Guidelines for Schools in Responding to Gastroenteritis Outbreaks

Advice on Prevention and Management
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Sources:

- www.waikatodhb.health.nz: Guidelines for the control of diarrhoea and vomiting outbreaks in schools
1.0 Introduction

1.1 ABOUT THIS RESOURCE

Information outlined in this guideline is designed to assist teachers and/or supervisors of students in the prevention and management of gastroenteritis within schools. This resource could be used in conjunction with other guidelines designed to assist institutional facilities to manage gastroenteritis illness. It is important that all establishments have their own policies and procedures that consider evidence based guidelines.

This resource material has been developed as a tool to provide guidance for the management of outbreaks of vomiting and/or diarrhoea in institutional settings such as public schools, colleges, private schools, boarding schools and school camps. The purpose of these guidelines is to provide generalised principles on managing gastroenteritis outbreaks in such institutions.

1.2 THE ROLE OF PUBLIC HEALTH

Auckland Regional Public Health Service (ARPHS) is responsible for a range of activities to protect and promote health in the community. Public Health staff includes the Medical Officer of Health, Medical Officers, Health Protection Officers (HPO) and Public Health Nurses.

Part of our role is to reduce the incidence of waterborne, foodborne and gastroenteric conditions within the Auckland region. We do this by investigating conditions notifiable to the Medical Officer of Health and outbreaks of gastroenteritis in the community.

When we are alerted to an outbreak of gastroenteritis, our first response is to collect information about individual’s symptoms to identify a clinical picture to know the probable cause of illness, and possible exposures to identify source of illness. This information assists in preventing further spread of the infection.

*If you have any concerns regarding diarrhoea or vomiting outbreaks in your school you should contact your nearest public health unit for help and advice. If your school is located within Auckland, call Auckland Regional Public Health Service (ARPHS) on (09) 6234600.*
1.3 TYPE OF OUTBREAKS

There are different types of outbreaks that occur, and schools are classified as ‘institutional outbreaks’ as they are high risk environments for diarrhoea and vomiting outbreaks. This is due to high populations in confined spaces spending large amounts of time together. This creates ideal opportunities for germs to spread.

Gastroenteritis outbreaks can be caused by viral or bacterial infections. There are many causes of vomiting and/or diarrhoea outbreaks, however viral gastroenteritis infections are the most common cause of such outbreaks.

1.4 VIRAL GASTROENTERITIS

Viral gastroenteritis is extremely infectious and large numbers of people can be affected in a short amount of time. There are many different viruses, but the leading cause of both sporadic cases and reported outbreaks of gastroenteritis is Norovirus. The main symptoms of norovirus gastroenteritis are vomiting and/or diarrhoea, which can be profuse and violent. People may also experience symptoms of headache, abdominal pain and fever. A person usually develops symptoms 10 to 50 hours (median 24 hours) after ingesting the virus. There is no specific treatment required except to maintain a good fluid intake.

Norovirus illness is highly infectious and anyone can get infected and get sick. Most people with norovirus illness will recover within 1 to 3 days but viral excretion can persist for several days. It spreads very easily from person to person and you can become infected by accidentally getting faecal or vomit from infected people into your mouth. This happens by:

- Eating food or drinking liquids that are contaminated with norovirus
- Touching surfaces or objects contaminated with norovirus then putting your fingers in your mouth or,
- Having direct contact with someone who is infected with norovirus by sharing bathrooms, caring for or sharing food or eating utensils
Norovirus is an infectious virus that is recognized as a leading cause of acute gastroenteritis worldwide and is the common cause of outbreaks in institutional settings including rest homes, hospitals, prisons, childcare facilities and schools. Schools and other institutional settings are at higher risk of spreading the virus for the following reasons:

- Semi enclosed environment where staff and children spend large amounts of their time together.
- Projectile vomit can result in widespread environmental contamination, which facilitates the spread of the virus.
- Both faeces and vomit are highly infectious, and the virus can survive on surfaces even after cleaning with some disinfectants.
- Children and older adults are more likely to be affected.
- Hand hygiene practices may not be adequate due to personal practices and insufficient supplies of hand soap, paper towels, etc.

*These features above contribute to large numbers of people becoming affected in institutional settings.*

### 1.5 BACTERIAL GASTROENTERITIS

Bacterial gastroenteritis often occurs when people consume food or water that is contaminated with the bacteria. Bacterial gastroenteritis is less readily passed from person to person than viral gastroenteritis, but large numbers of people may become affected from contaminated food or water. Depending on the particular organism, people affected with bacterial gastroenteritis may experience symptoms of diarrhoea, nausea, abdominal pain, fever, headache, and vomiting. Symptoms may present anywhere from one day to one month after ingestion of the bacteria.

