

OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia

Third Quarter Summary, 2013 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 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 11% compared to the same quarter in the previous five years. In 2013 there were 517 notifications compared to a five-year average of 467 cases.

Typhoid notifications decreased by 12% for the third quarter of 2013 compared to the same quarter in the previous five years (6 vs. 6.8 cases). All of the typhoid infections were acquired overseas.

There was a decrease of 24% in notifications of **hepatitis A**. In the third quarter of 2013 there were 11 notifications compared to a five-year average of 14.4 cases for the same quarter. Most of the hepatitis A infections were acquired overseas; one case did not have any recent travel, but possible risk exposures included food imported by family members from Samoa.

There were 7 notifications of **listeriosis** in the third quarter of 2013. This was 40% higher than the previous five-year average of 5 cases for the same quarter. A number of different subtypes were identified and there were no links between cases. Two cases were pregnancy related cases. One baby born at 37.5 weeks survived and the other born at 20 weeks did not survive.

Giardiasis notifications for the third quarter of 2013 (454 cases) were similar to the five-year average of 444.6 notifications for the same quarter, as were **cryptosporidiosis** notifications (74 notifications compared with a five year average of 72.4 notifications for the same quarter). No clustering or common exposures were identified for any of these cases.

Shigellosis notifications were 52% higher during this quarter with 40 cases reported, compared with 26.4 cases for the five-year average for the same quarter. Twenty-six (65%) cases were noted as having travelled overseas during their incubation period, 11 (27.5%) acquired their infection in Australia, and for 3 (7.5%) cases the place of acquisition was unknown. Five of the locally acquired cases (45%) were males who reported engaging in male to male sex. Three of these cases are clustered by the serotype *S.flexneri* 3A which has emerged exclusively in males in this quarter.

There were no cases of **Shiga-toxin producing *E. coli* (STEC)** infection notified during the third quarter of 2013. The five-year average is 2.6 cases for the same quarter. One case of **haemolytic uraemic syndrome (HUS)** was notified during the third quarter of 2013 compared with the five-year average of 1.4 cases for the same quarter of the year. No enteric pathogen could be detected from this patients stool.

During the third quarter of 2013, the public health units in NSW and OzFoodNet investigated 10 foodborne or suspected foodborne outbreaks. In addition, 213 outbreaks with suspected person to person transmission in institutions (212) and non-institutional settings (1) were investigated.

Foodborne Disease Outbreaks

Of the 9 foodborne or suspected foodborne outbreaks reported by members of the public or clinicians, 1 was due to *Campylobacter*, 2 were due to norovirus, and the other 6 were due to unknown pathogens. One other outbreak was investigated that had an unknown source of contamination and pathogen.

***Campylobacter* infection associated with a wedding function**

An outbreak of gastroenteritis affecting people who attended a wedding reception in the Hunter Valley was notified. A retrospective cohort study was conducted with all people who had attended the wedding on 13 July 2013 (n=50). Thirty attendees were interviewed by telephone, of whom 17 (57%) reported symptoms. The symptoms began a median of 24 hours after food service began at the function. Symptoms reported included: diarrhoea (n=17, 100%), abdominal pain (n=12, 71%), fever (n=9, 53%), nausea (n=7, 41%) and vomiting (n=3, 18%). The median duration of illness was 4 days. One attendee was admitted to hospital. One stool specimen was collected and was positive for *Campylobacter*. There was no illness identified in wedding attendees prior to the ceremony or reception. No one reported either being ill, or hearing of someone who

was ill, at the wedding or reception. In a univariate analysis, the strength of association between becoming ill and 17 food and drink exposures at the wedding reception or attending a pre wedding function on the night before were calculated. The only significant association with illness was for consumption of the duck entree that contained duck liver parfait (Relative risk 4.3, 95% confidence intervals 1.2 to 15.5). Fifteen of the 17 cases (88.2%) ate the duck entrée. The NSW Food Authority visited the reception venue to review the preparation and handling of foods served at the reception. No food samples were available for collection but the chefs were advised of the proper cooking method required to render poultry livers free from bacterial pathogens which they are known to be infected with. (HUN0475)

Norovirus infection associated with a wedding function

Cases of gastroenteritis were associated with a wedding at a restaurant on 13 July 2013. Thirty from 94 guests were reported to be unwell with symptoms of vomiting, diarrhoea, fever, headache, lethargy and myalgia/arthralgia. One household reported secondary transmission. A cohort study was initiated using an online survey. Twenty four (26%) attendees completed the questionnaire, of whom 16 reported symptoms. The symptoms began a median of 39 hours after food service began at the function. Symptoms reported included: nausea (n=15, 94%), diarrhoea (n=11, 69%), abdominal pain (n=11, 69%), vomiting (n=10, 63%), and fever (n=8, 50%). The median duration of illness was 47 hours. Two stool specimens were collected and one was positive for norovirus GII.6. No one food item showed evidence of being the vehicle for contamination. There were no reports of contact with ill persons prior to the wedding or people with symptoms of a gastrointestinal illness at the wedding. Family members of both the bride and groom had attended pre-wedding events at two different venues the night before, however, not all of the cases had attended the events. The premises were inspected by the local council. No food safety issues or reports of gastrointestinal illness in staff were identified by council officers. This was a point source norovirus outbreak likely due to contaminated food, but the introduction mechanism of the pathogen could not be identified. (HUN0473)

