Yersiniosis

Epidemiology in New Zealand
The vast majority of cases of yersiniosis in New Zealand are caused by *Yersinia enterocolitica* biotype 4 (commonly found in pigs in New Zealand). *Y. enterocolitica* biotype 3 (commonly found in cattle in New Zealand) and *Y. pseudotuberculosis* account for most of the remaining cases.

More detailed epidemiological information is available on the Institute of Environmental Science and Research (ESR) surveillance website at www.surv.esr.cri.nz.

Further information on foodborne illness is available at www.foodsafety.govt.nz and www.mpi.govt.nz.

Case definition

Clinical description
In children under 5 years old, *Y. enterocolitica* infection typically causes diarrhoea, vomiting, fever and occasionally abdominal pain. In contrast, older children and adults are more likely to experience abdominal pain as the prominent symptom. Bacteraemia and sepsis may occur in immunocompromised individuals. *Y. pseudotuberculosis* is more likely to cause mesenteric adenitis and septicaemia than *Y. enterocolitica*.

Laboratory test for diagnosis

Laboratory confirmation requires at least one of the following:
- isolation of Yersinia enterocolitica or *Y. pseudotuberculosis* from blood or faeces
- detection of circulating antigen by ELISA or agglutination test.

All isolates should be sent to the Enteric Reference Laboratory at ESR for further characterisation.

Case classification

- **Under investigation**: A case that has been notified, but information is not yet available to classify it as probable or confirmed.

- **Probable**: A clinically compatible illness that is epidemiologically linked to a confirmed case or has had contact with the same common source – that is, is part of a common-source outbreak.
• **Confirmed:** A clinically compatible illness that is laboratory confirmed.

• **Not a case:** A case that has been investigated and subsequently found not to meet the case definition.

### Spread of infection

#### Incubation period
From 3–7 days, generally under 10 days.

#### Mode of transmission
Mostly through ingestion of contaminated food, including pork and pork products, dairy products (especially unpasteurised milk), fruit, vegetables and tofu.

Although optimal growth is seen at 28–29°C, *Y. enterocolitica* also grows well in a refrigerator (4°C) and survives freezing.

Yersiniosis is also associated in New Zealand with ingestion of untreated water, direct contact with an infected animal and person-to-person spread. Person-to-person transmission in a hospital has been reported. *Yersinia* spp. have rarely been transmitted from asymptomatic patients by blood transfusion.

*Y. paratuberculosis* is not transmitted through contaminated food. It is found in deer in New Zealand.

#### Period of communicability
Faecal shedding generally persists for 2–3 weeks but can be prolonged (months) in both children and adults.

#### Notification procedure
Attending medical practitioners or laboratories must immediately notify the local medical officer of health of suspected cases. Notification should not await confirmation.

#### Management of case

##### Investigation
Obtain a food history, details of ingestion of untreated water, contact with animals, possible human contacts and travel.

##### Restriction
In a health care facility, only standard precautions are indicated in most cases; if the case is a diapered or incontinent child, apply contact precautions for the duration of
illness. For further details, refer to the exclusion and clearance criteria in Appendix 2: Enteric Disease.

**Counselling**
Advising the case and their caregivers of the nature of the infection and its mode of transmission. Educate about hygiene, especially hand cleaning.

**Management of contacts**

**Definition**
All those with unprotected close contact with a case during the period of communicability or who have been exposed to the same contaminated food, water or other source in a common-source outbreak.

**Investigation**
Test for asymptomatic infection only in an outbreak.

**Counselling**
Advise all contacts of the incubation period and typical symptoms of yersiniosis, and to seek early medical attention if symptoms develop.

**Other control measures**

**Identification of source**
Check for other cases in the community. Investigate potential food or water sources of infection only if there is a cluster of cases or an apparent epidemiological link.

If indicated, check the water supply for microbiological contamination and compliance with the latest New Zealand drinking-water standards (Ministry of Health 2008).

**Disinfection**
Clean and disinfect surfaces and articles soiled with stool. For further details, refer to Appendix 1: Disinfection.

**Health education**
Educate the public about safe food preparation (see Appendix 3: Patient Information).

Hand-cleaning facilities should be available and used after contact with animals. Young children should be supervised during contact with animals and during hand cleaning. Food-related activities should be separated from areas that house animals. Domestic animals with diarrhoea should be taken to a veterinarian for assessment and treatment.
If a water supply is involved, liaise with the local territorial authority to inform the public. Advise on the need to boil water.

In early childhood services or other institutional situations, ensure satisfactory facilities and practices regarding hand cleaning; nappy changing; toilet use and toilet training; preparation and handling of food; and cleaning of sleeping areas, toys and other surfaces.

**Reporting**

Ensure complete case information is entered into EpiSurv.

Liaise with the environmental health officer of the local territorial authority where food premises are thought to be involved. Liaise with the Ministry for Primary Industries if a contaminated commercial food source is thought to be involved.

If a cluster of cases occurs, contact the Ministry of Health Communicable Diseases Team and outbreak liaison staff at ESR, and complete the Outbreak Report Form.

**References and further information**