

OzFoodNet: enhancing foodborne disease surveillance across Australia

Quarterly report, April-June 2001

Martyn Kirk for the OzFoodNet Working Group¹

Introduction

OzFoodNet is a collaborative network conducting applied research into foodborne disease. It was established by the Commonwealth Department of Health and Ageing, formerly the Department of Health and Aged Care.¹ During the second quarter of 2001, OzFoodNet prepared several protocols for national studies investigating the burden and causes of foodborne disease. OzFoodNet epidemiologists assisted with investigations into several outbreaks of foodborne illness, including a major outbreak of *Salmonella* Bovismorbificans 32 associated with iceberg lettuce, and Australia's first outbreak of multi-drug resistant *Salmonella* Typhimurium Definitive Type (DT) 104.

This second quarterly report of OzFoodNet summarises the reporting of foodborne disease in the six States of Australia during the second quarter of 2001.² During this time, the Australian Capital Territory and the Northern Territory participated as observers in OzFoodNet, and we have not included data from these jurisdictions unless specified.

Notifications in the second quarter

In this report we have used the date that the health department received notifications, unless specified otherwise.

During the quarter, OzFoodNet sites reported 3,551 notifications of campylobacteriosis (excluding New South Wales). The median ages of cases ranged between 24–32 years. All States reported that the male to female ratio of cases was approximately 1:1 except South Australia (1.4:1). The Tasmanian Health Department reported a large increase in the rate of *Campylobacter* infections in the northern part of Tasmania, although no source was identified. The South Australian Department of Human Services investigated one point source outbreak of *Campylobacter* infection associated with a restaurant meal.

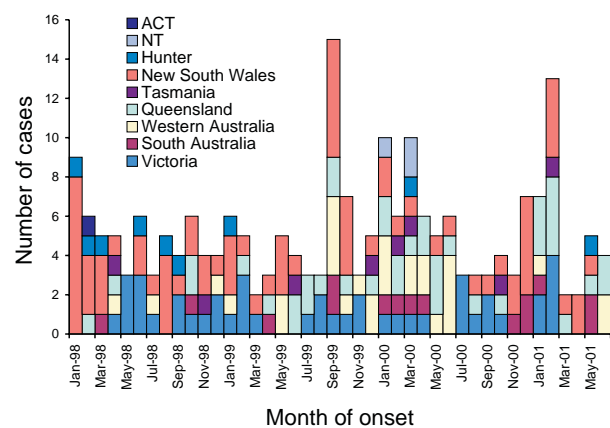
OzFoodNet sites reported a total of 1,672 cases of salmonellosis during the second quarter and identified the source of 10 *Salmonella* outbreaks. The median ages of reported cases in all States ranged from 15–24 years old, except for Queensland where the median age was 9 years. OzFoodNet sites reported that *Salmonella* Typhimurium (phage types 64, 135 and 126), Virchow (8 and 36var1) and Enteritidis were the most common serovars (Table 1). The

majority of these *Salmonella* Enteritidis infections were acquired overseas.

The Tasmanian OzFoodNet Site reported that *Salmonella* Mississippi — an endemic serovar in this State — was the most common *Salmonella* infection for the quarter. Tasmania reported one household cluster of *S. Mississippi*, although no source was identified. Both Queensland and New South Wales OzFoodNet sites reported that *Salmonella* Birkenhead was common, which relate to an endemic focus of this serovar in southeast Queensland and northern New South Wales. During the quarter, State and Territory Health Departments commenced investigations into a variety of *Salmonella* serovars, including: Bovismorbificans (phage types 32 and 14), Muenchen, Typhimurium (phage types 126, 135 and 104) and Virchow (phage type 8).

State health departments received 11 notifications of listeriosis during the second quarter of 2001, which compared to 22 for the same quarter in 2000. Median ages for cases ranged from 38.5 to 70 years. South Australia reported one foetal infection in an infant of 34 weeks gestation. The mother had previously consumed soft cheese. There is little seasonality to notifications of *Listeria* infection (Figure). Despite the small numbers of cases of

Figure. Notifications of listeriosis, Australia, 1998 to June 2001, by States and Territories, and month of onset



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The full membership of the OzFoodNet Working Group is listed at the end of this report.

