

OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia

Second Quarter Summary, 2011 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 (including paratyphoid) notifications increased by 15% compared to the same quarter in the previous five years. In the second quarter of 2011 there were 704 *Salmonella* notifications compared to a five-year average of 612 cases for the same period of the year.

The number of typhoid notifications for the second quarter of 2011 was 46% lower than the five-year average for the same quarter (5 vs. 9.2 cases). All of the typhoid infections were acquired overseas.

There was a decrease of 29% in notifications of hepatitis A. In the second quarter of 2011 there were 12 notifications compared to a five-year average of 16.8 cases for the same quarter. Six out of 12 hepatitis A notifications probably acquired their infection overseas. Of the six that acquired their infection in NSW, 3 were secondary cases, 2 had no obvious risk exposures and one 75+ year old female met the case definition for hepatitis A infection but had an atypical clinical presentation (mildly raised liver function tests and no jaundice).

There were 5 notifications of listeriosis in the second quarter of 2011. This was an expected number of cases based on the observed five-year average of 5.2 cases for the same quarter. There were no epidemiological links between the 5 cases.

There was a 12% increase in *Giardia* notifications (576 cases) when compared to the five-year average of 512 notifications for the same quarter of the year, while

cryptosporidiosis notifications decreased by 36% (104 notifications compared with a five year average of 162 notifications for the same quarter). We identified no clustering of *Giardia* cases by age, sex or place of residence. Single cases are not routinely followed up by Public Health Units.

The number of shigellosis notifications was as expected in the second quarter of this year, with 27 cases reported, compared to the observed five-year average of 25 cases for the same quarter.

There were 3 cases of shiga-toxin producing *E. coli* (STEC) infection notified during the second quarter of 2011, which was an expected number based on the five-year average of 2.6 cases for the same quarter. One of the STEC cases developed haemolytic uraemic syndrome (HUS). One HUS case is expected for the second quarter of the year based on the observed five-year average of 1.6 cases for the same quarter.

During the second quarter of 2011, the public health units in NSW and OzFoodNet investigated 11 foodborne or suspected foodborne outbreaks. In addition, 185 outbreaks with suspected person to person transmission in institutions (181) and non-institutional settings (4) 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, 3 were due to *Salmonella* Typhimurium (STm), 2 were due to norovirus and for the others, no pathogen could be identified.

***Salmonella Typhimurium* 135**

Two complaints were received from the NSWFA about 4 people who consulted a GP for diarrhoea that developed 19-34 hours after eating prawn dumplings at a café over 2 days. Two people were hospitalised. Three of the 4 submitted stool specimens were positive for *Salmonella* Typhimurium PT 135, MLVA type 3-13-11-9-523. NSWFA inspected the premises which were found to be clean and have appropriate food handling practices. The premises stated that prawn dumplings are made fresh each day using frozen prawns, coriander and egg to bind. Prawn dumplings were

served with a tomato relish. A number of food specimens (prawn dumplings (cooked and raw, but a different batch from that eaten by the cases), eggs, coriander and raw green prawns) were taken as well as environmental samples. All samples were negative for any pathogens. The small number of cases specific to the batch of prawn dumplings served over the 2 days suggests that this food is most likely the source. Whether the outbreak arose from undercooking or post process contamination cannot be definitively determined (SSW27744).

Salmonella Typhimurium

A small outbreak of STm 3-13-12-10-523 (phage typing not received: historically associated with PT 135a and PT 170) was identified through routine surveillance. All three cases had consumed a home-made semi freddo and hollandaise sauce in a private household 22-48 hours prior to onset of symptoms. It was estimated that 8-10 eggs were used to make both dishes, with minimal heat treatment. A specific brand of eggs could not be identified. Education about safe egg handling and preparation was given (HUN0446).

