ACUTE GASTROENTERITIS (and toxin-related illnesses)

Based on the MoH Communicable Diseases Manual 2012 – December 2017[1]

Associated Documents

Management of a Case

- Case Report Form: K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\Forms FactSheetsDocuments\CaseReportFormEnteric_Dec2017.pdf
- Acute gastroenteritis forms (Protection): Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\Forms FactSheetsDocuments
- Fact sheet: K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\AcuteViralGastroenteritisFactSheet.pdf
- ESR Faecal Fact Sheet121015, refer link: CSF\Protection\FinalDocs\NotifiableDiseases\FormsFactSheetsDocuments\FormsFactsSheets\Forms\ESRFaecalFactSheet121015.docx.
- For additional information on gathering food/faecal specimens discuss with ESR Public Health Laboratory (Ph:04-2370 149), and also refer to link: Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\FormsFactSheetsDocuments\Forms FactSheets\Forms\InstructionsForCollectionOfFaeces2.doc

The Illness

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.[2] Further information on food borne illness is available at www.foodsafety.govt.nz and www.mpi.govt.nz.

Acute gastroenteritis: May be due to viruses, bacteria, parasites or chemicals with viruses being the commonest cause. Individual protocols for specific notifiable bacterial and parasitic gastroenteritis are found under their respective names. Most cases of non-specific or viral gastroenteritis are self-reported or detected during outbreak investigations. Exceptions are those forms of food poisonings with more severe symptoms, e.g. botulism and chemical poisonings. These are also notifiable (see Notification Procedure below). Staphylococcus aureus, Bacillus cereus and some strains of pathogenic E. coli produce a heat–stable toxins that survive cooking.

Chemical Gastroenteritis: Results from ingesting toxins or chemicals. The toxins may be from a plant, such as poisonous mushrooms, or from certain exotic seafood. Gastroenteritis also occurs after ingesting water or food contaminated by chemicals such as arsenic, lead, mercury, copper or cadmium. Heavy-metal poisoning frequently causes nausea, vomiting, abdominal pain, and diarrhoea. The most common symptoms are diarrhoea, nausea, and vomiting and sometimes seizures and paralysis. The diagnosis is based on the patient's history, symptoms and examination of the ingested substance.

Viral gastroenteritis: Illness is characterised by an acute onset of fever, myalgia, headache, nausea, vomiting, abdominal cramps and watery diarrhoea lasting 12–60 hours. Vomiting is relatively more prevalent among children. Forceful vomiting as a predominant symptom and a significant secondary attack rate in an outbreak of gastroenteritis are suggestive of norovirus infection. Although rare, severe dehydration caused by viral gastroenteritis can be fatal in persons with debilitating health conditions. Diagnosis is initially suspected on clinical presentation and confirmed by PCR.

Norovirus is recognised as the major cause of outbreaks of non-bacterial gastroenteritis. Explosive outbreaks have occurred in institutions, camps, childcare centres, cruise ships, restaurants and following catered functions. Most gastroenteritis outbreaks investigated each year in Canterbury are attributed to viral pathogens of which Norovirus is the commonest. Disease occurs in all age groups and predominantly affects infants and young children. Viruses can be detected throughout the year but are more common in the period from late winter to early summer.

Norovirus
Incubation: Usually 24–48 hours (range is 10–50 hours).

Transmission: Viral gastroenteritis is predominantly spread via the faecal-oral route. Transmission is facilitated through contaminated food (particularly raw shellfish), water (including ice) and person to person contact. Aerosols are thought to be important in the transmission of norovirus and it is also known to persist on contaminated surfaces for weeks.

Communicability: Cases should be considered infectious until at least 48 hours after diarrhoea has ceased. Shedding of norovirus in the absence of clinical illness can persist for up to two weeks and is of particular concern with possible food handler related transmission.

Prevention: Prevention depends on good food and personal hygiene, particularly hand washing.

Incubation Periods For Other Food Borne Diseases/Agents
Refer to:

- MoH Communicable Diseases Control Manual 2012 – March 2018 Update Appendix 2[3] https://www.health.govt.nz/system/files/documents/publications/communicable-disease-control-manual-mar2018.pdf

- Signs and Symptoms Of Microbiological And Chemical Food Poisoning ESR Signs Symptoms Food Poisoning[4] (CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\FormsFactSheetsDocuments\Forms FactSheets\Forms).

