

OzFoodNet: enhancing foodborne disease surveillance across Australia:

quarterly report, 1 October to 31 December 2003

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 gastroenteritis outbreaks and clusters of disease potentially related to food occurring around Australia. For information on sporadic cases of foodborne illness, see Communicable Disease Surveillance, Highlights for 4th quarter 2003 in this issue of *Communicable Diseases Intelligence*.

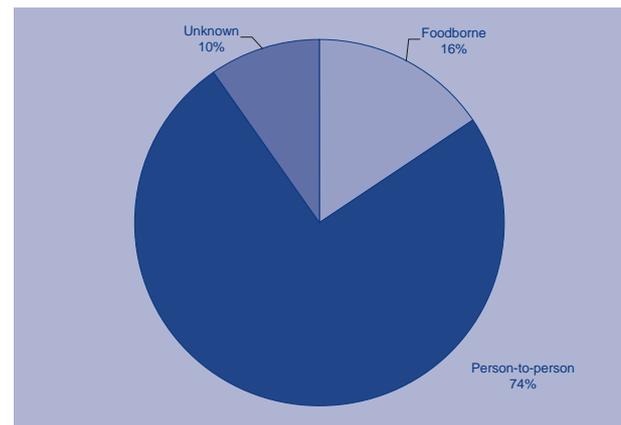
This report summarises the occurrence of foodborne disease outbreaks and cluster investigations between October and December 2003. Data were reported from all Australian state and territory jurisdictions and a sentinel site in the Hunter region of New South Wales. The data in this report are provisional and subject to change, as results of outbreak investigations can take months to finalise. We would like to thank state, territory and public health unit investigators, public health laboratories, and local government environmental health officers who contributed data to this report.

Foodborne disease outbreaks

During the fourth quarter of 2003, OzFoodNet sites reported 174 outbreaks of gastrointestinal infections (Figure). One hundred and forty-seven of these outbreaks were spread from person-to-person or were of unknown transmission affecting 3,897 persons, hospitalising 153 and causing two

fatalities. The majority of these outbreaks occurred in aged care facilities (59%), hospitals (18%) and childcare centres (8%). Outbreaks of gastroenteritis not transmitted by food have often not been reported to health agencies or the reports have been delayed, meaning that these figures significantly under represent the true burden of these infections.

Figure. Mode of transmission for gastrointestinal outbreaks reported by OzFoodNet sites, 1 October to 31 December 2003



Twenty-seven outbreaks were due to foodborne transmission compared to 21 in the previous quarter and 26 outbreaks for the same quarter in 2002 (Table). Due to Christmas celebrations, there has been a larger number of outbreaks in the fourth quarter of the year. The outbreaks affected 587 persons 33 of whom were hospitalised. There were three fatalities possibly related to contamin-

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

ated food in two outbreaks. There were seven outbreaks of *Salmonella* Typhimurium infection and five outbreaks of norovirus infection, two outbreaks of ciguatera poisoning and one outbreak each of campylobacteriosis and scombroid poisoning. The remaining 10 outbreaks were of unknown aetiology, affecting a total of 217 people. Nine of the outbreaks

occurred in association with meals at restaurants and six in association with meals prepared by commercial caterers. Nine outbreaks each occurred in October and November, while seven occurred in December 2003.

Table. Outbreaks of foodborne disease reported by OzFoodNet sites,* 1 October to 31 December 2003

State	Month of outbreak	Setting category	Agent responsible	Number exposed	Number affected	Evidence	Responsible vehicles
ACT	November	Childcare centre	Unknown	48	13	A	Vegetable pasta salad
NSW	October	Restaurant	Unknown	6	6	D	Unknown
	October	Caterer	Unknown	38	23	D	Unknown
	October	Caterer	Unknown	70	19	D	Unknown
	October	Caterer	Unknown	193	78	D	Unknown
	November	School	<i>S. Typhimurium</i> RDNC	250	19	AM	Cordial based drink
	November	Restaurant	<i>S. Typhimurium</i> 170	100	33	AM	Fried rice
	November	Health care facility	Unknown	7	3	D	Chicken schnitzel
	December	Home	<i>Eosinophilia gastroenteritis</i>	20	13	D	Unknown
December	Restaurant	Unknown	48	25	D	Unknown	
NT	October	Caterer	Norovirus	13	11	D	Curried egg sandwich
	November	Caterer	Suspected <i>Salmonella</i>	21	10	D	Spicy quail
	December	Restaurant	Norovirus genotype II	Unknown	48	A	Cooked Japanese oysters
Qld	October	Restaurant	Ciguatoxin	15	15	D	Spanish mackerel
	October	Home	<i>S. Typhimurium</i> u307	Unknown	7	D	Unknown
	October	Restaurant	Unknown	Unknown	5	D	Unknown
	November	Home	Ciguatoxin	3	3	D	Fish head soup – red emperor
	December	Home	<i>S. Typhimurium</i> 197	12	6	D	Unknown
	December	Aged care facility	<i>S. Typhimurium</i> 135a	71	47	D	Unknown – suspect raw egg
Vic	October	Takeaway	Unknown	75	28	D	Suspected vegetables and chilli dish
	November	School	<i>Campylobacter</i>	38	13	D	Unpasteurised milk or animal to person contact
	December	Hotel	Histamine poisoning	59	22	AM	Butterfish
	December	Restaurant	Norovirus	29	18	D	Unknown
	December	Hotel	<i>S. Typhimurium</i> 170	Unknown	46	A	Unknown — suspect raw eggs
WA	November	Restaurant	Norovirus	100	35	A	Oyster shooters
	November	Caterer	Unknown	26	17	D	Club sandwiches
	December	Restaurant	Norovirus	70	24	D	Unknown

* No outbreaks were reported from South Australia or Tasmania.

