OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia

Third Quarter Summary, 2012
NSW/Hunter New England OFN sites combined

October 2012

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 29% compared to the same quarter in the previous five years. In 2012 there were 548 notifications compared to a five-year average of 424 cases.

Typhoid notifications decreased by 44% for the third quarter of 2012 compared to the same quarter in the previous five years (4 vs. 7.2 cases). All of the typhoid infections were acquired overseas.

There was a decrease of 57% in notifications of **hepatitis A**. In the third quarter of 2012 there were 7 notifications compared to a five-year average of 16.2 cases for the same quarter. Most of the hepatitis A infections were acquired overseas; one was locally acquired but could identify no possible risk exposures.

There were 5 notifications of **listeriosis** in the third quarter of 2012. This was similar to the previous five-year average of 4.8 cases for the same quarter. A number of different subtypes were identified and there were no links between cases.

Giardiasis notifications for the third quarter of 2012 (351 cases) were 22% lower than the five-year average of 452.6 notifications for the same quarter, while **cryptosporidiosis** notifications were 28% higher (84 notifications compared with a five year average of 65.4 notifications for the same quarter). No clustering or common exposures were identified for any of these cases.

Shigellosis notifications were very similar during this quarter with 25 cases reported, compared with 25.6 cases for the five-year average for the same quarter. Thirteen (52%)

cases were noted as having travelled overseas during their incubation period, 5 (20%) acquired their infection in Australia, and for 7 (28%) cases the place of acquisition was unknown. Two of the locally acquired cases (40%) were males who reported engaging in male to male sex. These cases were not clustered by serotype.

There were two cases of **Shiga-toxin producing *E. coli* (STEC)** infection notified during the third quarter of 2012, which was similar to the five-year average of 2.2 cases for the same quarter. One of these was locally acquired but no source of infection was identified. The other was acquired overseas. Two cases of **haemolytic uraemic syndrome (HUS)** were notified during the third quarter of 2012 compared with the five-year average of 1.4 cases for the same quarter of the year. STEC was confirmed in stool of one of these cases (no sero-positive isolate could be detected). The other HUS case had no enteric pathogen detected.

During the third quarter of 2012, the public health units in NSW and OzFoodNet investigated 10 foodborne or suspected foodborne outbreaks. In addition, 303 outbreaks with suspected person to person transmission in institutions (301) and non-institutional settings (2) were investigated.

Foodborne Disease Outbreaks

Of the 10 foodborne or suspected foodborne outbreaks reported by members of the public or identified through routine surveillance of *Salmonella* data in this quarter, 3 were due to *Salmonella* Typhimurium and the other 7 were due to unknown pathogens.

Salmonella Typhimurium (MLVA type 3-27-8-21-496) infection associated with a private supplier

A cluster of nine cases of *Salmonella* Typhimurium with a novel MLVA (3-27-8-21-496) were identified with collection dates between 30 August and 6 September. PHU staff interviewed 4 of these cases and found they had consumed food that had been delivered as meals by a private individual. The meals were an egg and vegetable dish and a beef stew. These original cases as well as other salmonellosis cases with the same MLVA who were also contacted were unwilling to give information on the food provider, so no further action could be taken. The exact cause of the salmonellosis remains unclear. (NSCC201202)

Salmonella Typhimurium 170 (MLVA type 3-9-8-14-523) infection associated with a caterer

Between 13 August and 5 October 2012, 21 cases of *Salmonella* Typhimurium (MLVA 3-9-8-14-523) were notified to NSW Health. The peak of cases by date of onset (12 cases where onset date recorded) was 1 September 2012. Fourteen cases were interviewed, 6 cases (and 3 additional clinical cases) reported eating a beef, egg and mustard sandwich from a kiosk at an event on the day before their onset of illness between 30 August to 6 September. Three other cases reported eating egg sandwiches or an egg salad with mayonnaise at a catered work function on 31 August. The same catering company supplied food for both these events. A further 2 cases reported working directly or indirectly for the catering company and consumed the foods prepared. Following a complaint from one of the cases the NSW FA inspected the caterer on 18 September and again on 27 September. The sandwiches contained mayonnaise containing raw egg made by the caterer. It is possible that the all the sandwiches from 30 August to 6 September contained mayonnaise from the same batch. The caterers are now using a commercial mayonnaise. Traceback to the farm was not possible as records of egg batches were not available. (NSW33143)

