

OzFoodNet: enhancing foodborne disease surveillance across Australia:

Quarterly report, 1 July to 30 September 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 is the first in a revised format, which reports on 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 Diseases Surveillance, Highlights for 3rd quarter 2003 (pp 552–553).

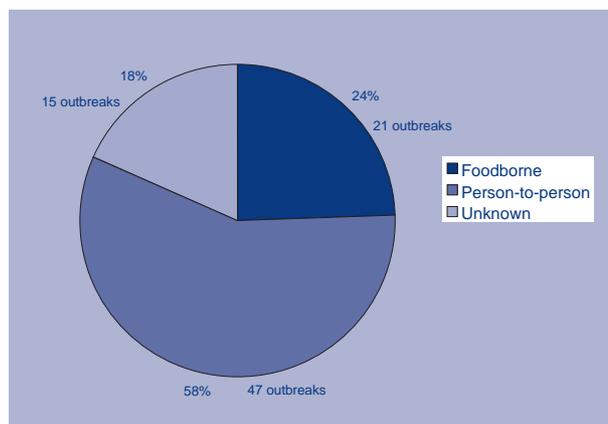
This report summarises the occurrence of foodborne disease outbreaks and cluster investigations between July and September 2003. Data were reported from all Australian jurisdictions and a sentinel site in the Hunter region. The data in this report are provisional and subject to change, as results of outbreak investigations can take months to finalise. We would like to thank state and territory investigators who contributed data to this report.

Foodborne disease outbreaks

During the third quarter of 2003, OzFoodNet sites reported 83 outbreaks of gastrointestinal infections (Figure). Sixty-two of these outbreaks were spread from person-to-person or of unknown transmission, affecting 1,523 persons, hospitalising 69 and causing two fatalities. Outbreaks of gastroenteritis not transmitted by food are often not reported to health agencies or the reports are delayed, meaning that these figures significantly under-represent of the true burden of these infections.

Twenty-one outbreaks were due to foodborne transmission compared to 11 in the previous quarter and eight outbreaks for the same quarter in 2002 (Table). The outbreaks affected 272 persons and hospitalised 13 persons. There was one fatality possibly related to contaminated food in one outbreak. There were six outbreaks of non-typhoidal *Salmonella* infection and three outbreaks each of *Clostridium perfringens* intoxication and norovirus infection. There was one outbreak each of *Staphylococcus aureus* intoxication and ciguatera poisoning. The remaining seven outbreaks were of unknown aetiology. Four of the outbreaks occurred in association with meals at restaurants or aged care facilities, respectively. Eight of the outbreaks occurred in September.

Figure. Mode of transmission for gastrointestinal outbreaks reported by OzFoodNet sites, July to September 2003



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

Table. Outbreaks of foodborne disease reported by OzFoodNet sites,* July to September 2003

State	Month of outbreak	Setting	Agent responsible	Number exposed	Number affected	Evidence	Responsible vehicles
NSW	July	Home	Unknown	7	1	D	Soccerball ham
	August	Restaurant	Unknown	11	4	D	Unknown
	August	Restaurant	<i>S. Typhimurium</i> 170	–	20	A	Tofu, eggplant & prawn dish
	August	Takeaway	<i>S. Typhimurium</i> 126 var 4	–	10	M	Pigs ear salad, ducks gizzards
	September	Restaurant	Unknown	–	4	D	Unknown
	September	Residential college	<i>S. Typhimurium</i> 135	~100	20	D	
NT	August	Bus	<i>Staphylococcus aureus</i>	5	5	D	Rice, beef and black bean sauce
	August	Home	Unknown	21	18	D	Pizza
Qld	July	Restaurant	Norovirus	70	31	A	Trifle
	August	Home	Ciguatera	5	5	D	Barracuda (<i>Sphyraena</i> spp.)
	September	Function	Norovirus	100	13	D	Unknown
	September	Picnic	Norovirus	38	15	D	Unknown
SA	September	Community	<i>S. Typhimurium</i> 4	–	6	A	Cheesecake
Vic	July	Workplace	Unknown	13	7	D	Unknown
	July	Aged Care	Unknown	120	5		Unknown
	July	Community	<i>S. Litchfield/Kinondoni</i>	–	6	M	Suspect cucumbers
	August	Community	<i>S. Montevideo</i>	–	3	M	Lebanese tahini
	September	Restaurant	Unknown	–	14	D	Unknown
	September	Aged Care	<i>C. perfringens</i>	~600	28	D	Unknown
	September	Aged Care	<i>C. perfringens</i>	30	15	D	Unknown
WA	September	Aged Care	<i>C. perfringens</i>	190	42	AM	Suspect gravy mixed into vitamised meals

* No outbreaks reported from Australian Capital Territory 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 five retrospective cohort studies and one case control study to investigate these foodborne outbreaks. The majority (65%) of investigations relied on descriptive epidemiology. One outbreak investigation obtained both epidemiological and microbiological evidence for an association with a food vehicle, in three outbreaks there was microbiological evidence only and in a further three epidemiological evidence only.

