

Quarterly reports

OzFoodNet QUARTERLY REPORT, 1 JULY TO 30 SEPTEMBER 2010

The OzFoodNet Working Group

Introduction

The Australian Government Department of Health and Ageing established the OzFoodNet network in 2000 to collaborate nationally to investigate foodborne disease. OzFoodNet conducts studies on the burden of illness and coordinates national investigations into outbreaks of foodborne disease. This quarterly report documents investigations of outbreaks of gastrointestinal illness and clusters of disease potentially related to food, occurring in Australia from 1 July to 30 September 2010.

Data were received from OzFoodNet epidemiologists in all Australian states and territories. The data in this report are provisional and subject to change, as the results of outbreak investigations can take months to finalise.

During the 3rd quarter of 2010, OzFoodNet sites reported 633 outbreaks of enteric illness, including those transmitted by contaminated food. Outbreaks of gastroenteritis are often not reported to health agencies or the reports may be delayed, meaning that these figures under-represent the true burden of enteric illness. In total, these outbreaks affected 12,494 people, of whom 273 were hospitalised. There were 38 deaths reported during these outbreaks. The majority of outbreaks (86.4%, $n=547$) were due to person-to-person transmission (Table 1).

Table 1: Mode of transmission for outbreaks and clusters of gastrointestinal illness reported by OzFoodNet, 1 July to 30 September 2010

Transmission mode	Number of outbreaks and clusters	Per cent of total
Foodborne and suspected foodborne	34	5.4
Person-to-person	547	86.4
Unknown (<i>Salmonella</i> cluster)	11	1.7
Unknown (other known pathogen cluster)	1	0.2
Unknown pathogen cluster	40	6.3
Total	633	100.0

Foodborne and suspected foodborne disease outbreaks

There were 34 outbreaks during this quarter where consumption of contaminated food was suspected or confirmed as the primary mode of transmission (Table 2). These outbreaks affected 469 people and resulted in 22 hospitalisations. There were 3 reported deaths during these outbreaks. This compares with 28 outbreaks for the 3rd quarter of 2009¹ and a 5-year mean of 26.8 outbreaks for the 3rd quarter between 2005 and 2009.

Salmonella was the aetiological agent for 12 outbreaks during this quarter, with *S. Typhimurium* being the most common serotype ($n=11$). There was 1 outbreak due to *S. Virchow* phage type 8 (Table 2.)

Of the remaining 22 outbreaks, seven were due to foodborne toxins, including 3 ciguatera fish poisoning, 2 *Clostridium perfringens* outbreaks, 1 histamine poisoning and 1 *Staphylococcus aureus* outbreak. There were 3 outbreaks due to norovirus and 1 outbreak due to *Campylobacter* infection. Eleven outbreaks were of unknown aetiology.

Eleven of the foodborne or suspected foodborne outbreaks (32%) reported in this quarter were associated with food prepared in aged care facilities, 9 (27%) with food prepared in restaurants, 3 (9%) in private residence and in 3 outbreaks (9%) the foods were associated with contaminated primary produce. Single outbreaks were associated with foods prepared in a range of other settings.

To investigate these outbreaks, sites conducted 5 cohort studies, 1 case control study and collected descriptive case series data for 23 investigations. In 5 outbreaks, no individual case data were collected. As evidence for the implicated food vehicle, investigators collected microbiological evidence in 2 outbreaks and analytical epidemiological evidence in 5 outbreaks. Descriptive evidence only was obtained in 27 outbreaks.

The following jurisdictional summaries describe key outbreaks and public health actions that occurred in this quarter.

