OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia

Third 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 17% compared to the same quarter in the previous five years. In the third quarter of 2011 there were 460 *Salmonella* notifications compared to a five-year average of 393 cases for the same period of the year.

The number of **typhoid** notifications for the third quarter of 2011 was 11% higher than the five-year average for the same quarter (8 vs. 7.2 cases). All of the typhoid infections were acquired overseas.

In the third quarter of 2011 there were was a decrease of 64% in notifications of **hepatitis A**, 7 notifications compared to a five-year average of 19.4 cases for the same quarter. Five out of seven hepatitis A notifications probably acquired their infection overseas. One of the cases that acquired their infection in NSW reported injecting drug use and the other was a 90 year old female who resides in a low care residential home. Her food history could not be ascertained.

There were 3 notifications of **listeriosis** in the third quarter of 2011. This was a 46% decrease in the expected number of cases based on the observed five-year average of 5.6 cases for the same quarter. There were no epidemiological links between the 3 cases.

There was a 5% increase in **giardiasis** notifications (455 cases) when compared to the five-year average of 432 notifications for the same quarter of the year, while

cryptosporidiosis notifications decreased by 5% (59 notifications compared with a five year average of 62 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 35% lower than expected in the third quarter of this year, with 16 cases reported, compared to the observed five-year average of 24.6 cases for the same quarter.

There were 2 cases of **shiga-toxin producing *E. coli* (STEC)** infection notified during the third quarter of 2011, which was close to the expected number based on the five-year average of 1.6 cases for the same quarter. One of the STEC cases developed **haemolytic uraemic syndrome (HUS).** One HUS case is expected for the third quarter of the year based on the observed five-year average of 1.2 cases for the same quarter.

During the third quarter of 2011, the public health units in NSW and OzFoodNet investigated 14 **foodborne** or **suspected foodborne outbreaks**. In addition, 151 **outbreaks with suspected person to person transmission** in institutions (150) and in the community (1) were investigated.

Foodborne Disease Outbreaks

Of the 14 foodborne or suspected foodborne outbreaks reported by members of the public or identified through routine surveillance of salmonellosis notification data in this quarter, three were due to *Salmonella* Typhimurium (STm), one was due to *Campylobacter*, and for the others, no pathogen could be identified.

Salmonella *Typhimurium* 3-9-8-14-523 infection outbreak

This outbreak was identified through a complaint in July about a Sydney restaurant to the NSWFA. Interviews with the group of four found that only the three ill people had consumed a tiramisu made with raw egg. One of these cases submitted a specimen which was positive for STm MLVA 3-9-8-14-523. Interviews with other STm cases with the same MLVA pattern identified ten additional ill people who also consumed the tiramisu at this restaurant. Of all of the cases from this outbreak, six submitted stool specimens which were positive for STm, all with the same MLVA pattern. The

NSWFA inspected the premises with the only food saftey issue being the use of raw eggs to make Tiramisu. This outbreak appears to have been caused by the consumption of products containing contaminated raw eggs. Due to the risk associated with potential contamination of raw eggs with Salmonella, the business agreed not to serve raw egg goods unless it was made from a pasteurised egg product. (SSW28242).

Salmonella *Typhimurium* 3-9-7-13-523 infection outbreak

Six cases of STm MLVA pattern 3-9-7-13-523 (historically associated with phage type 170) infection were notified in the Newcastle area, with collection dates between 8 and 10 August 2011. These cases represented three separate groups that ate at a bakery. No other shared meals or common exposures were identified between the six cases. Five of six cases reported consuming a carrot salad, as well as other foods. One case ate only cookies and cake from the bakery. The NSWFA investigation on 10 August found that the dressing on the carrot salad contained raw egg. Food samples (raw egg salad dressing, whole eggs) and environmental swabs (hand whisk, door handles) were negative for bacterial pathogens. The owner agreed to seek an alternative pasteurised product. NSWFA noted there was potential for cross contamination in the small kitchen with limited bench space. Investigation of the egg farm supplying the café did not reveal major issues though 6 swabs (5 of boots and 1 of faeces) were positive for Salmonella *Typhimurium* PT 170 with the matching MLVA pattern (3-9-7-13-523). (HUN0447).