***Salmonella* Typhimurium 135 (MLVA type 3-17-9-12-523) infection associated with a catered function**

In September, whilst conducting interviews for a cluster of *Salmonella* Typhimurium (MLVA 3-17-9-12-523), a potential point source was identified. A group of 49 people attended an engagement function at a restaurant in Wollongong. The menu was buffet style and a variety of poultry and meat dishes and salads. Contact details were provided for nine members of the cohort. Two from the nine people interviewed became symptomatic with nausea, vomiting, abdominal pain and diarrhoea +/- fever, headache, joint/muscle pain, 48 hours after consuming the meal. Both cases were confirmed STm 3-17-9-12-523 cases. The two cases were not otherwise known to each other. The NSWFA conducted an inspection of the premises (not operating at the time) and did not detect any problems with the restaurant. At the time of the inspection there was no raw product for sampling as the restaurant is only open on the weekends. Attempts were made by the NSWFA to conduct trace back on the chicken suppliers; however this did not yield any extra information. (HUN0466)

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

A PHU was notified of 3 residents of an aged care facility who tested positive for *Salmonella* Typhimurium (MLVA type 3-9-7-13-523) following diarrhoeal illness. Onsets of illness were the 9, 12 and 16 of August. There was no evidence of a likely food source

for the 3 residents. The NSWFA inspected the facility and found safe food service practices in operation. The PHU inspected the facility but could not identify the transmission route or any links between cases. The facility has ceased group activities at this time, increased environmental cleaning and have organised an infection control audit. The source of infection remains unknown. (SSW32768)

Cases of gastrointestinal illness in 9 of a group of 15 people that shared a meal at a restaurant on 21 July 2012. Cases developed vomiting and diarrhoea approximately 25 hours after the meal with a duration of illness from 8 to 44 hours. The PHU interviewed 12 of the attendees, 6 of whom were cases. Foods consumed included scallop soup, baked pie, cheese soufflé, lamb, eggnog (served in an egg shell), mulled wine and 3 desserts (plum pudding Alaska, pear and walnut truffle and raspberry macaroons). The people had also attended pre-dinner drinks together which included nibbles (chips, dips, salad and cupcakes). No stool specimens were submitted for testing. Although there was no epidemiological evidence to indicate foodborne disease, the NSWFA inspected the premises based on the inclusion of high risk egg menu items. The restaurant staff were aware of the risks of serving raw eggs and have now taken additional steps to ensure safer food including sterilising the eggs shells used for the eggnog and baking the meringue used in the Alaska dessert. (SESI32487)

Cases of gastrointestinal illness were reported in 3 of a group of 10 people that shared a meal at a restaurant on 19 August. The 3 ill all consumed chicken schnitzel with chips, gravy and salad with an illness onset 6 hours after eating. No other people known to the group were reported ill and no other meals had been eaten together. No stool samples were submitted and symptoms resolved after 12 hours. The illness was suggestive of a bacterial toxin in the food. The NSWFA referred the complaint to council for routine inspection. (WS32857)

Cases of gastrointestinal illness in 5 of a group of 20 family and friends that shared a meal at a restaurant on 25 August was reported. The 5 developed vomiting and diarrhoea 2-7 hours after eating a chicken in white wine sauce dish; they were the only members of the party who ate the chicken dish. The 5 ill were close family and had met on the evening prior to the party as well. Symptoms lasted a median of 32 hours. It was possible that this was a viral gastroenteritis pathogen transmitted in a family cluster, but due to the common food the restaurant source cannot be discounted. No stool samples were submitted so the cause of the groups' illness remains unknown. (SSW32901)