Table 2: Outbreaks of foodborne disease reported, 1 July to 30 September 2010 (n=34), by OzFoodNet sites

State or territory	Month of outbreak	Setting prepared	Agent responsible	Number affected	Hospitalised	Evidence	Responsible vehicles
ACT	September	Restaurant	Unknown	8	0	D	Unknown
NSW	July	Aged care facility	<i>Salmonella</i> Typhimurium	7	0	A	Unknown, possibly minced or pureed diet
	July	Private residence	<i>S. Typhimurium</i> (MLVA: 3-9-7-13-523)	9	5	D	Unknown, possibly mousse cake with raw eggs
	August	Restaurant	<i>S. Typhimurium</i> phage type 9 (MLVA: 3-21-12-13-523)	9	Unknown	D	Unknown
	August	Restaurant	<i>S. Typhimurium</i> (MLVA: 3-9-7-13-523)	14	4	M	Fried ice cream
	August	Restaurant	Unknown	11	0	D	Unknown
	August	Restaurant	Unknown	27	0	A	Suspect assorted wraps
	September	Aged care facility	<i>Clostridium perfringens</i>	8	1	D	Unknown
	September	Aged care facility	Unknown	16	0	D	Unknown
	September	Restaurant	Unknown	4	0	D	Unknown
NT	July	School	Unknown	19	0	D	Unknown
	August	Other	Unknown	62	0	D	Unknown
	August	Picnic	<i>S. Virchow</i> phage type 8	6	0	D	Unknown
Qld	July	Primary produce	Ciguatera fish poisoning	2	0	D	Spanish mackerel
	August	Primary produce	Ciguatera fish poisoning	2	0	D	Coral trout
	August	Primary produce	Ciguatera fish poisoning	4	0	D	Fish head soup
	September	Fair/festival/ mobile service	<i>Staphylococcus aureus</i>	3	Unknown	M	Rice noodle
SA	August	Institution	Unknown	8	0	D	Sandwiches
	August	Restaurant	<i>Campylobacter</i>	18	2	A	Steak with chicken liver pate
	Sept	Community	<i>S. Typhimurium</i> phage type 9	10	0	D	Unknown
Tas	July	Aged care facility	Norovirus	76	Unknown	A	Suspected pork sausage and gravy meal
Vic	July	Aged care facility	<i>C. perfringens</i>	16	0	D	Unknown
	July	Private residence	Histamine (scombroid) fish poisoning	4	0	D	Tuna
	August	Aged care facility	<i>S. Typhimurium</i> phage type 186	4	2	D	Unknown
	August	Aged care facility	<i>S. Typhimurium</i> phage type 197	23	4	D	Unknown
	August	Camp	<i>S. Typhimurium</i> phage type 9	6	1	D	Unknown
	August	Private residence	<i>S. Typhimurium</i> phage type 170	4	2	D	Eggs
	September	Aged care facility	Unknown	12	0	D	Unknown

Table 2: Outbreaks of foodborne disease reported, 1 July to 30 September 2010 (n=34), by OzFoodNet sites, continued

State or territory	Month of outbreak	Setting prepared	Agent responsible	Number affected	Hospitalised	Evidence	Responsible vehicles
WA	July	Aged care facility	Unknown	6	0	D	Unknown
	July	Restaurant	Norovirus	30	0	A	Lasagne
	August	Aged care facility	S. Typhimurium phage type 170 PFGE 11	7	0	D	Unknown
	August	Restaurant	S. Typhimurium phage type 170 PFGE 11	3	1	D	Unknown
	September	Aged care facility	Unknown	10	0	D	Unknown
	September	Military	Norovirus	21	0	D	Unknown

A Analytical epidemiological association between illness and one or more foods.

D Descriptive evidence implicating the suspected vehicle or suggesting foodborne transmission.

M Microbiological confirmation of agent in the suspected vehicle and cases.

Australian Capital Territory

There was 1 reported outbreak of foodborne or suspected foodborne disease reported during the quarter.

