OzFoodNet: enhancing foodborne disease surveillance across Australia: Quarterly report, July to September 2005

The OzFoodNet Working Group

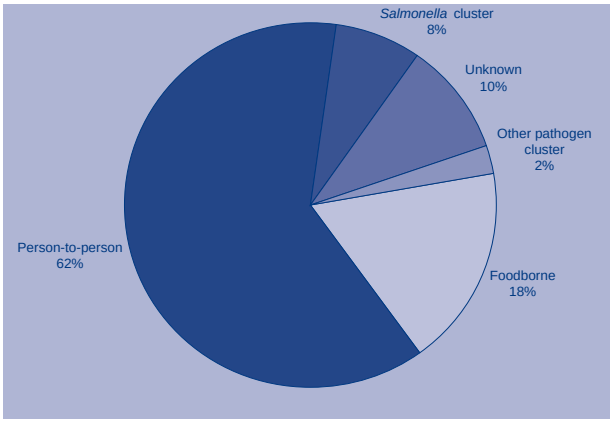
Introduction

The Australian Government 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 around the country.

This report summarises the occurrence of foodborne disease outbreaks and cluster investigations between July and September 2005. Data were received from OzFoodNet representatives in all Australian states and territories and a sentinel site in the Hunter/New England region of New South Wales. The data in this report are provisional and subject to change, as results of outbreak investigations can take months to finalise. We would like to thank the investigators in the public health units and state and territory departments of health as well as public health laboratories and local government environmental health officers who collected data used in this report.

During the third quarter of 2005, OzFoodNet sites reported 170 outbreaks of gastroenteritis. Outbreaks of gastroenteritis are often not reported to health agencies or the reports are delayed, meaning that these figures significantly under–represent the true burden of these infections. In total, these outbreaks affected more than 2,435 people and resulted in 90 persons being admitted to hospital. No deaths were reported. As has been the case in previous reports, the majority (62%, n=105) of outbreaks resulted from infections suspected to be spread by person-to-person transmission (Figure). Forty–two per cent of these person-to-person outbreaks occurred in aged care facilities, 38 per cent in child care centres and 10 per cent in hospitals.

Figure. Mode of transmission for outbreaks of gastrointestinal illness reported, July to September 2005, by OzFoodNet sites



Foodborne disease outbreaks

There were 30 outbreaks of illness where consumption of contaminated food was suspected or proven to be the primary mode of transmission. These outbreaks affected 209 people. This compares with 25 outbreaks for the third quarter 2004 and 27 outbreaks in the second quarter of 2005.

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All data are reported using the date the report was received by the health agency.

Ciguatoxin was responsible for four outbreaks and scombroid poisoning for three outbreaks during the quarter. *Campylobacter* and *Clostridium perfringens* were each responsible for two outbreaks. *Salmonella* Typhimurium 9, *Salmonella* Typhimurium 135a, *Salmonella* Infantis, *Staphylococcus aureus*, and norovirus each caused an outbreak during the third quarter of 2005. No aetiological agent was identified for the remaining 43 per cent (13/30) of outbreaks.

Sixteen of the outbreaks reported in the quarter were associated with meals served in restaurants, six with food prepared in private residences but includes four instances that can be attributed to the contamination of the primary produce (fish), three within aged care facilities, and two with food prepared by commercial caterers. Single outbreaks were associated with food prepared at a camp, a takeaway store, and an unknown setting. One of the outbreaks occurred in June, seven in July and eleven in both August and September.

To investigate these outbreaks, sites conducted six cohort studies and one case control study. For 23 outbreaks, only descriptive data were collected. Investigators obtained microbiological evidence linking a food vehicle to illness in two outbreaks and analytical epidemiological evidence in six outbreaks. For the remaining outbreaks, investigators obtained descriptive epidemiological evidence implicating the food vehicle or suggesting foodborne transmission.

