 2014. A total of 22 residents and 8 staff members attended the party. The organisers identified three more attendees with gastrointestinal symptoms (two staff members and one resident). Various foods were prepared on site and served, but no single food was common to all ill. The PHU advised the centre on steps to follow to ensure a similar incident won't occur in the future. The source of the salmonellosis remains unknown. (SES201405)

Scombroid fish poisoning associated with a restaurant

The NSWFA received a complaint of illness in eight people from a group of twelve who had eaten at a restaurant on 25 July 2014. Symptoms developed prior to dessert and included hot flushes, headache, diarrhoea, vomiting and full body rash. All diners ate from a set menu including scallops, soft shell crab, prawn dish, barramundi and yellow fin tuna, a mixture of foods were consumed by cases. The NSWFA inspected the restaurant on 29 July 2014 but could find no obvious opportunity for temperature abuse. Samples of a variety of seafoods including yellow fin tuna, scallops, soft shell crab and prawns underwent histamine testing and were found to be satisfactory. The illness was suggestive of scombroid poisoning but the origin of the histamine intoxication cannot be precisely determined. (GS41116).

Aged Care Facility Outbreak

Eight residents at an aged care facility reported acute gastrointestinal symptoms 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. A toxin mediated illness is suspected. (HUN0487)

Gastrointestinal illness associated with a restaurant

The NSWFA received a complaint of gastrointestinal illness in five people from a group of fourteen who had eaten at a restaurant on 10 July 2014. The five cases developed nausea, vomiting, diarrhoea and abdominal cramps eight hours after eating. The ill cases consumed either beef or pork with vegetables or salad. The non-cases reported eating chicken or fish dishes. Symptoms lasted 24 hours and no stool samples were submitted. The NSWFA inspected the restaurant with the local council on 14 July 2014. Several raw egg products were in use (tartar sauce, mayonnaise, and aioli) and there were also cleaning issues and inadequate sanitising. The local council issued a prohibition order on the raw egg foods along with an improvement notice for hygiene defects. Samples were secured for testing but were all negative. The cause of the illness remains unknown. (NS40920)

Gastrointestinal illness associated with a restaurant

The NSWFA received a complaint of gastrointestinal illness in eight people from a group of sixteen who had eaten at a restaurant on 13 September 2014. The eight cases developed vomiting and diarrhoea eight hours after eating the meal. The eight were all children who had eaten children meals of chicken nuggets, fish nuggets, chips and spaghetti. The children had complained about the taste of the fish nuggets at the time. The children had about five episodes of vomiting and diarrhoea over half an hour. The local council did an inspection and found no major issues. No further food consumption information could be retrieved from the complainants so the cause remains unknown. (NS41741)

Gastrointestinal illness associated with a restaurant

The NSWFA received a complaint of gastrointestinal illness in four people from a group of five who had eaten at a restaurant on 23 September 2014. The four cases developed vomiting and diarrhoea 26 hours after eating. Symptoms lasted for approximately 12 hours. Foods consumed were individual sushi plates. Common foods included individual servings of cold spring rolls and

raw salmon sushi rolls. The group consisted of two families who had not associated with each other prior to this meal and reported no contact with any ill people. The NSWFA reported no other complaints had been made about this restaurant. The complaint was referred to the local council to be followed up with a routine inspection. (NS41913).

Gastrointestinal illness associated with a restaurant

The NSWFA received a complaint of gastrointestinal illness in three people from a group of five who had eaten at a restaurant on 19 September 2014. The three cases developed abdominal cramps, headache, and vomiting eight hours after eating the meal of pork belly and mashed potato. One person in the group ate this dish and was not ill. The restaurant was inspected by the NSWFA and was found to have very high standard hygiene and food safety practices. Retention samples were available and were submitted for testing and results were negative. No avenue for contamination of the food was identified and the cause of the illness remains unknown. (SSW41839)