An outbreak affected 8 people in 2 separate groups who ate a variety of foods at a Chinese restaurant in September. Cases reportedly suffered diarrhoea, vomiting, fevers, chills, abdominal pain and headaches following consuming meals served on the same evening. Symptom onset occurred around 15–21 hours after eating, with illness lasting around 5 days. Cases were unwilling to assist further in the investigation and, as no faecal specimens were submitted, the aetiology remained unknown. An environmental health inspection identified a number of potential issues including inappropriate storage of cooked and raw products in the cool room as a possible source of cross contamination.

New South Wales

There were 9 reported outbreaks of foodborne or suspected foodborne illness during the quarter.

In August, two groups of diners reported developing symptoms of gastroenteritis after consuming meals from a Chinese restaurant over a 1-week period. In addition, active case finding identified an additional 2 people (related) who also reportedly ate at the same restaurant during the exposure period. In total, 14 of 15 people developed symptoms consistent with salmonellosis, with 6 stool specimens positive for *S. Typhimurium* (MLVA: 3-9-7-13-523). Food common to all cases was deep fried ice cream, made with unpasteurised whole egg. *S. Typhimurium* (MLVA: 3-9-7-13-523) was isolated from samples of raw and cooked deep fried ice cream. The New South Wales Food Authority issued a formal warning letter to the premises requesting that raw egg no longer be used in preparing deep fried ice cream.

All 9 guests became ill a median of 10.5 hours after consuming both home-made and commercially prepared foods served at a birthday party in July. Three stool specimens collected from party attendees were positive for *S. Typhimurium* (MLVA: 3-9-7-13-523). A homemade white chocolate mousse cake made with a raw egg filling is suspected to have been the cause of illness, with eight of 9 people consuming the cake. However, no cake samples were available for microbiological analysis.

In July, an outbreak of gastroenteritis affected six of 125 residents and 1 of 160 staff from all four wards in an aged care facility. The illness onsets of cases were spread over a 1-week period. Seven stool specimens were collected, with *S. Typhimurium* (MLVA: 3-9-7-13-523) isolated in specimens from 5 residents.

A cohort study found an association between the consumption of minced or pureed diet and illness (RR 9.53, 95% CI 1.11–82.12), however, caution is required when interpreting this result given a number of possible confounding factors. The New South Wales Food Authority collected a number of environmental swabs and food samples during their environmental investigation, which were negative for *Salmonella* spp. No significant food hygiene or food safety issues were identified during the inspection. The source of the outbreak remains unclear, although a foodborne source was suspected.

A local public health unit identified an outbreak of gastrointestinal illness affecting 9 people in August. One person with *S. Typhimurium* (MLVA: 3-21-12-13-523) was interviewed upon notification, as this MLVA profile had not been previously reported in New South Wales. A restaurant in rural New South Wales, close to the Victorian border was implicated as the source of the salmonellosis. Other cases included 3 employees at the same restaurant (reported by the Victorian Department of Health) and a 4-month-old baby whose parents ate at the restaurant. Five cases were confirmed as having *S. Typhimurium* phage type 9 infection. The cases ate at the restaurant over a 2-day period, with a variety of meals consumed. It was reported that the chef of the restaurant had symptoms of gastroenteritis 2 days prior to the time when cases were likely to have been exposed, but this was not confirmed. No formal epidemiological or environmental investigations were conducted due to the length of time that had elapsed since the onset of cases' illness.

In September, eight of 48 residents of an aged care facility became ill with symptoms including diarrhoea and vomiting, with illness onsets spread over a 6-day period. Four stool specimens were collected with *C. perfringens* enterotoxin A detected in two and an additional specimen was culture-positive for the bacterium. Affected residents were accommodated in two separate wards and although both wards were serviced by the same kitchen, different menus were provided to each ward. The New South Wales Food Authority conducted an environmental investigation of the kitchen, but no food vehicle or contributing factors that may have allowed *C. perfringens* to multiply in food were identified.