In New South Wales there were 14 outbreaks of foodborne illness reported during the quarter. The aetiological agent was identified in three of these outbreaks. *Campylobacter jejuni* affected five people after they had eaten a restaurant meal that included chicken and lamb dishes. Ten residents in an aged care facility showed symptoms consistent with *Clostridium perfringens* infection after a meal of chicken with bacon and mushroom sauce, on rice. No food vehicle was identified for an outbreak of *Salmonella* Infantis that affected nine people during a camp. An aetiological agent was not identified in the remaining 11 outbreaks, nine of these involved restaurants and affected between two and eight patrons. An aged care facility (12 cases) and a private residence (11 cases) were the setting for the other two outbreaks in New South Wales during the quarter.

Queensland reported nine outbreaks of foodborne illness for the third quarter. Three outbreaks were caused by ciguatera fish poisoning following meals of Spanish mackerel (2 people), trevally (2 people) and black kingfish (5 people). All three fish were bought at retail outlets and then cooked at home. No food vehicle was identified in two outbreak investigations where *Campylobacter jejuni* infected three people after a common meal at an aged care facility and two people from the same household in September. A restaurant meal of yellow-fin tuna caused scombroid poisoning in two people. An outbreak affected three people after a restaurant meal of beef Rendang and their symptoms were consistent with *Clostridium perfringens* infection. *Clostridium perfringens* were detected at diagnostic levels in stool samples from two cases. The beef Rendang (food vehicle) was cooked on Sunday afternoons in large saucepans; stored for several days in a cold room and re-heated as required. A meal of chips and gravy from a takeaway hot food shop led to *Staphylococcus aureus* infection in two people who had staphylococcal enterotoxin detected in faecal specimens.

During the quarter, Queensland reported an outbreak of *Salmonella* Typhimurium 9 among students and teachers visiting from the United States of America. Eggs used in a dessert were suspected to have caused this outbreak and affected 40 cases (31 students, 3 teachers,1 tour guide and 5 restaurant staff) with 29 people requiring treatment in hospital. Contamination of the eggs and inadequate cooking temperature for the desert are the two main features that most likely contributed to the outbreak.

Victoria reported five outbreaks of foodborne disease for the quarter. There were two outbreaks of scombroid poisoning: one in July at a restaurant affected two people after a meal of tuna, and the other in August from fish (species unknown) purchased at a retail outlet and cooked at home which led to illness in two people. Snapper fillets purchased from a Fiji market and transported frozen to Australia by a relative caused five cases of ciguatera poisoning in a family. An aetiological agent was not identified in the remaining outbreak involving 11 people who had eaten Spanish mackerel from a restaurant in September. An outbreak of norovirus affected at least 36 people who had consumed assorted sandwiches at a catered function.

The Australian Capital Territory reported two foodborne outbreaks. An outbreak affected two separate groups that had dined at a Sydney restaurant, two people from one group and one from the other group became ill. *Salmonella* Typhimurium 135a infection caused the outbreak, but investigators were unable to identify the food responsible for the outbreak. In the second outbreak, at least seven people became ill following a catered function. Those that were ill were more likely to have eaten strawberries, smoked salmon and/or grapes.

Comments

During the third quarter of 2005, there were seven identified outbreaks of fish poisonings. Six of these were from fish purchased from retail outlets. It is a concern that ciguatera cases have resulted from commercial suppliers, as most cases in recent years

have occurred in association with fish caught by amateur fishermen.[1] The three outbreaks of histamine poisoning were associated with fish consumed at restaurants (2 outbreaks) and fish bought at a retail outlet and cooked at home (1 outbreak). At least two of these were tuna originating from Indonesia. It is likely that there would have been many more cases of scombroid poisoning occurring, as the illness is often mild and difficult to recognise.[2]

There were two outbreaks of *Clostridium perfringens* and another outbreak where this pathogen was suspected as the cause. Two of these outbreaks occurred in aged care facilities where *Cl. perfringens* is a common cause of outbreaks of diarrhoea amongst residents in these settings. The third outbreak in Queensland involved a curry that was stored for several days in a cool room and re-heated as required. *Cl. perfringens* commonly causes outbreaks where there is poor temperature control of meals, such as curries.[3]