Case Definition
Acute gastroenteritis is a descriptive term for inflammation of the gastrointestinal tract from any cause. It commonly presents as the sudden onset of diarrhoea and/or vomiting. Diarrhoea is defined as more frequent (>= 3 per day) and loose stools three or more times per day. These symptoms can be present in many medical conditions, especially in children. Symptoms may be toxin-mediated and other than gastrointestinal. Acute gastroenteritis can be caused by ingestion of:

- toxins, for example, toxins produced by *Bacillus cereus*, *Staphylococcus aureus, Clostridium botulinum*, tutu plant (Coriaria)
- viruses, for example, norovirus, rotavirus
- bacteria, for example, *Campylobacter* spp., *Salmonella* spp., *Yersinia* spp, *E. coli*
- parasites, for example, *Giardia, Cryptosporidium*
- chemicals, for example, some metals[5].

1) Acute gastroenteritis is not necessarily notifiable, unless:
   i) there is a suspected common source
   ii) it is in a person in a high-risk category (food handler, early childhood service worker, other person at increased risk of spreading it)
   iii) it is an infectious gastroenteritis of public health importance.
   iv) Acute gastroenteritis (and toxin-related illnesses)

2) Notification is required for single cases of chemical, or toxic food poisoning such as botulism, histamine (scromboid) poisoning and, toxic shellfish poisoning (any type).

3) In addition to acute gastroenteritis, there are also specific notifiable enteric diseases covered in other chapters; these are Shiga toxin-producing *Escherichia coli* (STEC, previously known as VTEC), *Campylobacter* and *Salmonella*.

Notification Procedure

Notification is required for single cases of chemical, bacterial or toxic food poisoning such as botulism, histamine (scombroid) poisoning and toxic shellfish poisoning (any type).

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, S. aureus*)
2. single cases in a high-risk category (food handler, early childhood service worker, or other person at increased risk of spreading infection)
3. single cases of infectious gastroenteritis of public health importance, not listed on schedule (1) of the Health Act[6]
   as individually notifiable, including but not exclusive to:
   – *E. coli* strains causing diarrhoea, for example, enteropathogenic *E. coli* (EPEC) and enterotoxigenic *E. coli* (ETEC)
   – *Clostridium perfringens*
   – *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 tanalised wood has been used).

Clinical Descriptions[7]
An acute illness with vomiting and/or diarrhoea (three or more loose stools per day).

Toxin-related illnesses may present with clinical features additional to and dominant to the gastrointestinal clinical features. These may include neurological (change in sensation, muscle weakness, difficulty swallowing), dermatological (itch and flushing), musculoskeletal (painful muscles and joints) and cardiovascular (hypotension and bradycardia) features.

For example:.

- ***Gastroenteritis*** *– unknown cause an acute gastrointestinal illness with vomiting and/or diarrhoea (three or more loose stools per day) and no specific cause has been found.*
- ***Gastroenteritis/foodborne intoxication*** *- should be recorded using the name of the specific disease or toxin. Includes both foodborne and waterborne gastroenteritis.*
- ***Bacillus cereus food intoxication*** *- Gastroenteritis where either vomiting or profuse watery diarrhoea dominate*
- ***Botulism*** *- Gastroenteritis with visual difficulty, dysphagia, symmetric weakness or paralysis*
- ***Ciguatera fish poisoning*** *- Gastroenteritis, possibly followed by neurologic symptoms*
- ***Chemical food poisoning*** *- Diverse symptoms depending on chemical in question*
- ***Clostridium perfringens food intoxication*** *- Gastroenteritis with profuse watery diarrhoea*
- ***Histamine (scombroid) poisoning*** *- Tingling and burning sensation around mouth, facial flushing, sweating, nausea and vomiting, headache, palpitations, dizziness and rash*
- ***Norovirus infection*** *- Gastroenteritis usually lasting 12-60 hours*
- ***Rotavirus infection*** *- Gastroenteritis, often severe in infants or young children, with vomiting, fever and watery diarrhoea lasting 4-6 days*
- ***Staphylococcal food intoxication*** *- Gastroenteritis with sudden severe nausea and vomiting*
- ***Vibrio parahaemolyticus***
- ***infection*** *- Gastroenteritis with watery diarrhoea and abdominal cramps.*

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 accompanied by laboratory definitive evidence, 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.