Twenty-seven of 45 people (61%) became ill with vomiting and diarrhoea a median of 37 hours after attending a catered meeting at a licensed club in August. Two specimens were collected which were negative for viral and bacterial pathogens. A cohort study was conducted, and an association between illness and the consumption of wraps (combined variable of chicken wraps and vegetable wraps) was found (RR 2.24, 95% CI 1.21–4.16). No ill food handlers were identified. Given the clinical

profile of cases and the onset times of illness, a viral point source outbreak was suspected, quite possibly associated with the consumption of assorted wraps. However, no pathogen was detected in stool or food and the aetiology remained unknown.

Eleven of 80 people attending a 21st birthday party at a hotel in August were ill with diarrhoea and vomiting. No specimens were collected. There were no reports of illness in functions held at the same venue on the same night (some meal items shared). It is suspected that this was a foodborne outbreak, however an environmental source or person-to-person transmission cannot be discounted and the aetiology remains unknown.

In September four of 8 people who ate a meal at a club, reported symptoms of diarrhoea and abdominal pain with median illness onsets 11 hours later. No other events or meals were common to all 4 cases. No specimens were collected. A council inspection identified problems with defrosting potentially hazardous foods, and overstocking and storage of foods in a freezer and cool room. Based on the clinical profile of cases, onset times of illness and the findings of the environmental investigation, a point source outbreak of a toxin-mediated pathogen was suspected, but the aetiology remains unknown.

In September, 16 of 150 aged care facility residents became unwell with a diarrhoeal illness over a 4-day period (onset of illness for 82% of residents were on a single day). Five specimens were negative for bacteria, viruses and toxins. The New South Wales Food Authority conducted an environmental investigation and a review of the menu, but no aetiology or particular food vehicle for the outbreak could be identified.

Northern Territory

There were 3 reported outbreaks of foodborne or suspected foodborne illness during this quarter.

Whilst participating in a rally drive held across the Top End of the Northern Territory in August, 62 of 105 participants reported a predominantly diarrhoea only illness. Food was purchased or consumed in a variety of different settings during the rally. No common pathogen was identified from the 5 stool samples submitted, but the isolation of *Hafnia alvei* from two samples was of interest. Food samples were negative for common pathogens. No formal epidemiological study was undertaken due to the poor response rate to the initial outbreak questionnaires.

An outbreak in a school holiday care program affected 19 people in July. Epidemiology was suggestive of a point source foodborne outbreak. The

aetiological agent was unknown but suspected to be viral. No clinical specimens or food samples were collected.

An outbreak of *S. Virchow* phage type 8 was investigated in a family of 6 persons travelling in the Northern Territory in August. All 6 family members became ill at the same time and *S. Virchow* phage type 8 was detected in all 4 of the stool samples submitted. The food vehicle is unknown.

Queensland

There were 4 reported outbreaks of foodborne or suspected foodborne illness during this quarter.

Two cases of suspected ciguatera fish poisoning were reported in July following the consumption of Spanish mackerel. The cases experienced symptoms including vomiting, diarrhoea, reversed temperature sensation and numbness/tingling of extremities. The fish was purchased from a local seafood retailer in Townsville.

Four family members became ill in August, with suspected ciguatera fish poisoning following the consumption of a home cooked curry that was prepared using a 2 kg fish head. Onsets of illness were between 3 and 12 hours after the meal. The species of fish used in the preparation of the curry was unable to be determined during investigations. The fish head was purchased from a local retailer in Brisbane. A traceback investigation was unable to be conducted.

Two family members became ill with suspected ciguatera fish poisoning after consuming coral trout. The cases experienced symptoms including reversed temperature sensation, numbness/tingling of extremities, diarrhoea and muscle pain approximately 11 hours after the meal. The fish was purchased from a local seafood retailer in Rockhampton and had been caught off Mackay.