Norovirus infection associated with a restaurant

Cases of gastrointestinal illness were reported in 5 of a group of 10 people that ate at a restaurant on 16 August 2013. The group from 3 different households were unwell with symptoms of nausea, vomiting, diarrhoea, abdominal cramps, fever and headache a median of 20 hours after the meal. Median duration was 72 hours. Foods consumed included individual serves of pork belly, pot pie, barramundi, chicken schnitzel, hot chips and salad. Cases ate a variety of foods, with 4/5 consuming salad. Two stool specimens were collected with one positive for norovirus. There was no other gathering attended

together prior to the event and no contact with an ill person prior to onset. This appears to have been a food borne viral gastrointestinal outbreak. The local council inspected the restaurant, no illness was reported in food handlers and they detected no deficiencies in practices to allow introduction of a foodborne pathogen. (HUN0474)

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

A PHU received a report from a member of the public who experienced gastrointestinal illness after staying at a hotel in Sydney from 23 to 25 August 2013 to attend a dance competition. Further reports were received by the NSWFA of similar illness. The PHU sent a survey to the competition participants and 119 people responded (of approximately 800 people). Four people reported being ill prior to the event, and 38 (33%) reported becoming unwell after the event between 24 and 26 August 2013. Symptoms include nausea, diarrhoea, vomiting, headache and fever. Significant odds ratios were found for staying at a particular hotel (OR=8.8 [3.3-25.2]) and eating breakfast at that hotel on 24 August 2013 (OR=8.1 [1.8-41.0]). The NSWFA inspected the premises and found no food safety issues and no reports of staff illness. No stool specimens were submitted for testing. The symptoms and person to person spread of illness are indicative of a viral enteric pathogen. The epidemiological evidence implies a component of point source spread at the common breakfast meal at the hotel although the origin of the pathogen is unknown. (NS37224)

Cases of gastrointestinal illness were reported in 6 of a group of 7 people that shared a meal at a restaurant on 24 August 2013. The group ate steak dishes and became unwell with abdominal cramps, nausea, vomiting and diarrhoea 24-35 hours after eating. The 6 that were ill had sauces (pepper sauce and mushroom sauce) accompanying their steaks. The local council inspected the restaurant and found no food safety issues. The cause of the illness remains unknown. (SES37212)

Cases of gastrointestinal illness were reported in 5 of a group of 5 people that ate take away burgers on 7 July 2013. Four of the 5 were sick approx 24 hours after, the 5th person was sick 48 hours after consumption. An additional person separate to this group also ate there on the same date and was ill. The illness was suggestive of viral gastroenteritis. Council inspected and was told that the owners of the shop had been ill with gastroenteritis and had likely worked while infectious. The EHO explained the need to refrain from working when ill and how important it is not to return to work too soon. The

business was issued with a formal warning. This was likely food-borne viral gastroenteritis illness but no samples were submitted for confirmation. (SSW201303)

Cases of gastrointestinal illness were reported in 3 of a group of 4 people that ate at a restaurant on 19 August 2013. The cases developed abdominal cramps, vomiting and diarrhoea 4 hours after the meal of individual curry and noodle meals. Symptoms lasted 4 hours. The NSW Food Authority inspected and while no definite evidence was found to prove food poisoning in that instance, deficiencies in temperature control, appropriate sanitisers and knowledge of food safety show potential for food contamination by an introduced pathogen. The cause remains unknown (SSW37179).

Cases of gastrointestinal illness were reported in 8 of a family group of 8 people that attended a birthday at a restaurant on 2 July 2013. The cases developed gastrointestinal illness within 24-50hrs of the meal with symptoms lasting 2 to 4 days. No other previous shared/suspected meals or contact with sick persons were reported in the 3 days food history. No specimens were submitted for testing. All cases ate all foods which included various Chinese dishes, so no association with a particular food could be found. Fried ice-cream was consumed and has previously been associated with *Salmonella* infections as it is made with raw eggs subject to temperatures inadequate to kill *Salmonella*. However since no clinical results were available, this cannot be confirmed. The NSW Food Authority inspected the restaurant. There were some issues with cleaning and maintenance and were issued with an improvement notice. They were also advised about the risks in using raw eggs in making fried ice cream and a fact sheet was given on safe use of raw eggs. The outbreak is suspected to be food borne but the cause of the illness in this instance remains unknown. (WS36575)