Laboratory Testing

Laboratory definitive evidence for a confirmed case requires isolation of the specific organism or detection of organism nucleic acid or detection of toxin.

Laboratory confirmation requires isolation of the specific organism or toxin, or detection of nucleic acid from a clinical specimen or food as follows:[8]

- ***Bacillus cereus food intoxication***
  Isolation of B. cereus from a clinical specimen or B. cereus from leftover food or detection of diarrhoeal toxin in a faecal sample
- ***Botulism***
  Detection of botulinum toxin in serum, faeces or leftover food
- ***Ciguatera fish poisoning***
  Demonstration of ciguatoxin in implicated fish
- ***Chemical food poisoning***
  Detection of implicated chemical in leftover food
- ***Clostridium perfringens food intoxication***
  Detection of enterotoxin in faecal specimen or faecal spore count isolation of perfringens in leftover food
- ***Histamine (scombroid) poisoning***
  Detection of histamine levels fish muscle
- ***Norovirus gastroenteritis***
  Detection of Norovirus in faecal or vomit specimen or leftover food
- ***Rotavirus gastroenteritis***
  Detection of rotavirus antigen in faecal specimen
- ***Other viral gastroenteritis***
  Detection of virus in faecal or blood specimen
  Note: For some pathogens, detection of nucleic acid is insufficient to meet the case definition (isolation is required) – see specific notifiable enteric diseases chapters, eg, Shigellosis.
- ***Staphylococcal food intoxication***
  Detection of enterotoxin in faecal or vomit specimen or in leftover food or isolation of
  - coagulase-positive *S. aureus* from faecal or vomit specimen or
  - from leftover food
- ***Vibrio parahaemolyticus* infection**
  - Isolation of Kanagawa-positive or pathogenic serotype of *V. parahaemolyticus* from a faecal specimen or
  - isolation of *V. parahaemolyticus* from leftover food.

Management of Case

Investigation

- Investigate by initially completing the Screening Form: Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\FormsFactSheetsDocuments\Forms FactSheets\Forms – Gastro Screening CRF 150803, to find the vehicle and circumstances of transmission (time, place and person) and plan control measures.
- Also refer to the signs and symptoms form: ESR Signs Symptoms Food Poisoning[4] CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\Forms FactSheetsDocuments\Forms FactSheets\Forms – for information to assist with

identifying the likely causative organism.

- Obtain a history of possible contacts, travel, food and water ingestion, in addition to any reported with the notification.
- 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.

Specimens (see references following)

- Ensure samples are transported in sealed containers
- After collection, the two key aims of storage and transport are to keep the specimens viable and to minimise contamination. Most specimens are stored at refrigerator temperature (2–4°C), not frozen.
- For transportation outside of the laboratory environment, an overnight courier or faster means should be employed, using chiller pads and insulated containers to keep the specimens cool.
- Infrequently, if *C. perfringens* is suspected, transport should be at room temperature
- If cases are self-collecting specimens (e.g., faecal specimens), give detailed instructions about specimen storage while awaiting transport to the laboratory, so that exposure to other household members is minimised and the viability of the organisms is maintained. These instructions could include (for faecal specimens):
  - collect the faecal sample in the pottle supplied
  - wash hands
  - place pottle in the supplied biohazard bag
  - place bag in a cool area out of direct sunlight while awaiting collection. A good storage place would be in a chilly bin with a chiller pad.[9]

Other References for collection and transport of specimens

- ESR Faecal Fact Sheet121015, refer link: CSF\Protection\FinalDocs\NotifiableDiseases\FormsFactSheetsDocuments\FormsFactSheets\Forms\ESRFaecalFactSheet121015.docx.
- For additional information on gathering food/faecal specimens discuss with ESR Public Health Laboratory (Ph:04-2370 149), and also refer to link: Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\FormsFactSheetsDocuments\Forms FactSheets\Forms\InstructionsForCollectionOfFaeces2.doc.
- Refer to Ministry of Primary Industry (MPI) (contact details following) for investigation of suspect source where a food premises is implicated.

