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# Acute gastroenteritis

## Epidemiology in New Zealand

Episodes and outbreaks of acute gastroenteritis are common in New Zealand. They are usually due to micro-organisms. Outbreaks of poisoning due to a chemical contaminant of water or food have only rarely been reported.

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

Further information on foodborne illness is available at [www.foodsafety.govt.nz](http://www.foodsafety.govt.nz) and [www.mpi.govt.nz](http://www.mpi.govt.nz).

## Case definition

Acute gastroenteritis is the sudden onset of diarrhoea and/or vomiting, usually three or more bouts of diarrhoea or vomiting and diarrhoea. This can be caused by ingestion of:

- toxins, for example, toxins produced by *Bacillus cereus*, staphylococci, *Clostridium botulinum*, tutin
- viruses, for example, norovirus
- bacteria, for example, campylobacter, salmonella
- parasites, for example, giardia, cryptosporidium
- chemicals, for example, some metals.

Not every case of acute gastroenteritis is necessarily notifiable – only those where there is a suspected common source or from a person in a high-risk category (for example, food handler, early childhood service worker) or single cases of chemical, bacterial or toxic food poisoning such as botulism, toxic shellfish poisoning (any type) and disease caused by verotoxin- or Shiga toxin-producing *Escherichia coli* (VTEC/STEC).

## Clinical description

An acute gastrointestinal illness with vomiting or diarrhoea (three or more loose stools per day).

## Laboratory test for diagnosis

**Laboratory confirmation requires** isolation of the specific organism or toxin, or detection of nucleic acid.

## 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.
- **Confirmed:**
  - A clinically compatible illness that is laboratory confirmed, or
  - A clinically compatible illness and a common exposure associated with a laboratory confirmed case.
- **Not a case:** A case that has been investigated and subsequently found not to meet the case definition.

## Notification procedure

In addition to the specific enteric diseases covered in other chapters, the following categories of acute gastroenteritis must be reported without delay:

1. any suspected outbreak of acute gastroenteritis where there is a suspected common source (for example, two or more cases associated in time or place, commonly caused by norovirus, rotavirus, enteric adenoviruses, *B. cereus*, *Staphylococcus aureus*)
2. single cases in a high-risk category (for example, food handler, early childhood service worker)
3. single cases of infectious gastroenteritis of public health importance, including:
  - Shiga toxin-producing *Escherichia coli* and other *E. coli* strains causing diarrhoea, for example, enteropathogenic *E. coli* (EPEC) and enterotoxigenic *E. coli* (ETEC)
  - *Clostridium perfringens* or *C. botulinum*
  - *Vibrio parahaemolyticus*.
4. single cases caused by non-infectious gastrointestinal intoxicants (for example, fish or shellfish toxins; use of aluminium, copper or brass utensils to store acidic fruits or drinks; barbecued food where tanned wood has been used).

## Management of case

### Investigation

In liaison with the attending medical practitioner, obtain a history of possible contacts, travel, food and water ingestion.

Ensure that laboratory confirmation by stool testing, when appropriate, has been attempted. Testing of stool (or vomit, although yield is lower than from stool) samples for norovirus should be considered in an outbreak situation where the clinical and epidemiological features suggest norovirus infection. Unfortunately, the rapid progress of most norovirus outbreaks and relatively long turnaround time for norovirus testing

necessitate empirical diagnosis and management for at least the first 5–7 days in most of these events.

### **Restriction**

In a health care facility, place patients with acute gastroenteritis of unknown cause under contact isolation precautions. If the cause of gastroenteritis is known, isolation precautions are only necessary for those infections with the potential for person-to-person spread. All patients with norovirus and diapered or incontinent patients with rotavirus or enteric adenovirus infections require contact isolation for the duration of symptoms. Consider placing patients with norovirus infection, especially if vomiting, under airborne precautions in addition to contact precautions.

Food handlers with gastroenteritis of unknown cause should be withdrawn from work while undergoing investigation and until symptoms resolve. There is no additional restriction on food handlers found to have non-cholera vibrio infections, botulism or shellfish or fish poisoning. For further details, refer to the exclusion and clearance criteria in Appendix 2: Enteric Disease.

### **Counselling**

Advise the case and/or caregivers of the nature of the disease and its mode of transmission. Educate about hygiene, especially hand cleaning.

## **Management of contacts**

### **Definition**

A person who has been exposed to an infected person or infectious material in such a way that transmission may have occurred.

### **Prophylaxis**

People known to have eaten *C. botulinum* toxin-contaminated food may be purged with a cathartic, given gastric lavage and high-bowel washout and kept under close medical supervision. In high-risk cases, give botulinium antitoxin within 1–2 days of ingestion.

### **Counselling**

Advise all contacts of the incubation period and typical symptoms of the disease, 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 if there is a cluster of cases, an apparent epidemiological link or a single case

of suspected botulism. When appropriate, collect specimens of suspect foods for analysis, ensuring samples are transported in sealed containers.

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

## **Disinfection**

For botulism, detoxify implicated foods by boiling before discarding or break the containers and bury them deeply in soil to prevent ingestion by animals. Sterilise utensils potentially contaminated with botulinum toxin.

## **Health education**

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

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.

## **Epidemic control**

See *Guidelines for the Investigation and Control of Disease Outbreaks* (ESR 2012) at <http://www.surv.esr.cri.nz/episurv/Manuals/GuidelinesForInvestigatingCommDiseaseOBs.pdf>

For suspected or known norovirus outbreaks, refer to *Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions* (Ministry of Health 2009) at [www.health.govt.nz/publication/guidelines-management-norovirus-outbreaks-hospitals-and-elderly-care-institutions-0](http://www.health.govt.nz/publication/guidelines-management-norovirus-outbreaks-hospitals-and-elderly-care-institutions-0)

## **Reporting**

Ensure complete case information is entered into EpiSurv.

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.

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.

## References and further information

ESR. 2012. *Guidelines for the Investigation and Control of Disease Outbreaks*. Porirua: Institute of Environmental Science and Research Limited.

Ministry of Health. 2008. *Drinking-water Standards for New Zealand 2005 (Revised 2008)*. Wellington: Ministry of Health.

Ministry of Health. 2009. *Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions*. Wellington: Ministry of Health. URL: [www.health.govt.nz/publication/guidelines-management-norovirus-outbreaks-hospitals-and-elderly-care-institutions-0](http://www.health.govt.nz/publication/guidelines-management-norovirus-outbreaks-hospitals-and-elderly-care-institutions-0)