Gastrointestinal illness associated with a restaurant

The NSWFA received a complaint of gastrointestinal illness in three people from a group of six who had eaten at a restaurant on 2 August 2014. The three cases developed nausea, vomiting and diarrhoea approximately 12 hours after eating oysters at the restaurant. This was the only common meal consumed by the guests. Of the group, only the three with symptoms consumed oysters. One case submitted a stool specimen for viral and bacterial testing which showed no pathogens. The NSWFA inspection did not identify any significant food safety or hygiene defects. They traced the oysters to the supplier and proper temperature controls were reportedly undertaken at all stages before and after shucking oysters. There were 1600 dozen oysters in the batch that the cases consumed and there had been no other complaints received by the wholesaler. The cause remains unknown. (SYD41208)

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 SES201403 described above was identified through surveillance of *Salmonella* Typhimurium notifications by MLVA type. The top five *Salmonella* Typhimurium notifications by MLVA type in the third quarter of 2014 are outlined in table 1.

Table 1: Top five *Salmonella* Typhimurium notifications by MLVA type, NSW, July to September 2014

MLVA type	Number of notifications
3-17-9-11-523	26
3-12-11-14-523	22
3-12-12-9-523	17
3-24-12-10-523	16
3-11-10-14-523	14

* MLVA was also not recorded for 16 *Salmonella* Typhimurium cases at the time of writing this report.

***Salmonella* Typhimurium (MLVA 3-17-9-11-523) cluster**

A cluster of 6 cases of *S. Typhimurium* (MLVA 3-17-9-11-523) with onset dates ranging from 8-24 July 2014 were investigated. Sixty four per cent (67%) were female and the age of cases ranged from 19–52 years (median 25 years); one case was admitted to hospital; no deaths. All cases were interviewed with the standard *Salmonella* questionnaire. Chicken was suspected as the source of the illnesses with all cases interviewed (n=5) consuming and/or handling chicken within their incubation period. All cases interviewed reported purchasing chicken from a common grocery chain. Specific brand information for the chicken purchased and consumed was limited and a trace back investigation did not identify a common supplier.

***Salmonella* Typhimurium (MLVA 3-10-8-12-523) cluster**

A cluster of four cases of *S. Typhimurium* (MLVA 3-10-8-12-523) were investigated. Two cases shared a common meal at a commercial eating establishment. The additional two cases were not related to each other or the two cases sharing the common meal. Onset dates of the cases ranged from 15–26 July 2014; 75% were female and the age of cases ranged from 20–84 years (median 46 years); one case was admitted to hospital; no deaths. The local council inspected the restaurant and noted minor infractions. The source of the outbreak was not identified.

Non-foodborne Disease Outbreaks

There were 177 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the third quarter of 2014. Of these, 89 (50%) occurred in aged care facilities, 53 (30%) in child care centres, 32 (18%) in hospitals and one each in a camp, military institution and a non-aged care residential care facility. The outbreaks affected a total of 2,645 people.

In 47% (84/177) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 62% (52/84) of the outbreaks and rotavirus was identified in 2% (2/84) of the outbreaks. In five norovirus outbreaks, other pathogens were also detected alongside norovirus. Of the five outbreaks, *Clostridium difficile*

was identified in four, while *Campylobacter* was identified in one outbreak. However the epidemiology of the outbreaks was more consistent with a norovirus outbreak and these pathogens were likely coincidental findings in individuals rather than the cause of the outbreaks. Of the 84 outbreaks where one or more stool specimens were tested, 35% (29/84) were negative for any pathogens.

Gastroenteritis associated with a business function

A group of 35 professionals attended a business function from 26 – 28 August 2014. A total of 18 of the attendees reported symptoms compatible with norovirus infection. Illness onset dates ranged from 27-30 August 2014; 65% of cases were male; median age of cases was 40 years; no cases were hospitalised. Attendees stayed at a common hotel and shared several common meals. No single meal or food of interest was identified. One of the attendees reported being ill with an acute gastrointestinal illness prior to and during the first part of the meeting. It is plausible that this individual was the index case with subsequent transmission via person to person spread, food and/or fomites.

Notes for Quarterly Report

Data was reported as received by the Communicable Diseases Branch on 20 October 2014. 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 20 September 2014, 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 third quarter of 2014: NSW public health unit staff, Dr Jeremy McNulty, Dr Vicky Sheppeard, 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.