

OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia.

4th Quarter Summary, 2013 NSW/Hunter New England OFN sites combined

Neil Franklin, Tove Fitzgerald, Ben Polkinghorne

March 2013



Enteric diseases and OzFoodNet team
enteric@doh.health.nsw.gov.au
Communicable Diseases Branch
NSW Department of Health
73 Miller Street North Sydney NSW 2060
Locked Mail Bag 961 North Sydney NSW
2059
Phone: 02 93919236/93919561
Fax: general 93919848, secure 93919189

Overview of Quarter

In NSW, foodborne outbreaks are identified via a range of mechanisms, including reports from the public to public health units (PHU), 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 Enteric Disease in NSW

Salmonellosis notifications increased in the fourth quarter by 18% when compared to the previous five-year average for the same quarter, with 923 notifications compared with an average of 780 notifications.

Shigellosis notifications increased by 34% during this quarter with 50 cases reported, compared with 37 cases for the five-year average for the same quarter. Twelve cases (24%) were noted as having travelled overseas during their incubation period, 6 (12%) were not able to be interviewed for source of acquisition. Most cases (32, 64%) acquired their infection in Australia. Twenty-three cases most likely acquired their infection from male to male sex (MSM), 3 acquired their infection from household contacts that had travelled overseas, and for 6 the source could not be determined. These notifications included 11 different serotypes and subtypes, the most common being *Shigella sonnei* biotype G with 17 (34%) notifications, 13 of these were locally acquired, with 9 of those reporting MSM.

There was a 50% decrease in notifications of **hepatitis A** for the quarter when compared to the previous five year average for the same quarter (9 notifications compared to 18 notifications). Sixty-seven percent (6) of the people notified with hepatitis A infections acquired their infection overseas. For the 3 who did not report any overseas travel, 2 were secondary cases of a previous case and for the third the source could not be identified.

There was a 50% increase in notifications of **hepatitis E** for the quarter when compared to the previous five year average for the same quarter (4 notifications compared to 2.7 notifications). One case was acquired overseas and 3 cases had no overseas travel. Two of these cases were family members, the other case travelled to the same geographical area as these cases but no other links could be identified.

Eight cases of **Shiga-toxin producing *E. coli* (STEC)** infection were notified during the fourth quarter, which was an increase over the five-year average of 5 cases for the same quarter. Four of the STEC cases were also diagnosed with **haemolytic uraemic syndrome (HUS)**. This is higher than the five-year average of 3.3 cases for the same quarter. Two of the STEC cases were siblings, but no other clustering was evident.

There were 3 notifications of **listeriosis** in the fourth quarter of 2013, this is a 53% decrease in the five-year average of 6.3 cases. There were no epi-links or source identified for the cases.

Typhoid notifications for the fourth quarter of 2013 were 16% higher than the five-year mean for the same quarter (13 vs. 11 cases). Twelve cases were overseas acquired. For 1 case the source of infection remains unknown.

There was an 11% increase in ***Giardia*** notifications (494 cases) when compared to the five-year average of 443 notifications for the same quarter. Most cases were not interviewed. Of those that were, 11 reported contact with another known or possible case, including 3 family groups. Their exposures included using manure for gardening, camping and tank water. Four cases were acquired overseas, of which one was associated with a tour of Burma which was reported to OzFoodNet.

Cryptosporidiosis notifications increased by 36% when compared to the five-year average for the fourth quarter, with 147 notifications compared with an average of 108 notifications. Nineteen cases were acquired overseas. Of the remaining notifications, 78 were interviewed. Twenty-four cases reported swimming in public swimming pools, but there were no obvious clusters. Four pools were superchlorinated as a precautionary measure. Fourteen cases had rural exposures including farm animals, kangaroos, swimming in dams and rivers or drinking and bathing in tank water. Three cases reported sexual activity with faecal exposure and 3 cases were associated with a military training facility.

During the fourth quarter of 2013, the public health units in NSW and OzFoodNet received reports of 21 foodborne or suspected foodborne outbreaks. In addition, 223 outbreaks with likely person to person transmission in institutional and other settings were reported.