Salmonella *Typhimurium* 3-9-7-15-523 infection outbreak

Five cases of STm MLVA 3-9-7-15-523 infection occurred in a similar geographic region in Newcastle in August, and were interviewed. Three cases had visited one café on August 5. Two cases had each eaten a sandwich and one had consumed only a drink. The two cases who had consumed the sandwiches did not know each other or share other common exposures for Salmonella infection. A council inspection identified that raw eggs were used in the mayonnaise served in the sandwiches, the use of which the proprietor agreed to cease. No samples were collected. The consumption of raw eggs is a common cause of salmonellosis, it is plausible the raw egg mayonnaise used at this cafe was contaminated with Salmonella and this caused the illness in these cases. (HUN0448)

***Campylobacter* infection outbreak**

A complaint was made to NSWFA on 26 September 2011 after 2 friends became ill with diarrhoea, abdominal pain, nausea and headache 9 to 10 hours after sharing a meal. Symptoms lasted for approximately 5 days. One case submitted a stool sample with was positive for *Campylobacter*. The only other shared possible exposure was another shared meal, consumed 5 days prior to onset. NSWFA cross checked for other complaints about both restaurants but due to multiple shared exposures identified, site visits were not conducted. Source and vehicle are unknown, though an incubation period of 5 days and the symptoms reported are consistent with the campylobacteriosis diagnosis. (HUN0450)

For the other 10 suspected foodborne outbreaks, the cause could not be established. In summary, some highlights:

One outbreak was identified through 2 complaints about the same restaurant to the NSWFA. The complaints were from 2 groups (6 people each) who ate on different days (8 days apart). Eleven of 12 people reported abdominal cramps and diarrhoea. From interviews with the 12 people, no single food item was clearly linked with illness but the most common foods eaten by the 11 ill people were schnitzels, potato salad and gravy. The NSWFA inspected the premises and found cleaning standards and temperatures to be satisfactory. Samples of the gravy were analysed as it was one of the most common foods for the ill cases and the most likely to have been a similar batch served over the extended time period. No causative agent was identified in the food samples taken from the restaurant. Based on the incubation period of 12 hours and symptoms of nausea and diarrhoea the likely organism was considered to be a preformed bacterial toxin such as *Clostridium perfringens* or *Bacillus cereus*. (SESI28502).

Another outbreak was identified through a complaint about a restaurant to the NSWFA. Six people from a group of 20 work colleagues developed diarrhoea 12 hours after a lunch meal on August 31. All 6 exclusively ate a Madras chicken curry dish with rice. NSWFA investigated the premises. The chef advised that chicken curries are cooked daily and usually stored in the cool room in a deep plastic container to be reheated later. The chef advised that the chicken curry served on August 31 would have been made on Monday August 29 and used over the next 2 days. A sample was taken of cooked rice that the chef advised was the same batch as the rice used on August 31. A sample of chicken curry was taken but it was a different batch to the one the cases consumed. All samples were negative for any

pathogens. The premises was clean throughout. Hand washing facilities and food handling practices were satisfactory. The owner of the business advised that 160 people had been served that day and no other cases of illness are known. It is feasible that the cause of the illnesses was due to a preformed bacterial toxin such as *Clostridium perfringens* or *Bacillus cereus* that could have been introduced due to slow cooling. During the inspection, following the advice given to the business about potential for bacterial growth, the business immediately modified the cooling step to speed up the cooling process to reduce the chance of bacterial growth. (WS28609)