Incident	MPI Contact
After hours regional incident	Phone: 0800 00 83 33 *You will be transferred to the on call Food Compliance team member*
After hours national incident	Phone: 0800 00 83 33 *You will be transferred to the on call Food Compliance team member.*
Food-borne illness notifications	Email: Food.Compliance@mpi.govt.nz
Food complaints – during work hours	Advise to call MPI 0800 operator 0800 693 721 Email: info@mpi.govt.nz
Default emergency contact if all else fails	Phone: 0800 00 83 33 *You will be transferred to the on call Food Compliance team member*
Media contact	MPI Media Cell Phone 029 894 0328

Meeting Representative	Manager, Food Compliance, Chief Compliance Officer (Central and South)

Responsibilities

- **All Communicable Diseases staff** are to be vigilant regarding any increased incidence of gastroenteritis. Such an increase is to be promptly reported to the MOH. Refer to the CPH Outbreak Guidelines:[10]
  http://cdhbdepartments/corporate/documentmanagement/CDHB%20Libraries/Policies%20and%20procedures,%20guidelines,%20protocols,%20staff%20information%20etc/Com-Dis-Outbreak-Response-Plan.docx.

  Refer to Outbreak Control section below for other reference: *Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions* (Ministry of Health 2009) [11]
  https://www.health.govt.nz/system/files/documents/publications/guidelines-management-norovirus_0.pdf
- **Ministry of Primary Industry and Public Health Unit** responsibilities when investigating an outbreak of a foodborne illness are outlined in table 2.1 of the MoH Communicable Diseases Control Manual 2012-March 2018 Update[12]

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. For example, 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 such patients, especially if vomiting, under airborne precautions in addition to contact precautions.
- Food handlers with gastroenteritis of unknown cause should be withdrawn from food handling work while undergoing investigation and until symptoms resolve; they may be able to continue working as long as that work does not involve handling food. There is no additional restriction on food handlers found to have non-cholera vibrio infections, or shellfish or fish poisoning. For further details, refer to the exclusion and clearance criteria in Table 1 and Appendix 2.

Clearances

The specific diseases that require clearance are cholera (depending on the hygiene situation - see Cholera protocol), salmonella, shigella, typhoid, paratyphoid and VTEC (refer to MoH Communicable Diseases Manual 2012-March 2018 Update Appendix 2.[3]

Refer to Table 1, Appendix 2 and Reference 3 for **Restriction and Clearance** criteria.

Table 1.[3] Exclusion and clearance criteria for people at increased risk of transmitting an infection to others*

Pathogen / Disease	Control	Cases[§]		Contacts
		Exclusion	Micro Clearance	
Acute gastroenteritis, including due to *Bacillus* species, *Clostridium perfringens*, *Cyclospora,* norovirus and rotavirus, *Staph. Aureus*	Enteric precautions	Until symptom free for 48 hours.	None required	No action

§ **Restriction/Exclusion note**[3]

Cases of most enteric disease should be considered infectious and should remain off work/school until 48 hours after symptoms have ceased. Certain individuals pose a greater risk of spreading infection and additional restriction/exclusion criteria may apply. Microbiological clearance may be required for individuals infected with/exposed to certain pathogens.

The key criteria are:

- the decision to exclude any worker is based on individual risk assessment. As a general rule, any worker with symptoms of gastrointestinal infection (diarrhoea and/or vomiting) should remain off work until clinical recovery and stools have returned to normal (where the causative pathogen has not been identified). Where the pathogen has been identified, specific criteria are summarised in Table 1
- the overriding prerequisite for fitness to return to work is strict adherence to personal hygiene, whether symptomatic or not.

The circumstances of each case or contact should be considered and factors such as their type of employment, availability of toilet and hand washing facilities at work, school or institution and standards of personal hygiene taken into account. In exceptional circumstances, eg, where workplace hygiene or sanitation is uncertain, a case may need to be excluded until they are regarded as non-infectious. **If personal hygiene habits and hand washing facilities a concern, discuss with MOH.**

*** Increased risk categories 1-4**

1. people whose work involves preparing or serving unwrapped food to be served raw or not subject to further heating (including visitors or contractors who could potentially affect food safety)
2. staff, inpatients and residents of health care, residential care, social care or early childhood facilities whose activities increase risk of transferring infection via the faecal-oral route
3. children under the age of 5 attending early childhood services/groups
4. other adults or children at higher risk of spreading the infection due to illness or disability.