As with viral gastroenteritis, treatment is primarily about maintaining good fluid intake. However, some people may need antibiotics, and the family doctor (GP) is the best person with whom to discuss treatment.

*The management of bacterial gastroenteritis is listed in the Ministry of Health Infectious Disease table which is included as appendix 6 of this guideline.*
2.0 Outbreak Recognition

2.1 IDENTIFY THAT AN OUTBREAK EXISTS

Compare the number of current school absentees due to vomiting and/or diarrhoea to the expected norm. Suspect an outbreak when the number of ‘single’ gastroenteritis cases is greater than what would be expected to happen within a short defined time period (e.g. 10 children reporting tummy bug on the same day). Or contact public health if for example, there are two or more cases of diarrhoea and/or vomiting in the same class on the same day. This alerts you to a possible gastroenteritis outbreak as the cases are connected in time, place, and person.

*An outbreak occurs when an increased number of people report similar symptoms that are linked by time and place.*

2.2 OUTBREAK RESPONSE

It is important for schools to have an outbreak response plan by having the necessary resources and information in place. The plan should cover when to declare an outbreak, a process in place for notifying an outbreak, and how to collaborate with an outbreak investigation.

On identifying a gastroenteritis outbreak it is essential that appropriate cleaning, disinfection and infection control measures are immediately implemented. By doing this you are reducing the risk of infection spreading and the number of cases increasing. These measures *must be* implemented for all gastroenteritis outbreaks once an outbreak is suspected. The control measures should remain until at least 48 hours after symptoms have ceased in the last case and no new cases have been reported. All staff, including cleaning staff, should be provided with information on adequate cleaning and disinfection procedures, including adequate food hygiene and catering procedures.

*Auckland Regional Public Health (ARPHS), the Ministry for Primary Industries (MPI) Auckland Council websites have good information on cleaning, food safety and food hygiene procedures*
2.3 COMPLETE AN ILLNESS LOG

It is important to complete an illness log as this information will help you in identifying if a gastroenteritis outbreak exists. Recording children and staff absent due to medical complaints (i.e. absent due to tummy bug, flu or cold) is a useful tool to identify if something out of the norm is happening. It is particularly important during an outbreak. The illness log (see appendix 6) helps in identifying if the illness is linked by time and place. During the outbreak, the log should be sent to the public health unit daily, if possible. The information is evaluated by the public health officer who assesses the status of the outbreak and makes recommendations regarding control measures.

2.4 Faecal Specimen Collection

Faecal specimens are pivotal in identifying the cause of illness. Faecal specimens should be collected from ill students and staff as soon as possible following the onset of symptoms. During the outbreak, specimens can be arranged through the family doctor or public health unit.

The public health unit will usually request about five samples from ill persons and will arrange this through the parent/guardian or staff member. The faecal specimen kit will be delivered to their home and collected later for submission to an appropriate laboratory for analysis.

*During the outbreak, public health officers will contact some parents and staff members to request faecal specimens for testing*
3.0 Outbreak Management

3.1 CONTROL MEASURES

Control measures are intended to end the outbreak by stopping transmission. Public Health can assist schools by providing recommendations and guidance regarding control measures. Public Health can assist the school principal/nominated teacher/school nurse by:

- Confirming whether an outbreak is occurring
- Verifying the nature and extent of the outbreak
- Developing a tentative hypothesis on the causative agent, source and mode of transmission of the illness
- Inspecting the facility as is necessary
- Providing advice on the exclusion of people with viral gastroenteritis from work, school or other public gatherings
- Recommending the appointment of a senior person for media and social media enquires
- ARPHS may require the school to implement certain measures to prevent the spread of the illness

Control measures are the tools that can end the outbreak by stopping transmission. Public Health can assist schools by providing recommendations and guidance regarding control measures

3.2 DEVELOP POLICY

It is important to develop policies and procedures to deal with issues when they arise. In developing policy, educators should draw together a group of people to work on the issue and to decide on the roles people will take and work through this process. It is important to decide on what is needed and what can be done. Policy should be developed for record keeping, hand hygiene and cleaning & disinfection in an outbreak situation. Adherence by everyone to policies will assist in stopping the transmission of the organisms.
3.3 ISOLATION AND EXCLUSION

Schools should develop a sickness and absence policy for all pupils and staff to minimise the risk of spread of illness. The policy should provide guidance in relation to the appropriate isolation and exclusion criteria for children and staff who are affected with gastroenteritis infection.