Salmonella Typhimurium 44

An outbreak of salmonellosis was identified through a hospital clinician reporting that 3 from 4 family members became unwell with gastroenteritis after eating at an Asian restaurant. One family member who was hospitalised submitted a stool specimen from which *Salmonella* spp. was isolated. A second report of illness affecting 2 from 3 people was received by the NSWFA. All newly notified people with salmonellosis were interviewed as part of active case finding, and the local GP was requested to review case histories of people presenting to the practice with symptoms of diarrhoea. A booking list was not available for further case identification. In total, 8/21 people who ate at the restaurant on the same night, reported symptoms of gastroenteritis. All cases consumed a chicken and corn soup or other dishes containing chicken. Five people (from 5 separate groups) who had submitted stool specimens were positive for *Salmonella typhimurium* (MLVA profile 3-10-8-9-523). An inspection of the premises was unable to identify any problems with food hygiene or food safety, however a sample of raw chicken strips which was used for both the chicken and corn soup, and other chicken dishes was positive for *Salmonella typhimurium* (same MLVA as the clinical cases). Phage typing has not been received for the clinical isolates (historically the MLVA profile has been associated with STm PT 44), however STm 44 has been confirmed in the chicken sample. Other food

items and swabs taken as part of the environmental investigation were negative for pathogens. No further action was taken by the NSWFA (HUN0444).

Norovirus

Two separate complaints were received from the NSWFA about several groups of people developing vomiting and diarrhoea 24 hours after eating at a bowling club on the weekend. The venue only served food in the weekends. On Saturday, there were 265 patrons and on Sunday 150. PHU staff interviewed 110 patrons of which 79 (70%) reported being unwell with gastroenteritis. Twelve people were hospitalised and 2 stool specimens returned positive norovirus results. The cohort study could not identify any particular food associated with illness. There were reports of the chef working while experiencing gastro symptoms. Given the inconsistencies in information provided about symptoms of the chef and other food handlers, the NSWFA issued a prohibition order to stop the venue from preparing food the weekend following the weekend of the outbreak. The order was lifted after requirements were met with regards to sanitation of food contact surfaces, skills and knowledge regarding food preparation and good hygiene, and health of persons who handle food. The stool sample submitted by the chef was negative for norovirus and bacterial pathogens. There were 4 positive norovirus results from the metal handle of a ladle from the kitchen, a swab from a tap in the ladies toilet, a microwave metal door release and an oven handle. The outbreak was most likely caused by norovirus transmitted from person to person via the infected food handler (SSW27725).

An outbreak of norovirus was investigated, associated with a wedding. Twenty three from 61 people became unwell with diarrhoea and/or vomiting a median of 34 hours (range 18-39 hours) after consuming the meal. There was no illness identified in wedding attendees prior to or at the wedding ceremony or reception. Seven people visited a medical practitioner, and 3 faecal specimens were positive for norovirus (genotype GII-6) by PCR. A cohort study was conducted, and the consumption of a chocolate and mandarin pie had a statistically significant association with illness (RR: 2.94, 95% CI 1.28-6.72, p value 0.0003). There were no reports of illness in food handlers or wait-staff, and there had been no reports of illness in groups using the function room prior to or after the implicated function. An environmental investigation was conducted by the NSWFA, who as a result issued a warning letter prohibiting the use of minimally heat treated eggs for ready to eat products (finding unrelated to the outbreak investigation) (HUN0443).

For the other 6 suspected foodborne outbreaks, the cause could not be established. In summary:

A complaint was received from the NSWFA about 17 of 50 people who developed nausea, vomiting and diarrhoea about 24 hours after eating assorted sandwiches, rolls and pastries at a wake at a reception centre. A point source cohort study was conducted. Thirty-one people were interviewed of which 9 people reported being unwell before attending the function. No specific foods could be epidemiologically associated with the illness. The NSWFA inspected the premises and reported that the chef had similar gastro illness and returned to work on the day of recovery, possibly whilst still infective, and prepared foods for the function. Also, 9 of 31 interviewed people reported being unwell before attending the function and there was some indication that there were secondary cases after the function. This outbreak was probably caused by a viral pathogen, transmitted from person-to-person. There was insufficient evidence to say that the outbreak was caused by person-to-food-to-person transmission (by the chef). No human, food or environmental specimens were available for testing. The NSWFA issued an improvement notice to the function centre (NSCC27365).