Also note: The Health (Infectious and Notifiable Diseases) Regulations 2016 do not contain any exclusionary powers or incubation periods for infectious children, or for high risk occupational groups such as people who work with children or food handlers. Instead the medical officers of health can resort to broader powers in Part 3A of the Health Act 1956, which include directions to cases and contacts to remain at home until no longer infectious.

- The Ministry for Primary Industries has powers to close commercial food premises. In contrast, medical officer of health powers focus on the risk the person poses.
- Note that while there are provisions that apply to early childhood service workers, there are no provisions for health care workers – instead, advice should be provided to employers in terms of the Health and Safety at Work Act 2015.
- Employers may decide to implement more stringent exclusion/restriction criteria in response to their own or their customers' requirements.

Treatment

- Fluid and electrolyte replacement.
- Advise complainant about the importance of ensuring adequate fluid intake while symptomatic.
- Advise to see GP if symptoms persist.

Counselling

- Advise the case and/or caregivers of the nature of the disease and its mode of transmission. Educate about hygiene, especially hand hygiene. Stress the importance of hand washing with soap and water (which is more effective than alcohol gel for norovirus) especially after going to the toilet and before preparing any food.
- A fact sheet is available that includes disinfection details: K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\AcuteViralGastroenteritisFactSheet.pdf

Management of Contacts

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

Investigate
Nil unless an outbreak. If an outbreak refer to Outbreak Control section below.

Restriction
If a contact is symptomatic, investigate by faecal culture and manage as a case until the results are known.

Prophylaxis
For people known to have eaten *C. botulinum* toxin-containing food, consult an infectious diseases specialist. Also, Botulinum antitoxin may be recommended for close contacts who may have shared the implicated food with the case in the previous 72 hours, following consultation with an Infectious Diseases specialist and the Ministry of Health.

Counselling
- Advise all contacts of the incubation period and typical symptoms of the disease, and to seek early medical attention if symptoms develop. Stress the importance of hygiene.
- A fact sheet is available that includes disinfection details: K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\AcuteViralGastroenteritisFactSheet.pdf

Other Control Measures

Identification of source
- Check for other cases in the community.
- Investigate potential food, water, or other common sources of infection (eg, young animals and farm animals) 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 waterborne transmission suspected discuss with Drinking Water assessor. If indicated, check water supply for microbiological contamination and compliance with the latest New Zealand drinking-water standards (Ministry of Health 2008).[13] https://www.health.govt.nz/system/files/documents/publications/drinking-water-standards-2008-jun14.pdf
  - Refer to the guidelines for investigating waterborne transmission incidents in chapter 8 of the Environmental Health Manual (available on EMIS).[14]

Health education
- Educate the public about hand hygiene and safe food preparation (see Appendix 3[3]) and the risks posed by exposure to farm animals and their wastes.
- 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.

Disinfection[3]
- Enteric precautions in an institution.
- For botulism[3,15] detoxify implicated foods by boiling before discarding or break the containers and bury them deeply in soil to prevent ingestion by animals. Sterilise potentially contaminated utensils.
- Clean and disinfect surfaces and articles soiled with stool. For more details, refer to Appendix 1 and for botulism, the Public Health Agency of Canada reference.[15]

Outbreak Control

Special Situations

- Outbreak in a hospital or elderly care institution refer to:
  Ministry of Health, Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions (Ministry of Health 2009):[11]
  http://www.health.govt.nz/publication/guidelines-management-norovirus-outbreaks-hospitals-and-elderly-care-institutions-0.
- Outbreak in a school refer to:
  (ARPHS) Guidelines for Schools in Responding to Gastroenteritis Outbreaks[16]
  K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Norovirus\Resources\ARPHSGastro Guidelines for Schools in Responding to Gastroenteritis Outbreaks.pdf

Case definition

Two or more cases of acute gastroenteritis associated in time or place where there is a suspected common source, and commonly caused by norovirus, rotavirus, enteric adenoviruses, *B. cereus or Staphylococcus aureus*).

ESR outbreak definition[17]*- two or more cases linked to a common source, in particular, where the common source is exposure at a common event, or to food or water dispersed in a community, an environmental source or a source in an institutional setting; etc*.:

Using the Screening form:
Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\FormsFactSheetsDocuments\Forms FactSheets\Forms – Gastro Screening CRF 150803
attempt to identify source of infection such as ingestion of suspect foods, exposure to human cases, animal faeces or recent overseas travel.