The three outbreaks of *C. perfringens* all occurred in aged care facilities. The food responsible was only determined in one of these outbreaks, which was gravy mixed into vitamised meals. Victoria reported another suspected *C. perfringens* outbreak in a nursing home, which was the third suspected foodborne outbreak in the same facility in the previous six months. *C. perfringens* outbreaks are caused by foods that have been poorly prepared and not held at the appropriate temperature. There

is an urgent need to improve food safety in aged care facilities as the elderly experience more severe outcomes as a result of foodborne infections.¹

Victoria investigated three cases of *Salmonella* Montevideo infection. Two cases were associated with the consumption of a commercially available tahini (sesame seed-based) product originating from Lebanon. The investigation triggered a recall of food products in Australia and New Zealand. New Zealand also identified people infected with *S. Montevideo* who had consumed this product. OzFoodNet and New Zealand health agencies prepared an international alert about these products on behalf of the Communicable Diseases Network Australia.² Positive tahini sampled before and after the investigation of these human infections triggered product recalls of Lebanese tahini in the United Kingdom and Canada.^{3,4}

The Victorian Department of Human Services investigated four cases of *Salmonella* Litchfield and two cases of *Salmonella* Kinondoni. This followed a survey of Vietnamese pork roll ingredients that identified cucumbers contaminated with these serovars. Four out of five Victorian cases reported eating cucumbers. One case acquired their infection overseas and one case did not record eating cucumbers. The association with cucumber consumption between human illness was not confirmed microbiologically from cucumbers that the cases had eaten. No cases were identified in other Australian states or territories.

There was an outbreak of *Salmonella* Typhimurium 4 associated with cheesecake from a bakery in South Australia (reported in this issue).⁵ Bakeries have been previously documented as a high risk setting for foodborne illness, particularly for products involving cream and custard.⁶ Food safety agencies in Australia should conduct further work to determine where breaches in food safety practices in bakeries are occurring.

New South Wales reported three outbreaks of *Salmonella* Typhimurium during the quarter. New South Wales conducted a case control study into an outbreak of 20 cases of *S. Typhimurium* 170 who had eaten a Yum Cha meal. The case control study identified an association with a fried tofu eggplant and prawn dish. Further investigations revealed that uncooked prawn meat was positive for *S. Dublin*. This imported product was subsequently recalled, even though the exact cause of this outbreak remains unknown. An outbreak of 10 cases of *S. Typhimurium* 126 was associated with takeaway consumption of pigs ear salad and ducks gizzards. An outbreak of 20 cases of *S. Typhimurium* 135 occurred in a residential training college, but no food vehicle was identified.

There were five persons affected by ciguatera poisoning in Queensland following consumption of a whole barracuda. There was 120 kilograms of this barracuda sold to a supermarket and 80 kilograms were recalled. Forty kilograms were sold to the public with no other reported cases. Outbreaks of ciguatera involving fish purchased commercially are now relatively rare and usually result from amateur fishermen catching fish from locally affected reefs. This incident highlights the need for continuing vigilance in monitoring outbreaks of ciguatera.⁷

There was also a small outbreak of *Staphylococcus aureus* intoxication in the Northern Territory following a meal of rice that had not been stored at the correct temperature.

Cluster investigations

During the third quarter of 2003, Australian States and Territories conducted several investigations into clusters of various *Salmonella* serovar infections, including *S. Havana* and *S. Anatum* in Victoria; *S. Chester*, *S. Oranienberg* and *S. Typhi* in Western Australia and *S. Typhimurium* phage type 9 in the Northern Territory.

Queensland reported a cluster of 10 cases of *Salmonella* Typhimurium 170a in South East Queensland during early July. Seventy per cent of cases lived in the Sunshine Coast area. Four of the cases were children aged less than 10 years and six were adults aged 24 years or greater. This phage type is a variant of *S. Typhimurium* 170 and had previously only been detected overseas on rare occasions. The National Enteric Pathogens Surveillance System report that this phage type has not previously been reported in either human or non-human sources in Australia (Joan Powling, personal communication, July 2003). All isolates were resistant to sulphonamides and trimethoprim, which distinguished them from standard *S. Typhimurium* 170 strains that have been sensitive to these two antibiotics to date. Sulfas and trimethoprim are registered for use in the veterinary industry. All nine isolates had identical plasmid profiles providing further evidence of a common source. No overseas travel was reported among any of the cases. Hypothesis-generating interviews did not identify any single exposure or event common to all cases, although consumption of poultry products (eggs and/or chicken meat) were reported from all cases in the two days before onset of illness. Several potential food outlets were investigated following the collation of information from the case interviews, however, there was insufficient information to conduct any further traceback of potential food vehicles.

Queensland also reported a cluster of eight cases of *S. Enteritidis* 21b var in August. Further investigation revealed that all of the positive specimens came from the same pathology laboratory and all specimens except one were collected on the same day. Two of the eight cases had a history of overseas travel, which was not consistent with a single outbreak source. Following discussions with the pathology laboratory it was identified that all but one case resulted from a laboratory error.

OzFoodNet coordinated investigations of foodborne disease where clusters had possible multi-state spread. This included the continuing investigation into a multi-state outbreak of hepatitis A associated with an interstate gathering in the Northern Territory. OzFoodNet sites collected data from 213 participants from four states and identified 21 cases, giving an attack rate of 9.9 per cent. An examination of risk factors identified that coleslaw served at one function was the most likely food vehicle.

During the quarter, OzFoodNet sites continued to interview all cases of *Salmonella* Paratyphi B biovar Java infections to examine the role of contact with tropical fish in Australia. This investigation is in response to an increase across Australia this year, which is a concern as these infections are resistant to multiple antibiotics. Western Australia reported one case of this infection during the quarter, in a person who had a tropical fish aquarium. Testing of gravel from the aquarium was also positive for a *Salmonella* Paratyphi B biovar Java.

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