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.

Sites conducted 11 retrospective cohort studies and five case control studies to investigate these foodborne outbreaks. Forty per cent of outbreak investigations relied on descriptive epidemiology alone. Three outbreak investigations obtained both epidemiological evidence of an association with a food and microbiological evidence of the agent in the food. In four outbreaks investigators obtained analytical epidemiological evidence only.

During the quarter, OzFoodNet coordinated an investigation into two outbreaks of norovirus associated with imported oysters from Japan. One of these outbreaks occurred in Western Australia and was associated with oyster shooters (served in shot glasses with sauce) at a function. The other outbreak occurred in the Northern Territory and was associated with oysters cooked at a restaurant. Traceback investigations identified that both products were harvested from the same estuary system in Japan.

Two previous outbreaks of suspected norovirus associated with oysters from Japan occurred in Western Australia in August 2002 and February 2003. A recent report indicated that 54 per cent (154/287) of foodborne norovirus outbreaks in Japan were due to oyster consumption.¹ It is important for the food service industry in Australia to be aware of the concerns with these oysters, and that they must not be consumed raw. Most outbreaks have occurred when these oysters were served raw as 'shooters'. The amount of cooking required to make them safe is unknown, but may be in excess of several minutes for large oysters.²

The Victorian Department of Human Services investigated an outbreak of histamine poisoning amongst a group of people eating butterfish. Histamine poisoning has been associated with a build-up of histamine in the fish flesh following bacterial growth when the fish has been mishandled. The symptoms have included tingling or burning sensation in the mouth, rashes, lowered blood pressure, headaches, itchy skin and diarrhoea.³ Butterfish can also be associated with oily diarrhoea due to high levels of indigestible oils, which may have also caused illness in this outbreak.⁴ Victoria also reported an outbreak of 13 cases of gastroenteritis following a school camp. *Campylobacter* was isolated from two cases, and the risk of illness was higher in people who drank unpasteurised milk, although the association was not significant. Evidence has suggested that school children on excursions should not drink unpasteurised milk, as this can lead to outbreaks of campylobacteriosis. They should also be encouraged to wash their hands after coming in contact with or handling animals.

New South Wales reported two outbreaks of *Salmonella* Typhimurium during the quarter, one of which was phage type 170 and the other was an unrecognised phage pattern (RDNC). In one of these outbreaks the vehicle was suspected to be a cordial based drink contaminated by a food handler. The other outbreak was due to contaminated fried rice.

There were two outbreaks of ciguatera in Queensland affecting a total of 18 persons. In one outbreak, illness occurred following the consumption of fish head soup (red emperor) in a home, and the other followed a meal of Spanish mackerel. The Spanish mackerel was caught on a charter boat and cooked at a resort. Outbreaks of ciguatera have been common in Queensland and highlight the need for the education of amateur fishermen and charter companies.⁵ Queensland reported three outbreaks of *Salmonella* Typhimurium, all of which were of unknown cause. One outbreak of *Salmonella* Typhimurium 135 occurred in a nursing home and was particularly severe. This outbreak was suspected to be associated with feeding residents raw egg drinks, although food histories were difficult to obtain and *S. Typhimurium* 135 was not isolated from the egg-laying environment. The provision of raw egg drinks to residents of aged care facilities is inappropriate and has previously resulted in outbreaks.⁶

The Northern Territory reported three outbreaks for the quarter including an outbreak of suspected salmonellosis after a meal of quail supplied by a commercial caterer. The Australian Capital Territory reported an outbreak of gastroenteritis following a meal of vegetable pasta. There were no outbreaks of foodborne disease reported from South Australia or Tasmania during the quarter.

Cluster investigations

During the third quarter of 2003, Australian states and territories conducted several investigations into clusters of various *Salmonella* serovar infections, including *S. Oranienberg* in Western Australia; *S. Typhimurium* U290 and *S. Infantis* in Victoria; *S. Anatum*, *S. Typhimurium* 41 in South Australia; *S. Montevideo* in the Hunter; and *S. Virchow* in New South Wales.

During the quarter there was a recall of organic alfalfa sprouts and organic salad due to contamination with *S. Havana*. Other products from the same company were also positive for *S. Welikade* and *S. Orion*. All OzFoodNet sites investigated human cases of infection with these serovars for infections related to consumption of these products, but none was identified.

South Australia investigated four cases of *Yersinia pseudotuberculosis* infections in children from Adelaide. *Y. pseudotuberculosis* was isolated in three of these cases and the fourth was diagnosed serologically. Three cases had an appendectomy as a result of their illness. No source was identified for the cluster of cases. *Y. pseudotuberculosis* is a rare cause of gastroenteritis with similar clinical symptoms to infections with *Y. enterocolitica*, but its significance as a foodborne pathogen is unknown.³

There were three clusters of hepatitis A investigated during the quarter in South Australia, New South Wales and the Northern Territory, respectively. In one of the investigations, a food handler was hepatitis A IgM seropositive. A large scale public health response resulted in several hundred people receiving immunoglobulin treatment. No mode of transmission was identified for the other two clusters.

Summary

A key feature of the quarter was the significant number of outbreaks of gastroenteritis spread by person-to-person transmission, especially in outbreaks of norovirus. There were also a large number of outbreaks of foodborne illness prior to Christmas 2003. Also important have been the significant efforts to investigate outbreaks relating to oysters imported from Japan. These oyster related outbreaks highlight the importance of norovirus as a cause of foodborne gastroenteritis with potential for international spread.

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