Another outbreak was identified through reports of gastrointestinal illness to the public health unit. Eighty-seven of approximately 500 people developed vomiting and diarrhoea a median 24 hours after a dinner function at a boarding school on Friday 2nd September. The function was catered by a commercial catering business which provides services to the school on a permanent basis. Participants of the dinner were surveyed (59% response rate) and a salad of poached prawns with Thai herbs was statistically associated with illness (OR=6.3, CI 3.2-13.1). This dish was assembled from pre-prepared products and involved no cooking steps. There was no food available to be sampled so it was not possible to determine the specific ingredient cause or point of contamination. As no stool samples were submitted by any of the cases the pathogen could also not be confirmed in this outbreak though the clinical picture suggests a viral pathogen (NSCC28654)

On 20 September 2011, the PHU received a complaint from NSWFA reporting illness after a birthday party at a restaurant/bar. The complainant and 5 other attendees, including the organisers of the event, were interviewed. It was ascertained that 3 of 25 attendees experienced symptoms of nausea, abdominal pain and diarrhoea for approximately 24 hours. The incubation period ranged between 7 and 9 hours. Two of 3 cases consumed chicken schnitzel with gravy. This was the only common meal although 2 cases worked together. No food or clinical specimens were collected. A recent routine local council inspection found temperature control and other procedures for gravy making acceptable, and no other issues were identified. Based on the incubation period and symptom profile it is possible that a preformed bacterial toxin was the cause of the outbreak. (HUN0449)

Cluster Investigations

Since 2007, ICPMR routinely uses Multiple-Locus Variable number tandem repeat Analysis (MLVA) to subtype *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 third quarter of 2011 were:

MLVA type	Associated with phage type*	Number of notifications
3-9-7-13-523	170	29
3-9-8-13-523	170	18
3-9-8-14-523	170	17
3-9-7-14-523	170	14
3-9-7-15-523	170	10

* 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

These MLVA types are considered to be related strains and have been the most common MLVA types in NSW since 2008.

Non-foodborne Disease Outbreaks

There were 150 reported outbreaks of (suspected) viral gastrointestinal disease spread person-to-person from institutions in the third quarter of 2011. Of these, 74 (49%) occurred in aged care facilities, 35 (23%) occurred in child care centres, 36 (24%) in hospitals and 5 (3%) in other institutions. The outbreaks affected a total of 2482 people.

In 67% (100/150) of all outbreaks, 1 or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified as the likely cause in 61% (61/100), rotavirus in 12% (12/100) and adenovirus in 1% (1/100) of the outbreaks. Test results for the remaining 26% (26/100) were negative for any pathogens. In 15 of the outbreaks, more than one pathogen was detected. This was most commonly norovirus or rotavirus and *Clostridium difficile* (7 outbreaks), norovirus and rotavirus (3 outbreaks), norovirus and campylobacter (2 outbreaks) or salmonella (2 outbreaks) and norovirus and adenovirus (1 outbreak). Where a

bacterium was found alongside a viral pathogen, it was typically only in one stool sample in each outbreak and was thought to be a coincidental finding during a viral gastroenteritis outbreak.

In addition to the outbreaks that occurred in institutions, there was 1 outbreak of suspected viral gastrointestinal disease in the community.

This suspected outbreak was notified by a hospital of 6 cases of gastroenteritis (vomiting and diarrhoea) on the same day. The notifying GP thought they may be food borne as the same café was mentioned by those ill. Five of the 6 had eaten at the café, though 3 were the owner of the cafe and her family. One specimen was taken from 1 of those not related to the café owner and his sample was positive for rotavirus. The premise was inspected by the local council environmental health officer and they found no issues. The symptoms and duration of illness suggests viral illness, the link with the café may have been coincidental as no evidence was available to confirm this. (GS201101).

Notes for Quarterly Report

Data for foodborne disease outbreaks was reported as received by the OzFoodNet sites on 14 October 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 September, the information in this report may not be complete.

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