The OzFoodNet Working Group is (in alphabetical order):

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Table 1. Top five *Salmonella* infections reported to OzFoodNet sites, April to June 2001, by date of receipt

| OzFoodNet site | Top five <i>Salmonella</i> infections, by type | Number of cases | | | | |
|-------------------|--|------------------|------------------|----------|------------|--------------------|
| | | 2nd quarter 2001 | 2nd quarter 2000 | YTD 2001 | Total 2000 | Ratio ¹ |
| Queensland | Virchow 8 | 59 | 66 | 123 | 126 | 0.89 |
| | Saintpaul | 40 | 90 | 106 | 132 | 0.44 |
| | Bovismorbificans 32 | 36 | 0 | 36 | 1 | - |
| | Birkenhead | 33 | 21 | 96 | 55 | 1.57 |
| | Typhimurium 126 | 27 | 1 | 35 | 2 | 27.0 |
| Hunter | Typhimurium 64 | 4 | 3 | 7 | 14 | 1.33 |
| | Typhimurium 44 | 2 | 0 | 5 | 0 | - |
| | Typhimurium 170 | 2 | 0 | 3 | 1 | - |
| | Typhimurium 135 | 1 | 3 | 7 | 10 | 0.33 |
| | Enteritidis | 1 | 1 | 1 | 1 | 1.00 |
| New South Wales | Typhimurium 135 | 34 | 34 | 25 | 138 | 1.00 |
| | Typhimurium 9 | 29 | 47 | 30 | 115 | 0.61 |
| | Birkenhead | 18 | 17 | 12 | 77 | 1.05 |
| | Typhimurium 64 | 17 | 21 | 55 | 53 | 0.81 |
| | Stanley | 10 | 5 | 11 | 56 | 2.00 |
| South Australia | Typhimurium 126 | 29 | 1 | 74 | 4 | 29.00 |
| | Typhimurium 9 | 14 | 7 | 36 | 28 | 2.00 |
| | Typhimurium 64 | 9 | 4 | 22 | 20 | 2.25 |
| | Typhimurium 108 | 5 | 3 | 6 | 9 | 1.70 |
| | Virchow | 5 | 2 | 15 | 1 | 2.50 |
| Tasmania | Mississippi | 31 | 19 | 86 | 69 | 1.60 |
| | Typhimurium 9 | 5 | 4 | 9 | 21 | 1.30 |
| | Enteritidis 4 | 2 | 3 | 2 | 5 | 0.67 |
| | Enteritidis 1 | 2 | 1 | 2 | 1 | 2.00 |
| | Typhimurium 135 | 2 | 1 | 2 | 5 | 2.00 |
| Western Australia | Typhimurium 135 | 5 | 59 | 49 | 68 | 0.08 |
| | Typhimurium 22 | 3 | 2 | 5 | 2 | 1.50 |
| | Typhimurium 4 | 3 | 7 | 18 | 13 | 0.43 |
| | Typhimurium 8 | 3 | 0 | 4 | 1 | - |
| | Bovismorbificans | 2 | 0 | 7 | 0 | - |
| Victoria | Typhimurium 9 | 33 | 55 | 89 | 186 | 0.60 |
| | Typhimurium 135 | 20 | 21 | 63 | 71 | 0.95 |
| | Typhimurium 4 | 17 | 2 | 54 | 37 | 8.50 |
| | Virchow 36var1 | 11 | 10 | 20 | 19 | 1.10 |
| | Virchow 34 | 8 | 18 | 24 | 60 | 0.44 |

1. Ratio of number of cases reported in second quarter 2001 to second quarter 2000

listeriosis notified to individual jurisdictions, there is potential for cross-border or national outbreaks.