Cases of gastrointestinal illness were reported in 2 of a group of 12 people that ate at a restaurant on 19 September 2013. The two were from separate households and were unwell with symptoms of nausea and diarrhoea. Incubation period ranged from 5 to 10 hours, both were still ill at time of interview. Attendees consumed individual serves of a variety of dishes. A Thai fish dish with an accompanying serve of yellow rice was consumed by the two ill attendees. No other attendee consumed the fish. One stool sample was collected, with no pathogen detected. Local council visited the premises but no significant issues were identified. Toxin mediated illness is suspected but could not be confirmed. (HUN0476)

Gastrointestinal Disease Outbreaks of unknown cause

Cases of gastrointestinal illness in 12 of a group of 13 people, from 2 families ate together and became ill after eating at a restaurant on 7/7/2013. Onsets were spread out from 8 to 37 hours after eating. Foods consumed were varied but most people consumed a chocolate mousse cake purchased from a bakery. NSWFA inspected the restaurant which complied with all necessary food safety requirements. They also investigated the bakery and confirmed the cake was not made with any raw eggs. No stool samples were submitted and the pathogen is unknown. The source of the illness cannot be confirmed. (SSW36617)

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 third quarter of 2013 were:

| MLVA type | Associated with phage type* | Number of notifications |
|----------------|-----------------------------|-------------------------|
| 3-10-13-12-496 | 9 | 25 |
| 3-17-9-12-523 | 135 | 22 |
| 3-9-7-13-523 | 170 | 20 |
| 3-13-10-12-523 | 135 | 14 |
| 3-12-12-9-523 | 135a | 6 |

* 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 MLVA profile 3-10-13-12-496.

On 25 September 2013, HNE OzFoodNet initiated an investigation into a state-wide increase in STM 3-10-13-12-496 (PT 9). Twenty eight cases of STM 3-10-13-12-496 (PT 9) had been notified in NSW since August 2013. The majority of cases resided in the Metropolitan Sydney and Western Sydney regions. In October 2013 the investigation was widened to include the MLVA type STM 3-10-14-12-496. Nineteen cases have been interviewed with the *Salmonella* infection standard hypothesis generating questionnaire. The only food common to most cases is free range eggs, with one case reporting

consuming caged eggs. A variety of stores and products have been indicated by cases. Boot swabs from an egg grading facility in Western Sydney were also found to have the same MLVA pattern. NSW Food Authority has initiated a trace back to farm and the investigation continues.

Non-foodborne Disease Outbreaks

There were 212 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the third quarter of 2013. Of these, 106 (50%) occurred in aged care facilities, 58 (27%) occurred in child care centres, 40 (19%) in hospitals and eight (4%) in other facilities. The outbreaks affected a total of 3,356 people. There was also 1 outbreak of suspected viral gastroenteritis reported in a non-institutional setting, affecting 26 people.

In 57% (120/212) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 56% (67/120) of the outbreaks and rotavirus was identified in 4% (5/120). In seven outbreaks, one or more pathogens were detected alongside norovirus (rotavirus in 1 outbreak, and *Clostridium difficile* in 6 outbreaks). Also in two other outbreaks *Clostridium difficile* was detected alongside rotavirus. In seven other outbreaks a single stool detected *Clostridium difficile* (5 outbreaks), *Campylobacter* (1 outbreak) and giardia (1 outbreak). These results were in single stools and thought to be coincidental findings during viral gastroenteritis outbreaks. Of the 120 outbreaks where one or more stool specimens were tested, 34% (41/120) of all results were negative for any pathogens.

There was also a gastrointestinal illness outbreak in a non-institutional situation. In summary:

Notified to a PHU, 26 from a tour group of 40 people reported vomiting and abdominal pain and some diarrhoea on a return flight from Santiago Chile to Sydney arriving on 1 August 2013. It was reported one or more people experienced some abdominal pain prior to boarding the plane with other onsets of illness from 1 to 8 hours into the flight. Illness did not last for longer than 24 hours. Fifteen cases were taken to emergency departments upon landing in Sydney and one sample was collected which was initially negative for all pathogens. The group had been travelling and eating together, and had staggered onsets of symptoms, so person to person spread of a viral pathogen was suspected. The one stool was sent for toxin testing and tested again for norovirus by PCR. This was negative for bacterial toxins but was positive for norovirus. The finding of

norovirus is consistent with the clinical and epidemiological features of the outbreak.
(SES201305)

Notes for Quarterly Report

Data for foodborne disease outbreaks was reported as received by the OzFoodNet sites on 21 October 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 late in September, 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 2013: 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.