

OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia

First 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 notifications increased by 50% compared to the same quarter in the previous five years. In 2011 there were 1,549 notifications compared to a five-year average of 1,030 cases.

Typhoid notifications for the first quarter of 2011 were 103% higher than the five-year mean for the same quarter (24 vs. 11.8 cases). All of the typhoid infections were acquired overseas. A cluster of 5 typhoid cases (3 laboratory confirmed) was reported following a family reunion in Samoa.

There was a decrease of 20% in notifications of hepatitis A. In the first quarter of 2011 there were 22 notifications compared to a five-year average of 27.4 cases for the same quarter. The majority of hepatitis A (82%) infections were acquired overseas.

There were six notifications of listeriosis in the first quarter of 2011. This was a 44% decrease compared to the five-year average of 10.8 cases for the same quarter.

There was a 34% increase in *Giardia* notifications (811 cases) when compared to the five-year average of 60.6 notifications for the same quarter. While Cryptosporidiosis notifications decreased by 73% (99 notifications compared with a five year average of 360.4 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 (PHUs).

Shigellosis notifications increased by 43% during this quarter with 43 cases reported, compared with 30 cases for the five-year average for the same quarter. Twelve (28%) cases were noted as having travelled overseas during their incubation period, 18 (42%) acquired their infection in Australia, and for 13 (30%) cases the place of acquisition was unknown. Twenty-five notifications (58%) were typed as *Shigella sonnei* biotype G. The locally acquired cases (18) were predominantly males (17) who reported engaging in male to male sex (11). These cases were not closely clustered by time and place of residence.

There were no cases of Shiga-toxin producing *E. coli* (STEC) infection notified during the first quarter of 2011, which was unusual given the five-year average of 5.2 cases for the same quarter. One case of haemolytic uraemic syndrome was notified during the first quarter of 2011, stool specimens were negative for STEC. This is lower than the five-year average of 2.6 cases for the same quarter of the year.

During the first quarter of 2011, the public health units in NSW and OzFoodNet investigated 16 foodborne or suspected foodborne outbreaks. In addition, 126 outbreaks with suspected person to person transmission in institutions (124) and non-institutional settings (2) were investigated.

Foodborne Disease Outbreaks

Of the 16 foodborne or suspected foodborne outbreaks reported by members of the public or identified through routine surveillance of *Salmonella* data in this quarter, six were due to *Salmonella* Typhimurium (STm), one was due to clostridium perfringens, two were due to *Salmonella* Singapore, one was due to *Campylobacter* spp, and one was due to norovirus, the others were unknown pathogens.

***Salmonella* Typhimurium 44 (MLVA type 3-10-8-9-523)**

The PHU was notified on the 3-4/1/2011 by an Emergency Department (ED) of an increase in ED presentations with gastrointestinal symptoms. Analysis of cases' information implied a point source – the consumption of pork/chicken/salad rolls from a Vietnamese bakery in the area. The rolls were prepared with raw egg mayonnaise. Approximately 147 compatible cases presented to EDs and GPs. 58 people were interviewed who provided information on 85 people ill. 49 of these people had a sample taken and 47 were positive for STM 44 (MLVA 3-10-8-9-523). The bakery was inspected

by the NSWFA and shut down for clean up and disinfection. Food samples (13 from 21 samples- including raw egg butter, pate, chicken, pork and salad items) and environmental swabs (5 from 11 samples- including the chilled food display unit, metal tongs, mixing bowl) taken on that day were positive for STM 44 (MLVA 3-10-8-9-523). After closure and environmental cleaning, the proprietor applied for a certificate of clearance following subsequent negative results of environmental swabs. Staff skills and knowledge were assessed and found to be inadequate so the bakery remained closed until these skills were satisfactory. Lack of records/supplier information prevented an egg trace back. (SSW26824)

***Salmonella* Typhimurium 170 (MLVA type 3-9-7-14-523)**

A PHU was notified of five cases of salmonellosis by a hospital emergency department. Two of the 5 cases had eaten fried ice-cream at the same Chinese restaurant. An additional clinical case had also eaten fried ice-cream. The NSW FA then received a complaint from a case of *Salmonella* Typhimurium (who had been admitted to hospital) and his wife (clinical case) who had both eaten fried ice-cream at the same Chinese restaurant. The MLVA profile of those who submitted stool samples (n=3) was 3-9-7-14-523. The NSW FA inspected the premises and issued a prohibition order on serving fried ice-cream. Results of samples of uncooked and cooked fried ice-cream balls and numerous environmental samples were positive for STm 170 (MLVA 3-9-7-14-523). NSWFA traced the eggs back to a specific farm and took around 30 samples. Chicken feed, faeces and environmental samples were positive for a mixture of *Salmonella* Infantis, S. Havana and S. St Paul. One environmental sample from a walkway was STm 170 (MLVA 3-9-7-13-523). No *Salmonella* species were found on the egg samples (SSW27185).