Foodborne Disease Outbreaks

A total of 21 foodborne or suspected foodborne outbreaks were reported by members of the public or identified through routine surveillance of *Salmonella* data in this quarter. Of these, 4 were able to be thoroughly investigated. One was due to *Salmonella* Typhimurium (STm), two were due to norovirus, and the other was due to an unknown pathogen.

The other 17 suspected outbreaks related to restaurants (11), take-away food (5) and a function (1) with a total of 106 people (average of 6 people per outbreak, range 2-20 people affected per outbreak) experiencing gastrointestinal symptoms after eating. Investigations into these reports were not able to determine if the illness was due to contaminated food or another source, nor were they able to confirm the symptom details through interviews. These 'outbreaks' therefore remain unconfirmed.

***Salmonella* Typhimurium (MLVA type 3-10-7-14-523) infection associated with a bakery**

A PHU was notified of seven people with gastrointestinal illness who presented to an emergency department. *Salmonella* was isolated in two of these people's stools. All cases reported eating Vietnamese rolls from a bakery. The PHU conducted case finding of *Salmonella* cases and of contacts and identified 46 people with gastrointestinal illness after eating at this bakery with an onset of illness between 19 and 23 October. There were 3 secondary cases. *Salmonella* Typhimurium (MLVA 3-10-7-14-523) was identified in 36 stool specimens submitted. The cases reported eating Vietnamese rolls with a variety of fillings. The premises were inspected by NSWFA which reported that raw egg mayonnaise was used on the rolls. A Prohibition Order was issued on the service of Vietnamese rolls and their ingredients. However the business had already stopped serving the rolls after receiving customer complaints prior to the NSWFA visit. None of the egg mayonnaise was available at the time of inspection but other samples (pate, lettuce and a cool room swab) were positive for STm MLVA 3-10-7-14-523 suggesting a cross-contamination incident.

The premises and equipment were re-swabbed to gauge the efficacy of their deep cleaning and sanitising post Prohibition Order. All swabs were negative for *Salmonella*. The owner and staff were assessed for required skills and knowledge which was at the time found to be satisfactory. The business is no longer selling ready-to-eat sandwiches but if there is an application to lift the Order further sampling and operational evaluation will have to be considered by the NSWFA. Trace back on the eggs was conducted but due to the long chain of resale the exact farm could not be definitively determined. (NS37886)

An outbreak of Norovirus associated with a christening

A PHU was notified of a suspected outbreak of gastroenteritis following a christening at a private residence on 22 October 2013. Fourteen people from a group of 20 were ill with symptoms of vomiting and diarrhoea. Symptom onset occurred from 20 to 24 October 2013. Symptoms experienced by cases included nausea (10), vomiting (6), headache (5), abdominal cramping (4), diarrhoea (11), myalgia (3) and lethargy (3). . The median incubation and duration of illness was 30 and 33 hours respectively. One stool sample was positive for norovirus by PCR. A cohort study was initiated. A statistically significant association was detected between some pre-prepared turkey, ham and salami wraps that had been purchased from a supermarket delicatessen. An inspection of the premises was conducted by local council and no illness in food handlers or other problems with food preparation procedures were identified. The method of introduction of the pathogen remains unknown but from the statistical analysis the pre-prepared wraps were likely contaminated, however the delicatessen supplied wraps to other customers on the same day and no illness was reported. (HUN0478)

An outbreak of Norovirus associated with a function

A PHU was notified of approximately 69 people out of a group of 96 who had gastrointestinal illness after eating at a function at a restaurant on 5 December 2013. An online survey was initiated and was completed by 47 guests (43 cases). Onsets ranged from 9 hours to 3 days after eating (median 24 hours), with symptoms of diarrhoea, vomiting, nausea, abdominal cramps, fever, headaches, muscle aches and lethargy lasting 2-3 days. The responses indicated a viral gastro illness with evidence of further person to person spread in family members who had not attended the dinner. Staff of the restaurant also showed evidence of a similar gastro illness with onset of illness reported in the same period as the group. One stool specimen was later confirmed to contain norovirus. Food included shared mezze plates of

seafood and other cold dishes and alternate meals for main and dessert, however due to the small number of controls interviewed most foods showed high attack rates. NSWFA inspected the restaurant and found hygiene, cleaning and sanitising to be satisfactory. A raw egg aioli was being used, but the illness does not appear to be associated with this food as it was only given to alternate persons and the disease is not indicative of salmonellosis. The restaurant was advised about the risks of using raw egg however and offered alternatives. Based on the incubation period and high attack rate, the likely cause of the illness was a person attending on the night of the function that was shedding norovirus onto the shared food. (NS38443)

