



Government of Western Australia
Department of Health
Communicable Disease Control Directorate

OzFoodNet—Enhancing Foodborne Disease Surveillance Across Australia

Second Quarter Summary, 2010 Western Australia

Robyn Gibbs, Nevada Pingault and Barry Combs

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Communicable Disease Control Directorate
Department of Health, Western Australia

PO Box 8172
Perth Business Centre WA 6849

Email: OzfoodnetWA@health.wa.gov.au

Overview of quarter

During this quarter, the Western Australian (WA) OzFoodNet team conducted enteric disease surveillance and investigations, and was involved with on-going enteric disease research projects. The WA OzFoodNet team investigated one foodborne outbreak caused by *Cyclospora* and one suspected foodborne outbreak caused by *Clostridium perfringens*. OzFoodNet also conducted surveillance of nine non-foodborne outbreaks in a variety of settings. Research projects included “Burden of gastrointestinal illness in Aboriginal people”, “Norovirus genotyping”, and “Case control study of sporadic cases of Cryptosporidiosis in WA”.

Incidence of foodborne disease

Enteric disease notifications were extracted from the Western Australian Notifiable Infectious Diseases Database (WANIDD) by Optimal Date of Onset (ODOO) for the time period 1 January 2005 to 30 June 2010. The “ODOO” is a composite of the ‘true’ date of onset provided by the notifying doctor or obtained during case follow-up, the date of specimen collection for laboratory notified cases, and when neither of these dates is available, the date of notification by the doctor or laboratory, or the date of receipt of notification, whichever is earliest.

In the second quarter of 2010, *Campylobacter* infection was the most commonly notified enteric disease in WA, with 449 notifications, which is similar to mean of the previous five years for the second quarter (n=469) (Table 1).

The second most commonly notified enteric infection in the second quarter of 2010 was *Salmonella* infection, with 320 notifications. This was 37% more than the mean number of notifications for this quarter for the previous five years. The increase in *Salmonella* notifications in the second quarter when compared to previous years was largely attributable to an increase in the number of overseas acquired cases, with 34% of cases in the second quarter of 2010 overseas acquired compared to an average of 21% for this quarter for the previous five years (Figure 1). In particular, this increase was associated with travel to Indonesia (primarily to Bali), with the numbers of *Salmonella* cases associated with travel to other countries remaining relatively stable (Figure 2). In the 2nd quarter of 2010 the number of *Salmonella* cases associated with travel to Indonesia (n=97) was 4.6 times the 2nd quarter average of the previous five years (x=21). The most common serotypes among these 2nd quarter 2010 cases with travel to Indonesia were *S. Enteritidis* (n=51), *S. Paratyphi B* bv Java (n=10) and *S. Typhimurium* (n=10).

The number of rotavirus notifications in the 2nd quarter of 2010 was similar to the average number of notifications for the previous three years. For *Cryptosporidium*, *Shigella* and hepatitis A, the number of notifications was lower than the average number of notifications for the same time period in the previous five years.

Table 1. Enteric disease notifications for the second quarter of 2010, and comparison to the second quarter of the years 2005 to 2009

Pathogen	Number of Notifications			
	2010 2nd Quarter	Range for 2nd Quarters from 2005 to 2009	Mean of 2nd Quarters from 2005 to 2009	2nd Quarter % Change*
<i>Campylobacter</i>	449	338-635	469	-4.4
<i>Salmonella</i>	320	170-253	201	37.3
Rotavirus [#]	94	69-110	96.3	-2.5
<i>Cryptosporidium</i>	32	33-172	72.2	-55.7
<i>Shigella</i>	27	27-49	36.2	-25.4
Hepatitis A	6	8-25	14.6	-58.9

Notes: *Percentage change in the number of notifications in the current quarter compared to the historical five-year mean for the same quarter. Positive values indicate an increase when compared to the historical five-year mean of the same quarter. Negative values indicate a decrease when compared to the historical five-year mean of the same quarter.
[#]Rotavirus became a notifiable disease in July 2006, so historical 2nd quarter data was only available for the years 2007 to 2009

Figure 1. *Salmonella* notifications by place of acquisition for the 2nd quarter of each year, 2005 to 2010