***Salmonella* Typhimurium 135 (MLVA type 3-12-9-10-550)**

Nineteen cases from a cluster of 23 cases of STm MLVA 3-12-9-10-550 (previously associated with PT135) located in a similar area were interviewed. 9/19 had eaten diverse products from a bakery (not Vietnamese). Common ingredients included cream, custard and icing. The specimen collection dates for these cases ranged from 27 Jan to 18 Feb. The NSW FA inspected the premises on 2/3/2011. There were no reports of illness in staff. Environmental and food samples were taken and two environmental samples were positive for *Salmonella* Typhimurium (3-12-9-10-550 and 3-12-9-9-550). No food samples were positive. The premises were re-swabbed on 10/3/2011 to assess the effectiveness of their cleaning processes but STm (3-12-9-11-550) was again found on numerous pieces of kitchen equipment and surfaces including piping bags and nozzles. A prohibition order for full closure was issued. The bakery was re-opened on

2/4/2011 following negative results on clearance swabs for *Salmonella* and a satisfactory assessment of food handling skills and knowledge. (NSCC27205).

***Salmonella* Typhimurium (MLVA type 3-11-11-10-523)**

Six cases of a novel MLVA pattern (3-11-11-10-523) clustered in time was investigated. These 6 cases, part of five groups and who identified 4 additional clinical cases, ate at the same restaurant on 27-29 Jan. All except one case ate a dessert containing berries (strawberries, raspberries and possibly others) meringue and sabayon containing raw egg. The final case ate on 29/1/2011 and ate a baked chocolate dessert. The FA inspected the premises and took food samples and environmental swabs. All food and environmental samples from the restaurant were negative except for a swab from a hand wash basin which was positive for *Salmonella* Sofia. (NSCC27162)

***Salmonella* Typhimurium 170 (MLVA type 3-9-8-13-523)**

Seventeen from 311 girls at a boarding school developed diarrhoea, vomiting, headache and fever with onsets on the 30-31/1/2011. Five stool specimens were taken and 3 were positive for *Salmonella* Typhimurium (MLVA 3-9-8-13-523). The PHU administered web-based questionnaires to 72 students (17 cases, 56 controls). The only food statistically significantly associated with illness was an apple turnover consumed on 28/1/11 evening: OR=4.6 (95% CI; 1.4-15.4) though this was consumed by only 11 cases and 18 controls. The apple turnover was not served with any high risks foods such as cream, custard or ice-cream. The NSWFA inspected the premises on 14/2/11 and found no issues and took no samples. They received reports that 15 staff ate the same meals as the boarders' and none were ill. Staff had not been included in the questionnaire survey. It was also reported that on the night of Jan-27 approximately 50% of the boarders ate off-site, mostly with their own families before returning to school for the term. The epidemiological and environmental investigations could not determine a credible source of the infection. (SSW27042).

***Salmonella* Singapore**

OzFoodNet (Hunter New England) investigated two outbreaks of *Salmonella* Singapore in February 2011, which were associated with a buffet served on a cruise boat. The first outbreak was associated with an 80th Birthday party held on the 30/1/2011, with 41/57 people reporting a *Salmonella*-like illness. *Salmonella* Singapore was isolated in five stool specimens, with *Salmonella* spp detected from a stool specimen collected from a sixth patient. A cohort study was conducted, with roast chicken pieces (RR 5.70, 95% CI 0.93-35.19), silverside (RR 1.32 95% CI 0.97-1.81) and potato salad (RR 1.60, 95% CI 1.08- 2.36) found to have an association with illness. In multivariate analysis, only roast

chicken had a statistically significant association with illness (OR 26.4, 95% CI 2.85-244.43). Through contacting people through the caterer's booking lists, we identified a second function group with attendees experiencing a similar illness (held 29/01/2011). Ten people (one with laboratory confirmed *Salmonella* Singapore infection) from this function (denominator unconfirmed, suspect 35 people) were also ill. Similar foods, including roast chicken, were served to the second function. In addition, 5/7 food handlers associated with the cruise boat were also ill with a similar illness – all five cases reported consuming food at function held on the 30/1. The chicken for both functions was purchased from a supermarket at the same time, and taken back to the cruise owner's food premises where it was plated and stored. *Salmonella* Virchow PT 34 was isolated from a sample of chicken obtained from the supermarket; however other food samples and swabs taken from both the supermarket and the cruise owner's premises were negative for pathogens. A report from the NSW Food Authority is pending; however it is suspected that the outbreak was caused through cross contamination between raw and cooked product, and temperature abuse of the cooked product. (HUN0436 and HUN0437)