At least 3 people reported illness with symptoms including vomiting, diarrhoea and abdominal cramps following the consumption of rice noodles at a multi-cultural festival held in Townsville in September. The cases experienced illness approximately 2 to 6 hours after consuming the noodles. *Staphylococcus aureus* ($>2.5 \times 10^7$ org/g) and staphylococcal enterotoxin were detected in rice noodle samples collected from the venue. A moderate growth of *Staphylococcus aureus* was also detected from a single faecal specimen that was collected 3 days post onset. No enterotoxin was detected in this sample.

South Australia

There were 3 reported outbreaks of foodborne or suspected foodborne illness during this quarter.

An outbreak of foodborne illness was investigated amongst patrons who attended a function and ate from a set menu at a restaurant in August. A total of 6 confirmed cases of *Campylobacter* infection and 12 presumptive cases were identified. Results from a cohort study conducted amongst attendees ($n=32$) at the function indicated that there was a statistically significant association between illness and eating steak with chicken liver pate (RR=6.65; 95% CI 1.69–26.23). Food samples and environmental swabs were negative for *Campylobacter*. It was hypothesised that *Campylobacter* may have entered the kitchen through home grown eggs that were covered with mud and chicken faeces and that cross-contamination with the steak meal may have occurred.

Eight of 11 people who attended a training function in August became ill with vomiting and diarrhoea of a short duration. Symptom onset was 24–60 hours after the lunch served at the training session. A faecal sample was collected from 1 case but no agent was identified. A cohort study failed to implicate any particular food item. One of the people who prepared the sandwiches and wraps was ill two days before the training session. It was hypothesised that either the sick food handler may have contaminated the food served at lunch or an attendee was incubating the illness on the day of the lunch.

A community outbreak was investigated in September with 10 cases of *Salmonella* Typhimurium phage type 9 reported within a 2-week period. Hypothesis generating interviews found that four of those cases were linked to a common restaurant. An environmental inspection of the premises was conducted and food samples were collected. The restaurant served battered ice cream and battered bananas (foods commonly known to contain raw or lightly cooked egg), but none of these food samples tested positive for *Salmonella*. Also within this cluster of *S. Typhimurium* phage type 9, there was a small social cluster of 3 children (2 siblings and 1 neighbour) who regularly played together. It is likely that transmission of the bacterium amongst this group was person-to-person.

Tasmania

There was 1 reported outbreak of foodborne or suspected foodborne illness during this quarter. In an aged care facility, 49 of 221 residents and 21 of 96 staff reported developing symptoms of gastroenteritis. The majority of residential cases (73%) occurred within a 7 hour period, while half the staff

cases occurred 3 days later. The median duration of symptoms was approximately 24 hours. Eleven samples were collected and seven tested positive for norovirus. There was difficulty in obtaining detailed food histories from those in care due to a high prevalence of dementia. However, the aged care facility's kitchen also delivered meals to the community. Six of the 36 meal recipients interviewed, reported developing symptoms of gastroenteritis. Persons who became ill were more likely to have reported consuming pork sausages and gravy (4/7, attack rate 57%, crude relative risk 3.71%, 95% CI 0.95, 14.55). The epidemiological evidence suggests that the aged care facility was the point source of this outbreak of norovirus with the likely initial route of transmission being foodborne rather than person-to-person. The reporting of illness in delivered meal recipients and the association between illness and one of the delivered meals also point to food as being the likely route of transmission.

Victoria

There were 7 reported outbreaks of foodborne or suspected foodborne illness during this quarter.

An emergency department registrar notified 2 cases of suspected scombroid fish poisoning in July. Investigations revealed that these 2 cases and another 2 people who were friends of these cases had consumed tuna steaks that were purchased from a fish retailer. All 4 people developed typical symptoms of histamine poisoning approximately 1 hour after consuming the tuna. There were some temperature control issues at the retail premises but as it was not possible to trace the supplier of the tuna, temperature control of the fish through the supply chain was unable to be assessed.