Two separate groups reported illness following meals in the same restaurant on the same day on 24 August . Four from 7 and 6 from 8 people were affected with abdominal cramps and diarrhoea approximately 14 hours after the meal. All cases ate the same creamy mushroom sauce. An environmental investigation was not possible as the restaurant was destroyed by fire soon after illness was reported. The mushroom sauce however was produced at a central kitchen which the NSWFA did inspect. It was found at that inspection that there were adequate food safety and hygiene controls in place to protect the respective sauce from contamination including adequate temperature control. The illness in this outbreak is suggestive of a bacterial toxin however the cause of the illness could not be identified. (SSW33083)

In September, HNE OzFoodNet investigated a gastroenteritis cluster associated with a meal consumed at a sushi train restaurant. 5/5 were affected with symptoms of nausea, vomiting, diarrhoea, abdominal cramping and joint/muscle pain. The incubation period was approximately 33 hours, duration up to 32 hours. The symptom profile, illness onset and duration of illness were suggestive of Norovirus, however one sample collected from a recovered case negative for all pathogens including Norovirus by EIA. A variety of food products were consumed by the group, however food recall was poor. The NSWFA conducted an inspection of the restaurant. A food handler was identified as having gastro symptoms three days prior to the meal, however this particular person was pregnant and had been suffering with symptoms of gastroenteritis for the duration of the pregnancy. Given that this was the only event common to all cases, we suspect this outbreak is a point source viral outbreak, possibly foodborne however this cannot be confirmed microbiologically. (HUN0465)

In September, OzFoodNet (OFN) investigated a gastroenteritis cluster associated with a meal consumed at Indian restaurant. Ten from 28 people were affected with symptoms of anorexia and nausea +/- vomiting and diarrhoea. The incubation period was calculated to be approximately 12 hours with duration up to 24 hours. Onset times of illness were clustered in time. Given the onset time and duration of illness, and the symptom profile, we suspect that this was a toxin mediated illness, although this cannot be confirmed microbiologically. The local council conducted an inspection and confirmed that there was an undercooked chicken wing returned to the kitchen by a member of the cohort. Restaurant staff were given advice on using digital timers for cooking chicken. No food or clinical samples were collected. (HUN0464)

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 outbreaks NSCC201202 & SSW32768 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 2012 were:

The top five *Salmonella* Typhimurium notifications by MLVA type in the third quarter of 2012 were:

MLVA type	Associated with phage type*	Number of notifications
3-17-9-12-523	135	60
3-16-9-12-523	#	28
3-9-8-14-523	170	21
3-9-7-13-523	170	10
3-27-8-21-496	#	9

* At the time of writing of this report, phage types were not yet known for these notifications. However, in the past the recorded MLVA types have been associated with the recorded phage types in this table
# Salmonella Typhimurium with this MLVA pattern has never been phage typed in the NSW database.

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

In July, HNE OzFoodNet, in conjunction with NSW Health, commenced an investigation into a Salmonella Typhimurium (STm) cluster with a novel MLVA pattern of 3-17-9-12-523. Phage typing has been conducted on clinical samples from this cluster, with the organism being identified as STm PT 135. 69 cases were reported in this quarter with a collection date 15/06/2012-30/09/2012. A total of 41 cases were interviewed using a hypothesis generating questionnaire. A trawling questionnaire was completed for 35 cases. The proportion of males was slightly higher than females (54%). The median age was 16, with a range of 1-70. Place of residence for cases included Hunter New England (7), North Coast (3), South East Sydney (7), Sydney South West (5), Sydney West (10), Northern Sydney Central Coast area (6), Greater Western (1), Greater Southern area (2). Foods of greatest interest included fresh pre-cut chicken (88%), fresh beef cuts (60%), carrots (71%), cooked onions (63%), apples (63%) and bananas (57%). Fresh chicken purchased from large supermarket retailers was a feature of this cluster. The NSW Food Authority conducted a trace back investigation based on place of purchase information provided by cases, and identified three predominant chicken suppliers. The NSW Food Authority approached the three suppliers and asked whether any of them had detected