***Campylobacter* spp**

In February, OzFoodNet (HNE) was notified of an outbreak of Campylobacterosis associated with an 80th Birthday held at a restaurant. Eleven from 34 people (2 laboratory confirmed *Campylobacter* spp) became unwell with a diarrhoeal illness a median of 44 hours after consuming the meal. Chicken liver pate consumed as a canapé was the only food item that was found to have a statistically significant association with illness (RR 7, 95% CI 1.04-45.44 p=0.004). NSW Food Authority reviewed the preparation of the pates, and identified that the undercooking of the centre of the livers was not an adequate kill step for *Campylobacter* spp. All food samples (including a sample of pate that was not part of the batch consumed by the implicated function) and environmental swabs were negative for pathogens. NSW Food Authority has advised the business to cease using raw eggs in aioli, and is currently reviewing the practice of pate preparation at the premises. At a national level, there have been four outbreaks of *Campylobacter* associated with pate (using undercooked poultry livers) investigated by OzFoodNet sites since 2008. In response, OzFoodNet (HNE) has submitted a report to Food Standards Australia New Zealand requesting that the processing of pate using undercooked poultry livers is reviewed (HUN0439).

***Salmonella* Typhimurium - MLVA profile 3-13-14-9 (10)-523**

In February 2011, OzFoodNet (HNE) were notified of two separate outbreaks of gastroenteritis, both affecting 4/5 people who had eaten a meal at a local café on the

28/1/2011. Additional cases were identified through interviewing local residents with a recent *Salmonella* spp infection, contact with people on the café booking list, and single foodborne illness reports from the NSW Food Authority. In total, 11 people (six with laboratory confirmed *Salmonella* infection) were symptomatic with a diarrhoeal illness after consuming a chicken caesar salad from the café over a two day period. All isolates were typed as *Salmonella* Typhimurium with an MLVA profile 3-13-14-9-523 (5 cases) and 3-13-14-10-523 (one case). Phage typing for clinical cases is unavailable at the time of this report. An inspection of the premises by the NSW Food Authority identified that raw egg was used in the chicken caesar salad dressing, with the same batch of dressing used over a two day period. *Salmonella* Typhimurium 3-13-14-9-523 (PT 3) was isolated from a sample of Caesar salad dressing ten days after the exposure period. The NSW Food Authority has issued an order prohibiting the use of raw egg in ready to eat foods. (HUN0438)

Clostridium Perfringens

This outbreak in a long-term care facility for disabled men aged between 30 and 70 years, was initially notified as a probable viral gastroenteritis outbreak in an institution onset 9/3/11. Five residents and one staff member reported diarrhoea. Cases appeared in three clusters occurring two weeks apart. One stool specimen was positive for clostridium perfringens with a cell count of 6.5×10^7 (suggestive of food poisoning). The local council inspected the facility and reported that the kitchen was clean and well-organised. Cool room temperatures were satisfactory and left-overs are not served to residents. There was some concern with the type of cooker they have and that they do not have a meat probe to check cooked temperatures. The PHU could not identify the mechanism of spread for the pathogen; however they provided advice on increased cleaning and hygiene measures. (WS2011018). Residential facilities for developmentally disabled people are not covered by Food Safety Programs for Food Service to Vulnerable Persons. The NSW Food Authority will discuss the inclusion of these facilities with FSANZ.

Norovirus

Forty-nine of 82 people developed vomiting and diarrhoea 24-40 hours after attending a christening. Children ate chicken schnitzel and chips, and adults ate steak and mashed potato, creamy chicken with mashed potato, lasagne, and fettuccine with mushroom sauce. The PHU were unable to interview anyone from the venue to ask about staff illness. The complainant's son was admitted to hospital. Three stool samples were submitted and all were positive for norovirus. There was not enough evidence available

to indicate whether the norovirus outbreak was due to person-to-person spread or to food contamination. (SSW27388)