- ◊ Consider an epidemiological analysis to provide information that allows evaluation of the significance of the increased incidence.
- ◊ Consider forming a CIMS team.
- ◊ Consider discussing with the outbreak liaison staff at ESR.
- ◊ Consider discussing with Communicable Diseases staff in the Ministry of Health.
- ◊ See Investigation section for circumstances requiring involvement of MPI and local authority EHO.
- ◊ Organise faecal screening (through ESR) of symptomatic persons involved in the event or associated with the facility. These persons are to be managed as cases until results are known.

Refer also to the following documents:

- CPH outbreak guidelines[10]
- CPH forms (various):
  Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\OUTBREAK GENERAL\FormsStdLettersQuest
- Check lists for actions:
  Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\OUTBREAK GENERAL\FormsStdLettersQuest\OutbreakChecklists.
- ESR outbreak guidelines[17]
- Ministry of Primary Industry and Public Health Unit outbreak responsibilities, MoH Communicable Diseases Control Manual 2012 – December 2017 (March 2018 version) Page 2 Appendix 2[3]
- National Drinking Water Assessors Technical Manual[18]

Reporting

- If an outbreak or cluster of cases occurs, complete the Outbreak Report Form in EpiSurv.
- If an outbreak, write report for Outbreak Report File [….Com Diseases\Com Disease Control\Outbreaks\...Reports]
- File

Appendix 1

Extract from the MoH Communicable Disease Control Manual 2012 - December 2017:Appendix1: Disinfection[3]

Disinfection and cleaning the environment

Diseases that are notifiable have public health implications. Therefore decontamination of the environment is recommended when cross-infection from the source is possible. Disinfection is also indicated for contamination with y resistant bacteria.

Concurrent disinfection is the application of disinfection measures as soon as possible after the discharge of infectious material from the body of an infected person, or after articles have been soiled with such infectious discharges.

Personal protective equipment (PPE) must be used during environmental disinfection to prevent self-contamination.

Procedures

Disposable items: Any items that can be disposed of should be categorised as in NZS 4304:2002 New Zealand Waste Standard and disposed of.

Solid surfaces and/or equipment (including children's toys): Before disinfection, solid surfaces and/or equipment should be cleaned with detergent and dried. Before disinfection chemicals are applied, it should be established that they are fit for purpose a clear process on how to use them and manufacturer's recommendations are followed

Source: Ministry of Health. 2009. *Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions*. Wellington: Ministry of Health

Appendix 2

Extract from the MoH Communicable Disease Control Manual 2012 - December 2017 Appendix 2: Enteric Disease [3]

Exclusion/Restriction

Cases of most enteric disease should be considered infectious and should remain off work/school until 48 hours after symptoms have ceased. Certain individuals pose a greater risk of spreading infection and additional restriction/exclusion criteria may apply. Microbiological clearance may be required for individuals infected with/exposed to certain pathogens.

The key criteria are:

- the decision to exclude any worker is based on individual risk assessment. As a general rule, any worker with symptoms of gastrointestinal infection (diarrhoea and/or vomiting) should remain off work until clinical recovery and stools have returned to normal (where the causative pathogen has not been identified). Where the pathogen has been identified, specific criteria are summarised in Table 2.4
- the overriding prerequisite for fitness to return to work is strict adherence to personal hygiene, whether symptomatic or not.

The circumstances of each case, carrier or contact should be considered and factors such as their type of employment, availability of toilet and hand washing facilities at work, school or institution and standards of personal hygiene taken into account. For example, a carrier may be relocated temporarily to a role that does not pose an infectious risk.

Pathogen specific exclusion criteria for people at increased risk of transmitting an infection to others

Pathogen specific exclusion (restricting criteria for people from work, school or an early childhood service and for subsequent clearance are summarised in Table 2.4[4]. Additional information is also included in the table for the following groups:

1. people whose work involves preparing or serving unwrapped food to be served raw or not subject to further heating (including visitors or contractors who could potentially affect food safety)

2. staff, inpatients and residents of health care, residential care, social care or early childhood facilities whose activities increase risk of transferring infection via the faecal-oral route

3. children under the age of 5 attending early childhood services/groups

4. other adults or children at higher risk of spreading the infection due to illness or disability.