The following should be considered when developing a policy:

- Children and staff experiencing diarrhoea and/or vomiting, stomach pain or generally appearing unwell should be isolated and sent home.
- Parents and staff (teaching and cleaning) should inform the school if the child/staff member is ill with diarrhoea and/or vomiting symptoms.
- Requesting parents/caregivers collect sick children from school as soon as possible.
- Infected children/staff should stay at home preferably for at least 2 days (48 hours) after the end of their symptoms and/or according to the Ministry of Health infectious disease table (Appendix 6). The illness policy should be communicated to parents and staff to enhance compliance.
- An adequate policy should be in place to prevent sick staff from returning too early (they should be symptom free for at least 48 hours before return).

Children and staff experiencing diarrhoea and/or vomiting should be excluded until symptom free for at least 48 hours.

3.4 COMMUNICATION

During the outbreak it is essential that all staff, including causal staff, contractors, cleaners and parents are aware of the outbreak and control measures in place. Staff meetings should give clear instructions on:

- Transmission of gastroenteritis
- Infection control procedures
- Isolation of ill cases
- Exclusion of ill students and staff for at least 48 hours after symptoms cease
- The need to liaise closely with public health during the outbreak investigation.
3.5 DUTY OF CARE

Everyone has a duty of care to protect themselves. The principal or head teacher has a duty of care to protect all children and staff in the event of a vomiting and diarrhoea outbreak. Staff and parents should disclose relevant information (symptoms, etc.) and take the necessary actions to prevent the spread of disease.

3.6 PRIVACY

In an outbreak situation, schools and camps are requested to provide Public Health with information pertinent to the investigation. The Public Health Units are required to adhere to privacy legislation governing the collection, use and dissemination of personal information. This information includes the names and contact details of students, staff and parents, and information relating to illness which is necessary to complete the case log.

Collaboration with staff, parents and public health is pivotal in minimising the spread of infection
4.0 Practical Management

4.1 PRINCIPLES OF OUTBREAK CONTROL

The two main principles of controlling the outbreak are to **remove** the source and **restrict** the transmission of the organism. This can be achieved by:

- Isolate affected children until they are picked up by a parent or guardian (see section 4.4)
- Exclude affected children and staff as per the Ministry of Health Infectious Disease Chart (appendix 6)
- Enhanced cleaning and disinfection of the environment (see section 4.4)
- Disseminate messages about effective hand hygiene as this is the most important measure in preventing the spread of infection (see section 4.4 on hand washing). Educational material on hand hygiene is also available on the Ministry of Health’s website in the form of posters and stickers which can be used to outline recommended procedures for staff and students. All schools should also have sufficient supplies of hand soap and adequate means for hand drying.

4.2 FOOD SAFETY

Viruses can be passed on easily from person to person and via food. If food is prepared and/or sold in the school, all persons (including staff and students) should have basic food hygiene knowledge or undergo a Basic Food Hygiene course. The prevention of foodborne illness infections involves attention to hand hygiene, cleaning, proper handling and preparation of food, and care during storage.

All catered food and/or supplied food should be sourced from a registered food premises. Frequent hand washing and drying is the single most effective means of preventing the spread of bacteria and viruses that can cause foodborne illness.

**Keeping food at the right temperature**

- Keep food hot (over 60°C) or keep food cold (5°C or less).
- If food has not been stored under 5°C or over 60°C, follow the 4 hour/2 hour rule (See box below).
• If reheating, it is recommended that food should be reheated to 70°C for 2 minutes. (The best way of checking food temperatures is with a probe thermometer.)
• Reheat food once only.
• Use a non-mercury thermometer to check the fridge temperature is 5°C or less.
• When food has not been stored under 5°C or over 60°C, the 4 hour/2 hour rule should be followed (Box1).

**Box 1. The ‘4 hour / hour rule’**

If ready-to-eat food has been at temperatures between 5°C and 60°C for a total of:
• less than 2 hours, it must be refrigerated or used immediately.
• between 2 and 4 hours, it must be used immediately.
• 4 hours or longer, it must be thrown.

The Environmental Health Officer from your local Council can provide further information on food safety and operating school canteens/cafeteria.

The MPI are predominately responsible for advising the clean-up of a registered food premise setting (involving food for sale) affected by a gastroenteritis outbreak, however, the case investigating HPO may undertake this role if the premises does not involve food for sale such as a church/school/camp kitchen etc.