For another suspected foodborne outbreak, the pathogen and cause could not be established. In summary:

A complaint of illness was made to the NSWFA following a birthday party at a restaurant on 19 November 2013. 18 people had attended the event. Complete information was collected for nine people. Eight of the nine people were ill with symptoms of gastroenteritis following the birthday party. Symptom onset occurred from 19 to 20 November 2013. Symptoms experienced by cases included nausea (7), abdominal cramping (7), diarrhoea (6), vomiting (4) and headache (4). The median incubation and duration of illness was 3.5 and 32.5 hours respectively. One clinical specimen was collected and sent for testing, however no pathogen was detected. No association between illness and consumption of specific food and drink items from the birthday party was detected, possibly due to small case numbers. The clinical profile of the illness is consistent with a toxin mediated illness. As only one clinical sample was collected, toxin analysis of the sample was deemed inappropriate. An inspection was conducted by the local council. Issues in relation to temperature abuse, hygiene and construction were identified. The issues in relation to temperature abuse and hygiene were resolved and the council is monitoring the progress of the construction issues. (HUN0480)

Cluster Investigations

Since 2008, ICPMR routinely uses MLVA to type *Salmonella* Typhimurium to improve surveillance capacity. The top five *Salmonella* Typhimurium notifications by MLVA type in the fourth quarter of 2013 were:

MLVA type	Associated	Number of
-----------	------------	-----------

	with phage type*	notifications
3-10-7-14-523	170	48
3-17-9-11-523	170	34
3-13-11-9-523	135a	28
3-16-9-11-523	170	25
3-12-12-9-523	135a	22

*These MLVA have in the past been associated with these phage types

A cluster of MLVA is defined as 5 isolates with the same MLVA type collected over a period of 4 weeks. MLVA cluster alerts have been used to identify foodborne outbreaks and to initiate cluster investigations.

***Salmonella* Typhimurium MLVA profile 3-10-7-14-523**

In October 2013, routine surveillance identified three cases of *Salmonella* Typhimurium in the south coast of NSW, which had the same MLVA type found in a previous outbreak in North Sydney (NS37886 above). The cases confirmed that they had attended a birthday lunch at a restaurant located on the South Coast. Seven family members attended the lunch and 3 became unwell. One case became unwell 24hrs after the lunch, the two other cases identified that they had become unwell between 48-120hrs following the lunch. There had been no contact between cases in the week prior to onset and no contact with ill persons. The cases lived in separate households. Symptoms included severe diarrhoea, abdominal cramping, fever and muscle pain with a duration up to seven days. Five family members were interviewed (3 cases and 2 contacts). No further cases were identified. Foods consumed included prawns, fish pie, salmon, lamb shank and a chocolate fondant with ice cream. The 3 cases shared one chocolate fondant, there were no other foods consistently consumed. The NSW Food Authority was informed on 21 November 2013. A residual sample of the chocolate fondant was sampled and was negative for *Salmonella*.

***Salmonella* Typhimurium MLVA profile 3-17-11-10-523**

In December 2013, a PHU was notified by a hospital of a cluster of salmonellosis cases from a town in the Southern NSW area. Eleven cases were notified between 21 & 31 December 2013. Initial interviews did not reveal a source. The cases were later typed as *Salmonella* Typhimurium MLVA 3-17-11-10-523. Two more cases were reported in January 2014. One reported working at a bakery that was mentioned by some cases and reported eating raw cake batter, but did not prepare any foods for sale containing raw egg. The eggs for this bakery were from a very

large local farm. A common source of infection for the cluster could not be determined.

***Salmonella* Typhimurium MLVA profile 3-17-9-12-523**

In October, a cluster of *Salmonella* Typhimurium MLVA 3-17-9-12-523 was investigated. A previous investigation in May identified this pathogen on an egg farm in NSW. Four cases were notified from 27 September 2013 to 09 October 2013. Two of the cases were female. The median age was 7.5 yrs (range 4-50yrs). All cases resided in the HNE region. Two cases had direct links to the previously implicated farm. One case worked on the implicated farm and the other case was a food handler in a café that sourced its eggs from the implicated farm through a wholesaler. The NSW Food Authority was informed. Repeat sampling of the farm is scheduled for 2014.