OzFoodNet sites reported 10 cases of shiga toxin producing *E. coli* infections during the quarter, with South Australia and Queensland each reporting four cases. Investigators did not identify any sources and all cases appeared sporadic. The median ages ranged from 14 to 71 years.

Foodborne disease outbreaks

During the second quarter of 2001, OzFoodNet sites reported 16 outbreaks that were potentially related to food (Table 2). These outbreaks affected approximately 224 people, of which 24 were hospitalised and one died. The

Victorian Department of Human Services identified helva imported from Turkey, as the source of the first Australian outbreak of multi-drug resistant *Salmonella* Typhimurium DT 104.* This serovar is a significant problem for countries in the northern hemisphere, due to its propensity to affect many different types of animals, and the antibiotic resistance of the serovar.³ The Queensland Department of Health identified iceberg lettuce that was contaminated during processing as the source of an outbreak of *Salmonella* Bovismorbificans 32 that affected people across Queensland.

Table 2. Outbreaks reported by OzFoodNet sites, April to June 2001

| State | Month of outbreak | Setting | Agent responsible | Number exposed | Number affected | Responsible vehicles |
|--------|--|----------------------|------------------------|----------------|---|--|
| Hunter | June | Take-away pizza shop | Unknown | Unknown | 4 | Pizza |
| | May | Kebab shop | Unknown | Unknown | 2 | Suspected chicken kebab |
| | May | Supermarket | Unknown | Unknown | 3 | Suspected BBQ chicken |
| | May | Take-away pizza shop | Unknown | Unknown | 8 | Pizza |
| Qld | June | Caterer | Suspected Norwalk | 14 | 10 | Unknown |
| | June | Home | Ciguatera | 3 | 3 | Barracuda (Sphyraena jello) |
| | June | Hotel | S. Montevideo | Unknown | 8 | Unknown |
| | May | Take away restaurant | S. Bovismorbificans 32 | Unknown | 36 | Commercially processed iceberg lettuce |
| SA | June | Café | S. Zanzibar | Unknown | 2 | Suspected chicken dish |
| | June (investigations still continuing) | Community | S. Typhimurium 126 | Unknown | 44 to end of June; 72 to 10th August 2001 | Chicken products |
| | May | Restaurant | Campylobacter jejuni | 13 | 10 | Unknown |
| Tas | April | Household | S. Mississippi | 7 | 7 | Unknown |
| | April | Household | S. Typhimurium 9 | 6 | 6 | Suspected duck eggs |
| Vic | April | School Camp | S. Typhimurium 9 | 55 | 29 | Unknown |
| | June | Community | S. Typhimurium DT104 | Unknown | 23 (20 Vic; 2 NSW; 1 Qld) | Turkish Helva |
| WA | June | Restaurant | S. Typhimurium 64 | ~40 | 29 | Fried icecream |

Applied research

The OzFoodNet collaboration has achieved some important goals during the first six months of 2001, which included:

- development of a National survey of diarrhoeal disease through the National Centre for Epidemiology and Population Health;
- development of protocols for four national case control studies to examine risk factors for campylobacteriosis, listeriosis, *Salmonella* Enteritidis, and shiga-toxin producing *E. coli*;
- development of a national outbreak register for food-borne disease;
- communicating about clusters of foodborne diseases, through a fortnightly cluster report;
- comparing molecular typing methods for *Campylobacter*;
- development of a national survey of pathology laboratories;
- assisting with the investigation of several important clusters and outbreaks of foodborne disease that have crossed jurisdictional boundaries;
- communication with international agencies involved in similar international work; and
- formation of an important forum for discussing issues relating to foodborne disease.

There are many important areas of foodborne disease surveillance, which OzFoodNet cannot adequately address in this first phase of work. Some examples of this further work include: estimating the cost of foodborne disease, determining the fraction of foodborne disease that is notified to health authorities, novel means of detecting outbreaks, risk factors for other foodborne pathogens, etc. OzFoodNet is currently developing a paper on the potential future of ongoing collaborative work to improve our understanding of foodborne disease.

References

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