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

Seven of seven people developed abdominal cramps, nausea, diarrhoea, and vomiting five to 24 hours after eating at a Thai restaurant. Symptoms lasted up to 48 hours. The meals consumed included spring rolls, salt & pepper squid, chicken satay, pork ribs, penang curry, massaman beef curry, stir-fry vegetables with chicken and basil and white rice. The seven affected people live in four different households and had not shared any other meals in the seven days preceding the Thai meal. No stool specimens were submitted for testing. The NSWFA inspected the premises and took food samples but found no breaches and all samples were negative. (SSW26850)

A GP reported to a PHU that five of six people in a family developed diarrhoea, abdominal cramps and nausea 12-15 hours after eating beef steaks and hamburgers from a restaurant. Three children had hamburgers and the two adults had two different steak dishes. The adult who was not ill had a chicken caesar salad. Illness duration ranged from one and a half to five days. Analysis of the menu items did not reveal any common foods to all five dishes and no stool samples were submitted for testing. Due to lack of evidence of a likely food source the NSWFA referred the case to the local council to conduct a routine hygiene inspection. (SW26843)

Thirty-six of 100 attendants of an 80th birthday party developed diarrhoea and fever after eating at a Chinese restaurant on 26/2/2011. Onsets ranged from 27/2/2011 to 28/2/2011. The people ate a set banquet menu and desserts that were brought in from a shop (coffee sponge cake) and were homemade (sticky rice congee, biscuits and red bean balls). The manager of the restaurant informed the NSWFA that there was also a wedding party of 120 people who had the same banquet menu but reported no illness. The complainant was not willing to provide more information on the homemade and shop bought desserts. The NSWFA referred the case to the local council for routine inspection. (SSW27231)

Three from three people (unrelated and not from the same household) became unwell with vomiting and diarrhoea 35-40 hours after consuming chicken and salad wraps from a bistro. No illness in contacts of cases, and no specimens were obtained. It is suspected

that this is a point source viral outbreak associated with the consumption of wraps.
(HUN0440)

Seven people became unwell with predominantly vomiting six hours after attending a wedding reception. No contact details were available for attendees of the wedding. Although the epidemiology suggests a point source of infection associated with the wedding, there were a number of shared exposures between the cases prior to the reception. (HUN0441)

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 foodborne outbreaks NSCC27205 and NSCC27162 described above were identified through surveillance of *Salmonella* Typhimurium notifications by MLVA type. The top five *Salmonella* Typhimurium notifications by MLVA type in the first quarter of 2011 were:

MLVA type	Associated with phage type*	Number of notifications
3-9-7-13-523	170	160
3-10-8-9-523	44	123
3-12-9-10-550	135	69
3-9-7-14-523	170	66
3-9-7-15-523	170	48

* 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

Non-foodborne Disease Outbreaks

There were 124 reported outbreaks of (suspected) viral gastrointestinal disease in institutions in the first quarter of 2011. Of these, 43 (34%) occurred in aged care facilities, 67 (54%) occurred in child care centres, 12 (10%) in hospitals and one each (0.8%) in a residential care facility and a family care centre. The outbreaks affected a total of 1,475 people. There were also two outbreaks of suspected viral gastroenteritis in the

community. One outbreak occurred in a school camp, affecting eleven people and one outbreak occurred at a christening affecting ten people.

In 48% (61/126) of all outbreaks, one or more stool specimens were laboratory tested to identify a possible cause of the outbreak. Norovirus was identified in 28 % (17/61) of the outbreaks. In three outbreaks, another pathogen was detected alongside norovirus (rotavirus in one outbreak, *Clostridium difficile* in another and *Campylobacter* in the third). Of the 61 outbreaks where one or more stool specimens were tested, 38% (23/61) of all results were negative for any pathogens.

In addition, there was one outbreak of suspected viral gastrointestinal disease in the community, identified through a complaint to the NSWFA. Ten of 135 people developed vomiting, diarrhoea, fever, nausea, headache and abdominal cramps 27-78 hours after attending a christening at a restaurant. Two complaints were received from separate family groups. The PHU interviewed four family groups and found no significant association between illness and any food items consumed. No samples were collected for testing. The christening organiser reported that there had been two guests with gastrointestinal illness at the christening and that there had possibly been a public vomiting incident during the event suggesting person-to-person spread of a viral pathogen. There was also a wedding held at the restaurant that evening but in a different function room. Contact has been made with the groom who denied any illness in the wedding guests. The evidence suggests person to person spread of viral illness. (SES27289)

Notes for Quarterly Report

Data was reported as received by the Communicable Diseases Branch 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 after 21 March 2011, the information in this report and in the Outbreak Register may not be complete.

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