

## Editorial

# THE IMPORTANCE OF ENTERIC INFECTIONS IN AUSTRALIA

Martyn D Kirk

This issue of *Communicable Diseases Intelligence* contains several reports highlighting the importance of enteric infections. Infections spread via the faecal-oral route result in significant social and economic costs, regardless of a country's level of industrialisation.<sup>1</sup> In Australia, the burden of disease transmitted by contaminated food was estimated to cost AUD\$1.2 billion annually.<sup>2</sup> Data from the OzFoodNet network ([www.ozfoodnet.gov.au](http://www.ozfoodnet.gov.au)) was critical to estimating these costs, which are largely driven by lost productivity due to people taking time off work as a result of their own illness or to care for someone else who was ill. OzFoodNet is a national network of epidemiologists, which has dramatically improved public health action for enteric infections.<sup>3</sup> A simple example of how OzFoodNet has improved the surveillance of enteric infections is shown in the number of outbreaks of gastroenteritis and foodborne disease reported over time. In 2002, OzFoodNet reported 513 foodborne and gastrointestinal outbreaks compared with 1,640 outbreaks in 2010, indicating a much-matured surveillance system.<sup>4,5</sup>

Rotavirus is a common cause of gastroenteritis and one of the most significant enteric pathogens globally due to the resulting high mortality in young children, particularly in low-income countries.<sup>6</sup> Various studies have highlighted the impact that the introduction of rotavirus vaccines into the Australia immunisation schedule has had on public health, which is reinforced in the article by David and Kirk in this issue.<sup>7-9</sup> Also in this issue is a report of molecular surveillance of rotavirus in Australia that shows a dynamic pattern of circulating wild-type strains, highlighting the importance of prospective surveillance to monitor the epidemiology of rotavirus in a post-vaccine era.<sup>10</sup>

Enteric infections often manifest as gastroenteritis consisting of vomiting and diarrhoea, but may also result in more serious outcomes, such as hepatitis, meningitis, or bacteraemia. Determining the mode of transmission of enteric agents is often challenging, as there are usually multiple means of transmitting illness.<sup>11</sup> For example, norovirus is one of the most common causes of infectious gastroenteritis globally and is highly-infectious.<sup>12</sup> The virus may be transmitted by contaminated

food, water, or from contact with another infected person or contaminated fomites.<sup>13</sup> The two reports of outbreaks of norovirus associated with oysters in northern New South Wales and Tasmania respectively, highlight the risks that occur when filter-feeding molluscs are grown in water contaminated by human sewage.<sup>14,15</sup> In Australia, oyster related outbreaks are rare due to the safeguards instituted by industry and government, although they can still occur where there are breakdowns in sanitation, which occurred in these two outbreaks. Data from the OzFoodNet network illustrate that most outbreaks of norovirus are spread from one infected person to another, particularly in institutionalised settings.<sup>5,16</sup> It is likely that vaccines against noroviruses will be produced in the future due to the potential economic and public health benefits.<sup>17</sup>

The investigation of hepatitis A infections transmitted by sharing Kava on page E26 demonstrates the highly infectious nature of the virus.<sup>18</sup> In recent years, the incidence of hepatitis A infections in Australia has declined significantly.<sup>19</sup> Many cases of hepatitis A reported to health departments in Australia are in travellers returning from overseas, including Pacific Island countries and territories ([http://www.health.nsw.gov.au/Infectious/alerts/Documents/Hepatitis\\_A\\_Alert\\_8March2013.pdf](http://www.health.nsw.gov.au/Infectious/alerts/Documents/Hepatitis_A_Alert_8March2013.pdf)).<sup>20,21</sup> The three additional cases (along with an additional tertiary case) of hepatitis A that occurred in this cluster after sharing kava with the primary case while they were infectious provides some clues as to how people acquire infection when travelling to Pacific Island countries and territories and illustrates the need for vaccination for travellers to the region.<sup>22</sup> While the incidence of locally-acquired cases in Australia is low, the outbreak due to imported semi-dried tomatoes in 2008–09 highlights that Australia is vulnerable to large and serious foodborne outbreaks of hepatitis A.<sup>23</sup>

Finally, this issue also includes two articles highlighting the public health response to clusters of two important bacterial infections due to *Salmonella* Typhi in a family and *Campylobacter* associated with duck livers.<sup>24,25</sup> In particular, the outbreak of campylobacteriosis is very similar to other previously reported outbreaks where food

premises have served undercooked poultry livers in Australia and overseas.<sup>26–28</sup> The short incubation period demonstrates that the cooking process was inadequate and that affected persons were likely to have received large doses of *Campylobacter* from the contaminated dish.

### Author details

Associate Professor Martyn D Kirk, Head, MAE Program, National Centre for Epidemiology and Population Health, Australian National University, CANBERRA ACT 0200. Telephone +61 2 6125 5609. Fax +61 2 6125 0740. Email: [martyn.kirk@anu.edu.au](mailto:martyn.kirk@anu.edu.au)

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