The Health (Infectious and Notifiable Diseases) Regulations 2016 do not contain any exclusionary powers or incubation periods for infectious children, or for high risk occupational groups such as people who work with children or food handlers. Instead the medical officers of health can resort to broader powers in Part 3A of the Health Act 1956, which include directions to cases and contacts to remain at home until no longer infectious. This Manual contains the recommended exclusion periods for specific diseases (Refer: Table 2.4). There is guidance published about the 2016 regulations and Part 3A of the Health Act in

www.health.govt.nz/our-work/diseases-and-conditions/notifiable-diseases/summary-infectious-disease-management-under-health-act-1956

The legislation is principles based. In this context this means that medical officer of health must weigh protection of public health (the paramount consideration) with the following principles: trying voluntary means first if likely to be effective, choosing a proportionate, and the least restrictive measure required in the circumstances, fully informing the case or contact of the steps to be taken and clinical implications, treating them with dignity and respect for their bodily integrity and taking account of their special circumstances and vulnerabilities, and applying the measures no longer than is necessary (sections 92A to 92H).

Under Part 3A a medical officer of health can direct a case or a contact to stay home (section 92I(4)(b) or 92J(4)(b)). This is when the officer believes on reasonable grounds that the case or contact poses a public health risk (as defined in the s2 Act). The direction must specify duration.

Alternatively, in the context of attendance at an educational institution, if the officer believes the infection risk is unlikely to be effectively managed by directing the case or contact, he or she can approach the head and direct them to direct the case or contact to remain at home. In serious cases, the medical officer of health can also direct the head to close the institution or part of it (s 92L).

Medical officers of health have no powers to direct closure of premises or places where people congregate, other than educational institutions. If a medical officer of health needs to manage a publichealth risk by excluding infectious people from certain occupations, public pools, campsites, concerts and other public environments, he or she can use directions to the individuals concerned – to stay away from a certain place, or not to associate with certain people.

The Ministry for Primary Industries has powers to close commercial food premises. In contrast, medical officer of health powers focus on the risk the person poses.

Note that while there are provisions that apply to early childhood service workers, there are no provisions for health care workers – instead, advice should be provided to employers in terms of the Health and Safety at Work Act 2015.

Employers may decide to implement more stringent exclusion/restriction criteria in response to their own or their customers' requirements.

Appendix 3

Extract from the MoH Communicable Disease Control Manual 2012 - December 2017 Appendix 3: Patient Information[3]

Health education resources

Pamphlets, posters and other resources available from the Ministry of Health at www.healthed.govt.nz.

Food safety practices

The Ministry for Primary Industries

The Ministry for Primary Industries (MPI) leads New Zealand's food system, ensuring the food we produce is safe and protecting the health and wellbeing of consumers. MPI is responsible for legislation covering food for sale on the New Zealand market, primary processing of animal products and official assurances related to the export of animal and plant products and the controls surrounding registration and use of agricultural compounds and veterinary medicines. MPI is the New Zealand competent authority for imports and exports of food and food-related products.
MPI contact information: www.mpi.govt.nz/contact-us

Food safety practices in preparing and cooking a hangi: He whakatairanga i nga ahuatanga mahi mo te tunu hangi:
www.mpi.govt.nz/food-safety/community-food/marae-food-safety

Safe food preparation – key messages

Educate the public about safe food preparation.

- Avoid working with food when you:
  - are unwell especially with a gastro infection
  - have open skin sores, boils or abscesses.
- Clean your hands thoroughly after using the toilet or changing nappies or other incontinent products for others and before and after preparing food.
- Wash raw vegetables and fruits thoroughly before juicing them or eating them fresh.
- Cook meat thoroughly before eating.
- Cook eggs and egg products properly. Avoid eating raw, incompletely cooked eggs or using dirty or cracked eggs.
- Keep hot food hot between cooking and eating it.

- Wash hands, utensils and chopping boards in hot, soapy water after handling uncooked food.
- Keep raw meat, poultry and fish separate from and below other foodstuffs so that any raw meat juice does not contaminate other foods stuffs especially ready-to-eat foods.
- Cover all stored food.
- Cover and put uneaten, cooked food in the refrigerator within 1 hour of cooking.
- Defrost food by placing it on the lower shelves of a refrigerator (if raw meat place on bottom shelf to avoid raw meat juice contaminating other foods) or use a microwave oven according to defrosting instructions. Avoid defrosting food at room temperature.
- Thoroughly reheat (until internally steaming or piping hot, at least 70ºC) leftover or ready-to-eat foods before eating.
- Strictly follow use-by and best-before dates on refrigerated foods.