During the quarter, OzFoodNet continued an investigation into a multi-state outbreak of *Salmonella* Hvittingfoss occurring in Queensland, New South Wales, the Australian Capital Territory and Victoria. No source for the outbreak was identified. For further information see the summary of the investigation in this issue of *Communicable Diseases Intelligence*.[4] Jurisdictions conducted 13 other investigations into time, place, person clustering of *Salmonella* infections, including serotypes Anatum, Bovismorbificans 24, Muenchen, Newport, Oranienburg, Poona, Saintpaul, Typhimurium 12, Typhimurium 135a, Typhimurium 170, Typhimurium 195, Typhimurium U302, Typhimurium U307. The Northern Territory also reported an increase in shigellosis, and hepatitis A, while South Australia reported an increase in hepatitis A in remote areas of the state. Victoria reported clustering of cryptosporidium, including three small outbreaks, two of which were associated with swimming pools and the other with touching animals at a festival.

References

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4. Oxenford C, Black A, Bell R, Munnoch S, Irwin M, Hanson R, *et al*. Investigation of a multistate outbreak of *Salmonella* Hvittingfoss using a web based case reporting form. *Commun Dis Intell* 2005:29:379-381.

Table 1. Outbreaks of foodborne disease reported by OzFoodNet sites,* July to September 2005

State	Month of outbreak	Setting prepared	Infection	Number affected	Evidence	Responsible vehicles
ACT	July	Restaurant	*Salmonella* Typhimurium 135a	3	D	Unknown
	August	Caterer	Unknown	7	A	Strawberries, smoked salmon, grapes.
NSW	June	Restaurant	Unknown	8	D	Unknown
	July	Restaurant	Unknown	2	D	Unknown
		Restaurant	Unknown	2	D	Common foods included steamed rice, miso, and chicken yakatori.
	August	Restaurant	Unknown	6	D	Unknown
		Restaurant	Unknown	2	D	Suspected chicken, rice or chilli sauce
		Restaurant	*Campylobacter jejuni*	5	D	Suspected chicken or lamb dishes
		Restaurant	Unknown	3	D	Unknown
		Aged care	*Clostridium perfringens*	10	D	Chicken with bacon and mushroom sauce, on rice
		Aged care	Unknown	12	D	Pureed corned beef dish
	September	Restaurant	Unknown	9	A	Ham or ham and pineapple pizza
		Restaurant	Unknown	2	D	Suspected beef steak
		Camp	*Salmonella* Infantis	5	D	Unknown
		Home	Unknown	11	D	Unknown
		Restaurant	Unknown	5	D	Suspect hot roast meats from carvery
Qld	July	Restaurant	*Clostridium perfringens*	3	M	Beef Rendang
		Restaurant	*Salmonella* Typhimurium 9	40	A	Bread and butter pudding
		Restaurant	Scombrotoxin	2	D	Yellow-fin tuna
	August	Home	Ciguatoxin	2	D	Spanish mackerel
	September	Takeaway	*Staphylococcus aureus*	2	M	Chips and gravy
		Aged care	*Campylobacter jejuni*	3	D	Unknown
		Home	Ciguatoxin	2	D	Trevally
		Home	Ciguatoxin	5	D	Black kingfish
		Unknown	*Campylobacter jejuni*	2	D	Unknown
Vic	July	Restaurant	Scombrotoxin	2	A	Tuna
	August	Caterer	Norovirus	36	A	3 assorted types of sandwiches
		Home	Ciguatoxin	5	D	Fijian snapper
		Home	Scombrotoxin	2	D	Fish (unknown species)
	September	Restaurant	Unknown	11	A	Spanish mackerel

* No foodborne outbreaks reported in South Australia, Tasmania, Western Australia or Northern Territory during the quarter.

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

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

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