An outbreak of diarrhoea in an aged care facility that was notified in July manifested as 2 separate clusters, 2 weeks apart. Five residents and 1 staff member were affected in the 1st cluster, and all had an onset of illness over the same 24 hour period. Two faecal specimens were collected and one was positive for *C. perfringens* enterotoxin. Two weeks later in the 2nd cluster, 9 residents and 1 staff member were affected, with eight of the cases having an onset in the same 28 hour period. One case from the 2nd cluster had a faecal specimen positive for *C. perfringens* enterotoxin. Food processes were reviewed including vitamising of meals but no food source could be determined.

In August, 3 of 21 residents and 1 staff member of an aged care facility were notified to the Communicable Disease Prevention and Control Unit (CDPCU) with vomiting and/or diarrhoea. Two of the family members were subsequently found to have

Salmonella infection, which was later typed as *S. Typhimurium* phage type 186. Investigators were unable to identify the source of the outbreak.

Four members of the same family were notified with *S. Typhimurium* phage type 170 infection in August. Investigation revealed that three of the cases (a father and his 2 children) shared a meal of eggs on toast, prepared with runny yolks, on their day of onset. *S. Typhimurium* phage type 170 was isolated from a rinse of leftover eggs sampled from the home. The 4th case was the grandmother who was likely to have been a secondary case as she had cared for her sick grandchildren and her onset was 6 days after the other cases.

The CDPCU was notified of an outbreak of gastroenteritis at an aged care facility in August. Twenty-one residents and 2 staff members were affected, and 10 were subsequently confirmed as having *S. Typhimurium* phage type 197 infection. Two residents were reported to have died during the outbreak. Onsets ranged over a 16 day period suggesting an ongoing source of contamination. Although it was not able to be proven, it was suspected that one of the blenders was not being effectively cleaned and sanitised after being used to process uncooked foods such as eggs. This potentially contaminated piece of equipment was then used to blend/whip ready to eat food such as cream.

An outbreak of gastroenteritis occurred amongst a group of attendees at a camp facility in August. Forty-one of 55 people who attended the camp were interviewed with a structured questionnaire containing information about foods consumed. Six camp participants developed symptoms of diarrhoea after the camp and two were confirmed with *S. Typhimurium* phage type 9 infection. A cohort analysis did not find any association between consumption of any of the food items and illness. The group self-catered and either prepared food at home prior to travelling to the camp or prepared some foods in the kitchen at the campsite. The menu was vegetarian but there were foods containing eggs that were either eaten uncooked (hedgehog slice) or possibly undercooked (rice balls). No leftover foods were available for testing to assist with finding a source for this outbreak.

An outbreak of diarrhoea occurred amongst 11 residents and 1 staff member of an aged care facility in September. The majority of cases had an onset of illness within a 24-hour period of each other. One faecal specimen was collected, which was positive for *C. perfringens* enterotoxin. Investigators were unable to identify a food source for this outbreak.

Western Australia

There were 6 reported outbreaks of foodborne or suspected foodborne illness during this quarter.

One outbreak resulted in 3 notified cases of *S. Typhimurium* phage type 170, PFGE type 11, in August. The 3 people became ill after eating dinner separately at an Italian restaurant with the duration of illnesses ranging between 6 and 8 days. One case could not recall what food was eaten, 2 cases ate squid and one of these cases ate raw egg aioli with the squid. The median incubation period was 14.5 hours. An environmental investigation did not detect any food handling malpractices and the raw egg aioli was made fresh each day. The eggs used at the restaurant were sourced from two egg producers, one of which had been linked previously to several other raw egg outbreaks due to *S. Typhimurium* phage type 170, PFGE type 11. The implicated egg producer is assisting the Western Australian Department of Health to assess the risk of egg contamination and the identification of any possible system improvements.