Find out more about how to prepare and store food safely and when you need to take extra care with some types of food at www.mpi.govt.nz/food-safety/food-safety-for-consumers.

References

1. MoH Communicable Diseases Control Manual 2012 – December 2017 Update https://www.health.govt.nz/system/files/documents/publications/communicable-disease-control-manual-mar2018.pdf
2. ESR disease specific Information: https://surv.esr.cri.nz/surveillance/surveillance.php
3. MoH Communicable Diseases Control Manual 2012 – December 2017 Appendices 1, 2 (March 2018 update), 3 https://www.health.govt.nz/system/files/documents/publications/communicable-disease-control-manual-mar2018.pdf
4. Signs and Symptoms Of Microbiological And Chemical Food Poisoning ESR Signs Symptoms Food Poisoning (CFS\ProtectionTeam\FinalDocs\NotifiableConditions\AcuteGastro_SFP\FormsFactSheetsDocuments\Forms FactSheets\Forms).
5. Massey University, ehinz, environmental health indicators New Zealand. Hazardous substances surveillance system (HSSS) www.ehinz.ac.nz/our-projects/hazardous-substances/hazardous-substances-surveillance-system/
6. Health Act 1956, Schedule 1: Infectious Diseases. http://www.legislation.govt.nz/act/public/1956/0065/latest/DLM308729.html
7. ESR Manual for Public Health Surveillance in New Zealand ,Section C , ENT-2, December 2017 https://surv.esr.cri.nz/episurv/CaseReportForms/Instr-Enteric-Dec2017.pdf
8. ESR Manual for Public Health Surveillance in New Zealand ,Section C , ENT-4,5 December 2017 https://surv.esr.cri.nz/episurv/CaseReportForms/Instr-Enteric-Dec2017.pdf
9. Chapter 10.1.4.5. Storage and Transport Guidelines For The Investigation And Control Of Disease Outbreaks, ESR (EpiSurv Support site); also here: K\CFS\ProtectionTeam\Final Docs\ NotifiableConditions\OUTBREAKGENERAL\ Procedures\Guidelines for the Investigation and Control of Disease Outbreaks (ESR 2012)
10. CPH Outbreak Guidelines http://cdhbdepartments/corporate/documentmanagement/CDHB%20Libraries/Policies%20and%20procedures,%20guidelines,%20protocols,%20staff%20information%20etc/Com-Dis-Outbreak-Response-Plan.docx.
11. Refer to Outbreak Control section below for other reference: Guidelines for theManagement of Norovirus Outbreaks in Hospitals and Elderly Care Institutions (Ministry of Health 2009) https://www.health.govt.nz/system/files/documents/publications/guidelines-management-norovirus_0.pdf

12. Ministry of Primary Industry and Public Health Unit outbreak responsibilities: https://www.health.govt.nz/system/files/documents/publications/communicable-disease-control-manual-mar2018.pdf
13. Ministry of Health. 2008. *Drinking-water Standards for New Zealand 2005 (Revised 2008)*. Wellington: Ministry of Health. https://www.health.govt.nz/system/files/documents/publications/drinking-water-standards-2008-jun14.pdf
14. Environmental Health Manual. Chapter 8, Guidelines for investigating waterborne transmission incidents (available on Health EMIS).
15. Public Health Agency of Canada, Laboratory Biosafety and Biosecurity, Pathogen Safety Data Sheets and Risk Assessment, Clostridium botulinum http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/clostridium-eng.php
16. (ARPHS) Guidelines for Schools in Responding to Gastroenteritis Outbreaks K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Norovirus\Resources\ARPHS Gastro Guidelines for Schools in Responding to Gastroenteritis Outbreaks.pdf
17. Guidelines for the Investigation and Control of Disease Outbreaks (ESR 2012): Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\OUTBREAK GENERAL\Procedures\Outbreak Notification and Procedure – (also available on the EpiSurv Support site).
18. National Drinking Water Assessors Technical Manual: W:\EXT_ExtPolicies_Procedures\1_TechnicalManual\24.0 Investigation of Incidents and Outbreaks