A complainant to the NSWFA, reported that 80/90 people developed abdominal cramps and diarrhoea between 9 and 15 hours after eating assorted Indian dishes and salad at a family gathering at a community centre. The hot food was brought in by a caterer and the complainant prepared some salads, dry snacks and rice. The PHU conducted a cohort study and received information about 28 people of which 25 had developed illness. Onsets were all on the following day and illness lasted from 1 episode of diarrhoea to 4 days of diarrhoea. No faecal specimens were collected. The NSWFA inspected the catering business and the facilities at the community centre. Food was prepared by the caterer at the function. The caterer noted that one of the dishes listed by the complainant was not prepared by them. There were no foods to test and the business had only prepared food for 2 functions this year. They were not planning to cater for any more functions in the near future. The NSWFA formally wrote to them about the Food Regulations and necessary compliance for catering events in the future (WS27585).

One complainant to the NSWFA reported that 6 senior citizens from a group of 6, developed diarrhoea and vomiting a median of 10 hours after eating at a lunch buffet. Foods consumed from the buffet included cooked meats, vegetables, prawns, fish,

and salad with egg. This was the only meal common to all 6. PHU staff interviewed 5 cases. Two cases reported prolonged symptoms (up to 28 days). One of 6 stool samples taken shortly after illness onset was negative for bacterial pathogens but was not tested for viral pathogens. Four other stool samples, collected around 4-5 weeks after illness onset were also negative. The NSWFA did not conduct an inspection of the premises due to the lapsed time between exposure and report of the incidence as well as lack of evidence of a bacterial pathogen. They referred the premises to local council for routine review (SSW27693).

Four work colleagues from a group of 4 out together on a job developed vomiting and diarrhoea, fever and abdominal cramps 1 to 7 hours after eating beef kebab with tomato, lettuce, cheese, onion, BBQ sauce and chilli sauce. Six of their colleagues who remained at the workplace (and did not eat the kebabs) did not report illness. This was the only common meal between the 4. No stool specimens were submitted. There was some left-over food available for testing. Because of the short incubation period it was thought unlikely that the implicated food was the cause of illness, and the complaint was referred to the local council for routine review (SSW27721).

In June 2011, organisers of a training workshop reported an outbreak of gastroenteritis affecting attendees. Initially it was reported that 13/30 people became unwell 1-2 days after the workshop. An online survey tool was used to collect risk factor information from the cohort. No illness was identified in attendees either prior to or at the workshop, nor was there any illness reported in family members of attendees prior to the workshop. The workshop was the only exposure common to all cases in the 7 days preceding the outbreak. The clinical profile and the occurrence of secondary cases in family members was suggestive of a viral illness, possibly norovirus, however this has not been confirmed from clinical samples (none submitted). Onset times of illness were indicative of a point source of infection. None of the foods consumed were found to have a statistical association with illness, and none of the food handlers reported having symptoms of gastroenteritis on the day the workshop was catered for. Also another group from the same organiser had been provided with the same foods from the same caterer, prepared at the same time and there was no illness amongst that group. An environmental investigation was not conducted by the NSWFA. This outbreak may have been caused by a contaminated food source but an environmental source could not be discounted (HUN 0445).

An outbreak of gastroenteritis was investigated, affecting 3 from 6 people. All cases consumed a prawn and pesto pizza from a restaurant. There were no other events common to the 3 cases in the 7 days prior to illness onset. The short incubation time and symptoms were indicative of an illness caused by a preformed toxin, however no stool specimens were collected. A booking list from the restaurant could not be obtained so a formal epidemiological study could not be conducted. The local council inspected the premises but did not find any significant issues to warrant further action (HUN0442).