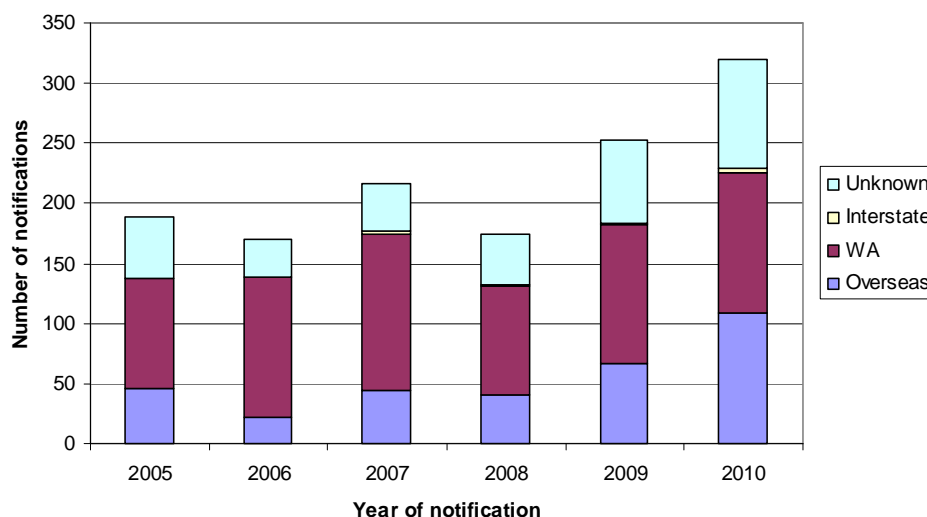
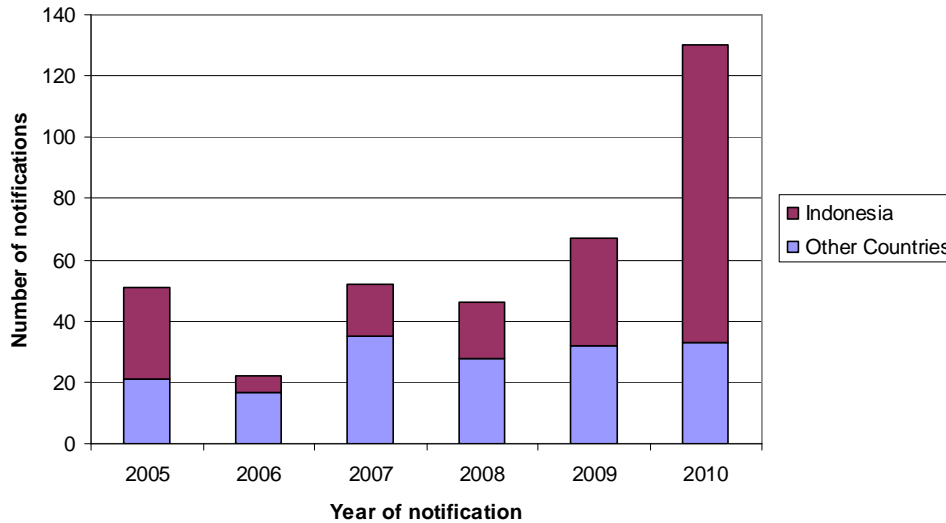


Figure 2. Number of overseas acquired *Salmonella* notifications with infection acquired in Indonesia and other countries for the 2nd quarter of each year, 2005 to 2010



Non-Foodborne disease outbreak investigations

There were nine outbreaks of enteric disease in this quarter that appeared to be non-foodborne, seven of which occurred in residential care facilities (78%), and two which occurred in child care centres (22%). The causative agent for four (44.5%) of these outbreaks was confirmed as norovirus, and for one (11%) outbreak rotavirus was detected. For the remaining four outbreaks (44.5%) the causative agent was unknown, either because a pathogen was not detected (n=1), viral testing was not requested (n=1) or specimens were not collected (n=2). A total of 150 people were affected in the nine outbreaks. The number of non-foodborne outbreaks for this quarter was less than one third of the five year mean for the second quarter (n=32).

In addition, there was one outbreak of gastroenteritis at an aged care facility where the mode of transmission was unknown. Eleven residents were ill with diarrhoea only, with an average duration of 1.5 days. While one of the two specimens collected was positive for *Clostridium perfringens*, there was insufficient evidence to suggest this was a foodborne outbreak, as a proportion of people carry this organism in the bowel.

Foodborne/suspected foodborne disease outbreaks

There was one foodborne and one suspected foodborne disease outbreak investigated in this quarter.