In August, seven of 63 residents at an aged care facility had diarrhoea with onsets over a 4 day period and 4 of 7 cases were diagnosed with *S. Typhimurium* phage type 170, PFGE type 11. One case was symptomatic with gastroenteritis when they died from myocardial infarction (cause of death as reported on the death certificate). This type of *S. Typhimurium* has been identified in egg-associated outbreaks linked to food premises in 2009 and 2010, which had been supplied with eggs by one Western Australian producer. However, in this instance the eggs used in the aged care facility were from a different supplier from another jurisdiction. From the information obtained, residents did not consume any raw egg food products. The ill residents lived in three different wings of the facility and it was reported that these residents would not have had contact with each other. The environmental investigation found that the head chef had unsatisfactory hand hygiene and food handling practices. No swabs of the food preparation area were positive for *Salmonella*.

An outbreak of norovirus was investigated amongst 30 of 45 people from a club who became ill after attending a dinner at a reception centre in July. One specimen was collected and was positive for norovirus. The dinner was a buffet with 38 different cold and hot food and drink exposures. Twenty-nine attendees were enrolled in a case control study which showed a significant association between illness and consumption of lasagne (OR 7.2, CI 1.2– 42.6). It was reported that the lasagne was hot when served. Diners reported that the plates used for main meals were dirty underneath. The median incubation period was 47 hours (range 11–60 hours). No staff at

the reception centre reported illness and an environmental investigation found staff had good general knowledge about safe food handling practices.

A suspected foodborne outbreak was investigated at an aged care facility in July. Six of 109 residents were unwell, with diarrhoea only. Illness onsets were over a 24-hour period with symptoms resolving within a day. Cases resided in three different wings of the facility. Two faecal samples were negative for common bacterial and viral pathogens and *C. perfringens*, and the aetiology remained unknown.

A suspected foodborne outbreak was investigated at an aged care facility in September, with 10 of 41 residents experiencing symptoms of diarrhoea only. Illness onsets were over a 12 hour period with symptoms resolving within 1 day. Ill residents lived on four different floors and ate a range of food consistencies (vitamised, soft and normal). Two faecal samples were negative for common bacterial and viral pathogens and *C. perfringens*, and the aetiology of the outbreak remained unknown.

A suspected foodborne norovirus outbreak in September affected 21 of 2,000 people who worked at a defence force base. Two stool specimens were positive for norovirus. Seventeen cases were interviewed, and the common exposure was salad sandwiches prepared in a central mess and consumed for lunch at different locations. Illness onsets ranged between 7.5 and 35 hours after consuming the sandwiches. It was suspected that a salad ingredient contaminated by an infected food handler was the source of illness, although this was not investigated further. After the outbreak, an education session on safe food handling practices was conducted with all food handlers who worked at the base.

Multi-jurisdictional outbreak investigation

A previously reported multi-jurisdictional investigation into an outbreak of *Listeria monocytogenes*² was stood down on 13 September 2010, with more than 2 incubation periods since the onset of the last outbreak case on 23 May 2010. The number of outbreak cases remained at nine and the suspected source being rockmelon and/or honeydew melon, eaten fresh or used in the preparation of fruit salads.

Cluster investigations

During the 3rd quarter of 2010, OzFoodNet sites investigated 52 clusters with the majority due to *S. Typhimurium*. Other clusters investigated include *S. Montevideo*, *S. Infantis*, *Campylobacter* and *S. sub-species I ser 4,12:i:-* and *S. sub-species I ser 4,5:i:-*. In forty of the clusters investigated, the causative agent remained unknown.

South Australia investigated a cluster of *S. Typhimurium*, which was untypeable. This investigation followed a notification from the Australian Salmonella Reference Centre of 6 cases confirmed in 1 week and a further case notified subsequently. Five of the 7 cases were aged 3 years or under and four of these children required hospitalisation. Hypothesis generating interviews found a link to a common event for two of the cases and it was suspected that two other cases were also linked to the event. The cluster occurred within a small ethnic community.