Cluster Investigations

Since 2008, ICPMR routinely conducts Multiple-Locus Variable number tandem repeat Analysis (MLVA) to type *Salmonella* Typhimurium to improve capacity for cluster identification. 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 second quarter of 2011 were:

MLVA type	Associated with phage type*	Number of notifications
3-9-7-13-523	170	40
3-9-8-13-523	170	27
3-10-8-9-523	44	18
3-9-7-14-523	170	15
3-13-11-9-523	135	15

* 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

Seven gastroenteritis cases were reported from an aged care facility where 2 previous *Salmonella* Infantis outbreaks had occurred. Illness appeared viral in nature based on the onset dates (spread over 5 days) and symptom profile (vomiting and diarrhoea). However, 2 residents tested positive for *Salmonella* Infantis. Inspections and analyses were conducted similar to those during the previous outbreaks in April and September 2010, but nothing stood out as a possible cause. The aged care facility had very good infection control procedures in place. Samples from this, and previous outbreaks were sent for laboratory comparison of PFGE profiles. Results are pending.

Non-foodborne Disease Outbreaks

There were 181 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the second quarter of 2011. Of these, 87 (48%) occurred in aged care facilities, 45 (25%) occurred in child care centres, 37 (20%) in hospitals and 12 (7%) in other institutions. The outbreaks affected a total of 3346 people.

In 64% (115/181) of all outbreaks, 1 or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 61% (70/115) and rotavirus was identified in 3% (4/115) of the outbreaks. In 8 of the norovirus outbreaks, another pathogen was detected alongside norovirus (rotavirus in 4 outbreaks and *Clostridium difficile* in the other 4). Test results for the remaining 36% (41/115) were negative for any pathogens.

In addition to the outbreaks that occurred in institutions, there were 4 outbreaks of suspected viral gastrointestinal disease in the community.

Twenty-one of 75 guests at a wedding reception in a restaurant developed vomiting, diarrhoea, abdominal cramps or fever a median of 24 hours after consuming petit-fours as part of a set menu for dinner. Median duration of illness was 1 ½ day. A cohort study was conducted, and 54 guests were interviewed. The petit-fours were associated with illness (OR of 5.44). Four people were unwell with vomiting and diarrhoea before the function as well as during the function. No specimens were available for testing. The NSWFA inspected the restaurant. No staff illness was reported on the weekend in question or the week prior. Staff usually ate the same food as supplied to the function. The four types of petit fours served at the wedding were also served to approximately 200 people at a function on the next day and there were no reports of illness. Some of the petit fours contained egg or egg whites but all underwent a heat treatment. The owner of the restaurant commented that she had to clean up some vomit that was left in the sink of one of the toilets after the function (NSCC0031).

The NSWFA received a complaint about 35/82 people who developed nausea, vomiting and diarrhoea 3-22 hours after attending a wedding. It later appeared that a child that attended the wedding had been vomiting in the morning and just before the ceremony. The evening before, all guests including the child had gone out for dinner together. The groom developed diarrhoea on the night after the wedding. The rest of

the guests became ill later. One stool specimen was collected which returned a negative result for all pathogens (GS27577).

The NSWFA received a complaint about 21 of 39 people who developed vomiting, fever and diarrhoea 6-72 hours after a family function at a function centre. Illness duration was 48 hours. There were other guests in the restaurant that day but no other reports of illness. There were no reports of illness in staff. PHU staff interviewed 33 people and could identify an epidemiological link between illness and any particular food. The PHU concluded that the illness may have been due to person-to-person transmission of a viral pathogen. As no samples were taken from any cases this could not be confirmed (WS27864).

The director of a dance company reported gastro-intestinal illness in 53 out of 400 participants of dance competitions held over two days. PHU staff interviewed 24 participants of which 21 reported vomiting and or nausea, diarrhoea or abdominal cramps. The first case was ill on the day before the event and his partner was ill at the event. The incubation period for most cases was 24-48 hrs following the event that was also attended by the two known ill cases. Some food was provided at the event that took place at different locations but a common food for most cases could not be identified. Only one stool specimen was submitted for testing and was negative for bacterial and viral pathogens. The symptom profile, incubation period and duration of illness is suggestive of person to person transmission of a viral pathogen (SES120111).

Notes for Quarterly Report

Data for foodborne disease outbreaks was reported as received by the OzFoodNet sites on 21 April 2011. 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.

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