***Salmonella* Saintpaul**

In November, a cluster of *Salmonella* Saintpaul was investigated. Three cases of *Salmonella* Saintpaul with collection dates from 19 to 20 November 2013 were detected through routine *Salmonella* surveillance. All cases were male. The median age was 34 years (range 32-37 yrs). Food history was available for all three cases. Commonly consumed foods included beef, beef sausages, milk, eggs, carrots and take-away chicken. All cases reported consuming Chinese take-away dishes in the week prior to onset; however a common restaurant was not identified. A transmission vehicle was not identified in this investigation.

***Salmonella* Typhimurium MLVA profile 3-12-10-8-523**

In December, a cluster of a novel *Salmonella* Typhimurium with the MLVA pattern of 3-12-10-8-523 was investigated. Four cases were detected during routine *Salmonella* surveillance with collection dates from 10 November 2013 to 8 December 2013 in a suburb of northern NSW. This MLVA pattern has only ever been detected in that suburb. All four cases were female. The age range was 1-84 years. Two cases were lost to follow up. Food history was available for two cases. Foods consumed included a meat and salad roll from the local bakery and special fried rice from the local Chinese restaurant. Both cases shopped at the same supermarket. A common food vehicle was not identified in this investigation.

Non-foodborne Disease Outbreaks

There were 222 outbreaks of (suspected) viral gastrointestinal disease in institutions reported to PHUs as part of mandatory reporting in the 4th quarter of 2013. Of these, 101 (45%) occurred in aged care facilities, 75 (34%) occurred in child care centres,

36 (16%) occurred in hospitals, 4 (1.8%) occurred in a residential care unit, 3 (1.4%) occurred in schools, 2 (0.9%) occurred in military institutions and 1 (0.5%) occurred in a camp. The outbreaks affected a total of 2,400 people. In 52% (115/222) of all outbreaks samples were taken for laboratory testing, and in 54% (62/115) of these pathogens were detected. Norovirus was identified in 50% (58/115) of the outbreaks and rotavirus was identified in 2.6% (3/115). In five norovirus outbreaks in hospitals, *Clostridium difficile* was identified in single patients and was believed to be antibiotic associated and unrelated to the outbreak pathogen. Even though pathogen results were not available for 72% of institutional outbreaks the epidemiology is consistent with viral gastroenteritis spread from person to person.

There was also a person to person gastrointestinal illness outbreaks in a non-institutional situation. In summary:

A PHU was notified of a suspected outbreak of gastroenteritis following a wedding. A cohort study was initiated. Information was obtained for 34 from 70 people. 18 of these 34 were ill with symptoms of vomiting and diarrhoea. No significant associations between food and drink items were detected in univariate analysis. Onsets ranged from 25 (the day before the wedding) to 28 October 2013 suggesting person to person transmission. There was also contact among family members prior to the wedding. The NSWFA contacted the wedding venue. There were three weddings on the same evening and no illness had been reported from the other wedding cohorts. There were also no reports of illness in food handlers or wait staff at the venue. One sample was negative for any pathogens but the symptom profile was suggestive of a viral gastrointestinal pathogen. (HUN0479)

Notes for Quarterly Report

In NSW, foodborne outbreaks are often reported to the NSWFA Consumer Complaints Line by members of the public. This results in a number of outbreaks affecting small numbers of people being referred to PHUs. These outbreaks usually require limited epidemiological investigation and are often of unknown aetiology and as such are not reported here.

Data was reported as received by the Communicable Diseases Branch on 27 January 2014. 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 after 27 December 2013, 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 fourth quarter of 2013: NSW Public Health Unit staff, Dr Jeremy McAnulty, Dr Sean Tobin, Hunter New England Population Health OzFoodNet team (Tove Fitzgerald, Kim Lilly and Dr Tony Merritt), NSW Food Authority, ICPMR, IMVS, MDU, primary laboratories, local councils and the OzFoodNet team.