Comments

The number of foodborne outbreaks reported during the quarter ($n = 34$) exceeds the average number during the same quarter over the past 5 years ($n = 26.8$) but is similar to the number reported during the previous quarter (35).²

Of note is that there was a 47.6% increase in *Salmonella* notifications nationally during the quarter compared with the mean notifications for the same quarter between 2005 and 2009. Between 1 July and 30 September 2010, there were 1,373 cases of *Salmonella* nationally by date of diagnosis (a derived field) compared with a 5-year mean of 654 cases. Jurisdictions also reported increased *Salmonella* notifications. In Western Australia, *Salmonella* infections were 29% higher during the quarter compared with the 5-year mean (254 notifications between 1 July and 30 September compared with an average of 202 notifications). This has been attributed entirely to an increase in the number and proportion of infections that were overseas acquired. Of the 159 overseas-acquired *Salmonella* infections in Western Australia during the quarter, 73% (117) reported travel to Indonesia. These cases were commonly of *S. Enteritidis*, *S. Weltevreden* and *S. Paratyphi* by Java. In Victoria, where *Salmonella* notifications during the quarter were increased by 73% (up to 451 from 261) compared with the 5-year mean, there were increases in the most common *S. Typhimurium* sub-types (phage types 9, 170 and 135) and *S. Infantis*.

During the quarter, the Department of Health and Human Services (DHHS), Tasmania, began sampling for the *Campylobacter* Multi-Locus Sequence Typing Project. The project is a collaboration of the Microbiological Diagnostic Unit (MDU), University of Melbourne; Department of Primary Industries, Parks, Water and Environment, Tasmania; Diagnostic Services, Tasmania; and OzFoodNet. *Campylobacter* spp. are isolated from human clinical cases, food, water and animal faecal specimens, along with obtaining clinical case data through doctor assessment forms and case interviews. From 1 August to 30 September 2010, 93 cases of *Campylobacter* infection were notified. During the

same period, *Campylobacter* spp. had been isolated from 60% of raw chicken samples (48/80), 1.3% of raw red meat samples (1/78), 16% of offal samples (11/67), and 30% of freshwater samples (10/33). All human, food, water and animal isolates will be forwarded to MDU for genotyping at the completion of the sampling period in October 2010.

OzFoodNet conducted a structured audit of the response to the multi-jurisdictional outbreak of locally-acquired hepatitis A that occurred between March 2009 and March 2010. As reported previously, the outbreak was associated with the consumption of semi-dried tomatoes.³ The audit noted that investigators were able to find the source of the infections quite early and take appropriate actions. This was despite the difficulties of investigating an infection with a long incubation period, and that health departments and epidemiologists were already stretched with the response to 2009 pandemic influenza A (H1N1) between mid-May and late September 2009. National and international communications were important during this investigation, and the outbreak demonstrated the value of the highly functional and established national and international networks (OzFoodNet, the National Food Incident Response Protocol group and the WHO International Food Safety Authorities Network). The audit identified the need for states and territories to maintain a sustained epidemiological workforce and for surge capacity during a multi-jurisdictional outbreak investigation.

OzFoodNet and the Communicable Diseases Network Australia have developed national guidance regarding outbreaks of norovirus and suspected viral gastroenteritis, in response to increasing reports of such outbreaks. The *Guidelines for the Public Health Management of Gastroenteritis Outbreaks Due to Norovirus or Suspected Viral Agents in Australia* are designed to complement existing state and territory guidelines and are available from: <http://www.health.gov.au/internet/main/publishing.nsf/content/cda-cdna-norovirus.htm>

A limitation of the outbreak data provided by OzFoodNet sites for this report is the potential for variation in categorisation of the features of outbreaks depending on investigator interpretation and circumstances. OzFoodNet continues to standardise and improve practices through its Outbreak Register Working Group and workshops.

The National Surveillance Committee, OzFoodNet and the Public Health Laboratory Network continue to work toward harmonisation of *Salmonella* typing practices between jurisdictions that will aid the identification of outbreaks. Changes in the incidence of foodborne outbreaks should be interpreted with caution due to the small numbers each quarter.

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