Foodborne outbreaks

***Cyclospora* outbreak on a cruise ship (Outbreak code: 05/10/CYC)**

A *Cyclospora* outbreak affected passengers and crew on two successive cruises of the same ship that departed from and returned to Western Australia in May and June 2010, and visited south-east Asian destinations. Follow up of laboratory confirmed cases and passenger enquiries identified 34 ill passengers associated with the first cruise, with 26 of these cases laboratory confirmed. From the second cruise 232 passengers and 48 crew members were reported to be affected, with 46 passengers and one crew member laboratory confirmed. The duration of illness ranged from 1 to 33 days, with a median of 6.5 days. The most common symptom for confirmed cases was diarrhoea, which was reported by 45 of the 47 cases for whom symptom information was recorded. A case-control study was conducted among crew members, with questions focusing on fresh produce and water consumed on board, and on-shore visits. There were 31 cases and 97 controls recruited into the study. Of the 117 exposure variables included in univariate analysis nine were significant at a p value of <0.01, with lettuce having the strongest association with illness (OR=5.49, 95% CI 1.73-14.1, p=0.0005). Drinking water on-board was not associated with illness. Variables with p values <0.1 (25 variables) were included in a backward stepwise logistic regression analysis. Eating in a speciality dining area, eating cantaloupe, mint and lettuce were significant in the logistic regression model (p<0.05). It was concluded that illness was most likely related to eating fresh produce items taken on board in a South-east Asian port during the first cruise, but the case-control study did not provide enough evidence to definitively determine which fresh produce item was the likely cause of illness.

Suspected foodborne outbreaks

Aged care facility outbreak, *Clostridium perfringens* (Outbreak code: 06/10/HIL)

There was a suspected foodborne outbreak notified in February 2010, with 9 of 135 residents of an aged care facility ill with diarrhoea, and onset of illness over a four day period. The duration of diarrhoea for most cases was ≤ 2 days. One staff member was also ill with diarrhoea and vomiting. Of the nine ill residents, six consumed vitamised food. Three faecal samples were negative for common bacterial and viral pathogens, and stool toxin testing was not carried out. Two specimens were positive for *Clostridium perfringens*, with indistinguishable PFGE profiles, which suggested that infection had come from a common source, suspected to be a common food. There were no remaining food samples from the period prior to onset of illness, and more recent food samples were negative for common bacterial pathogens and *Clostridium perfringens*. Food was prepared on site and an environmental investigation found satisfactory food handling practices and hand hygiene standards.

Cluster investigations

None to report

Site activities

During the second quarter of 2010, the following activities were conducted at the WA OzFoodNet site:

- Ongoing surveillance of foodborne disease in WA.
- As described above, investigation of one foodborne and one suspected foodborne outbreak.
- Investigation of two *Listeria monocytogenes* cases. The first case was an immunocompromised 55 y/o male, who had eaten numerous high risk foods including pre-prepared salads and cold meats. The second case was an immunocompromised 39 y/o female, who had also eaten a number of high risk foods including rockmelon, soft cheese, cold meats and pre-prepared salads.
- Investigation of one hepatitis E, one *Vibrio parahaemolyticus* and one *Yersinia* species cases.
- Investigation of *Salmonella* enteritidis cases with unknown travel history.
- Surveillance of typhoid and paratyphoid cases. There were four typhoid and two paratyphoid cases reported, and all acquired their infection overseas.
- Investigation of nine non-foodborne gastroenteritis outbreaks, seven of which occurred in residential care facilities, and two which occurred in child care centres.
- Ongoing monthly meetings with the Department of Health Food Unit to improve foodborne disease surveillance and investigation in WA.
- Presentation of a talk “Management of gastroenteritis outbreaks in an Aged Care Facility (ACF)” at a workshop titled “Infectious diseases in ACFs” in May 2010, which was attended by ACF staff from the Western Australian South West region.
- Presentation of a talk “Management of gastroenteritis outbreaks in an ACF” at a workshop titled “Infection Control update for ACF Staff” in May 2010, which was attended by ACF staff from the Perth metropolitan region.
- Attended a “Writing for the web” training course.
- Developed a survey to obtain information on jurisdictional practices for STEC diagnosis and surveillance.

- Membership of an OzFoodNet working group on “Developing exclusion guidelines for foodhandlers”.
- Continued involvement in an OzFoodNet funded collaborative research project with PathWest Laboratory Medicine – “A retrospective survey of Norovirus genotypes in faecal samples from 2005 to 2008”.
- Continuation of a project on “Burden of gastrointestinal illness in Aboriginal people”.
- Development and commencement of a *Cryptosporidium* Case-Control study.
- Participation in national OzFoodNet teleconferences.
- Attendance at an Advanced Disease Outbreak Investigation workshop and STATA training workshop in Adelaide in June.
- Supervision of a UWA Masters of Infectious Disease student on a project examining the epidemiology of rotavirus in Western Australia.

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