STm 135 as part of their routine in-house microbiological program. One supplier noted that they had seen the same phage type in samples collected during the year and supplied the isolates for MLVA typing. These isolates were found to have the same MLVA pattern as the clinical isolates (STm MLVA 3-17-9-12-523). Investigations are ongoing. Identification of the outbreak HUN0466 above was a result this cluster investigation.

Non-foodborne Disease Outbreaks

There were 301 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the third quarter of 2012. Of these, 170 (56%) occurred in aged care facilities, 83 (28%) occurred in child care centres, 42 (14%) in hospitals and six (2%) in other facilities. The outbreaks affected a total of 5,469 people. There were also 3 outbreaks of suspected viral gastroenteritis in the community, affecting 29 people.

In 59% (177/301) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 47 % (83/177) of the outbreaks and rotavirus was identified in 14% (25/177). In eleven outbreaks, one or more pathogens were detected alongside norovirus (rotavirus in 4 outbreaks, *Clostridium difficile* in 4, *Campylobacter* in 1, Blastocystis Hominis in 1 and *Salmonella* in 1). These results were in single stools and thought to be coincidental findings during viral gastroenteritis outbreaks. Of the 175 outbreaks where one or more stool specimens were tested, 42% (75/175) of all results were negative for any pathogens.

There were also three gastrointestinal illness outbreaks in non-institutional situations. In summary:

Cases of vomiting and diarrhoea from people who attended a conference on 20 August 12 was reported. The conference was catered with lunch and afternoon tea. Cases began reporting illness late in the afternoon of 20 August . Food consumed were sandwiches, wraps, dim-sims, samosas, spring rolls and sausage rolls. The PHU staff sent out questionnaires which were completed by 39 people (45% response rate) including 17 cases. Symptom onsets were staggered over 7 days and some people reported illness in relatives not present at the conference. No associated between illness and food was found. This was likely a viral gastro outbreak spread person to person. (NSCC32873)

A group of people reported developing vomiting and diarrhoea 2 hours after a meal of hot fish and chips on 26/8/2012. The group were a family of 11, who had all gathered the

previous night for a BBQ as well for a function. Seven people became unwell at about the same time. The complainant was not keen to give detail about the food items consumed in the home or to give contact details of other people ill. Based on the foods consumed and the onset times it was unlikely the fish and chip meal was the cause of the illness. The BBQ may have acted as the source of a viral gastro outbreak but due to the lack of information the cause of the groups' illness remains unknown. (NC32900)

Cases of gastrointestinal illness in 5 of a group of 7 people that shared a take-away meal for a family get together on 8 September. The cases do not live together and shared chicken, chips, mashed potato gravy and coleslaw. Onsets of vomiting and diarrhoea were staggered over a 24 hour period and lasted for on average 48 hours. No stool samples were submitted. The illness was suggestive of a viral gastro outbreak spread through a family so no inspection of the food premises was conducted. (Ill33065)

Notes for Quarterly Report

Data for foodborne disease outbreaks was reported as received by the OzFoodNet sites on 21 October 2012. 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 late in June, the information in this report may not be complete.

We wish to thank and acknowledge the people who collaborated and contributed to the surveillance and control of enteric diseases in NSW in the third quarter of 2012: NSW Public Health Unit staff, NSW enterics team, Dr Jeremy McAnulty, Dr Tony Merritt, NSW Food Authority, ICPMR, IMVS, MDU, primary laboratories, local councils and the OzFoodNet team.