### 4.3 WATER SAFETY

Water in its natural state (raw water) contains organic material and pathogens which affect water quality and suitability. Waterborne illness can result from water being contaminated with bacteria, viruses or parasites. Water at schools used for drinking, cooking and hand washing should not contain such contaminants and must comply with the Drinking Water Standards for New Zealand 2005 (2008).

Most schools in the Auckland region access water through a ‘reticulated’ or ‘town water supply’. Local Authorities are responsible for the water quality for schools on town supply. However, some schools are ‘self-supplying’ therefore, if you are a self-supplying school with less than 500 people, you are required to comply with the Drinking Water Standards 2005 (2008). For further information, please refer to your local public health unit Drinking Water Assessor.
4.4 IMPLEMENTING CLEANING AND INFECTION CONTROL PROCEDURES

This section describes cleaning and infection control measures that should be implemented for all outbreaks of gastroenteritis. The table below can be used as a checklist to ensure appropriate control measures have been implemented.

### CLEANING and INFECTION CONTROL ADVICE

#### General Clean-up Procedures

Chlorine based sanitisers (bleach solution) must be used for sanitising in outbreak situations, as other disinfectants (e.g. quaternary ammonium compounds) can be effective against some bacteria, but have little effect in destroying viruses such as norovirus.

**Note:**

- Cleaning should be conducted at least twice a day until the outbreak is over.
- All cafeteria/tuck shop areas should be cleaned at the start of every outbreak investigation.

A final clean-up of all areas needs to be completed at the end of every outbreak (when there have been no symptomatic cases for at least 48 hours).

#### Chlorine Concentration

Household bleach is a high-level disinfectant capable of killing norovirus. To work properly, bleach disinfectant needs:

- enough time to kill – at least 30 minutes’ contact time is ideal
- sufficient strength or concentration
- a surface free of organic material such as vomit or faeces.

**IMPORTANT:** Make up a fresh solution of the bleach each day and discard it if not used within 24 hours.

Supermarket bleaches are sold in different strengths, usually 2–5% sodium hypochlorite solution. The strength is written on the label. The recommended concentration of bleach disinfectant is 1000 ppm (0.1%) sodium hypochlorite (Cartwright 2002). To assist in achieving this concentration, Table 3 provides a guide to diluting supermarket bleach.

**Table 3: Recipes to achieve a 0.1% bleach solution**
<table>
<thead>
<tr>
<th>Original strength of bleach (% sodium hypochlorite)</th>
<th>Volume of bleach (millilitres)</th>
<th>Volume of water (millilitres)</th>
<th>Total volume (millilitres)</th>
<th>Parts per million (ppm) achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>1000</td>
<td>9000</td>
<td>10,000</td>
<td>1000</td>
</tr>
<tr>
<td>2%</td>
<td>500</td>
<td>9500</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>3%</td>
<td>333</td>
<td>9677</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>4%</td>
<td>250</td>
<td>9750</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>5%</td>
<td>200</td>
<td>9800</td>
<td>10,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>

**Safety tips**

- Never mix disinfectant chemicals, as toxic gases can be produced.
- Be aware – bleach irritates the nose, lungs and skin. Some people are particularly sensitive.
- Wear gloves, especially if handling undiluted bleach
- Store disinfectants and diluted disinfectants safely away from children. Label them properly.

“Bleach wipes” are increasingly popular however the concentration of bleach varies widely between brands and varieties. Before using these during a norovirus outbreak, it is important to verify the concentration level for effectiveness.

**These steps should always be followed to ensure that the cleaning of food areas are effective:**

- Advise cleaning in the kitchen of all work surfaces, benches, shelving, doors, door and cupboard handles, storage areas, sinks, floors and any other areas possibly contaminated. Hot water and detergent should be used to wash, followed by a solution of 1,000 ppm of available chlorine as a disinfectant. Leave the disinfectant on surfaces for at least 30 minutes, then rinse with cold water.

- Advise the sanitation of all kitchen food contact surfaces (such as utensils, equipment, crockery and cutlery) by washing with hot water and detergent, sanitising and then rinsing with clean cold water. Sanitising can be carried out in one of the following ways:
➢ Immersing in hot water at a minimum of 82°C for two minutes (this can be done in a dishwasher as long as the rinse cycle reaches this temperature)

➢ Washing by hand then immersing in 100ppm of available chlorine for at least three minutes at 50°C (water from the hot water tap should be 50°C)

➢ For equipment that cannot be completely immersed, 1000 ppm of chlorine should be used on all surfaces, and left for 10 minutes.

☐ Supervise the cleaning of all other areas of the premises, including dining halls. Hot water and detergent should be used to wash, followed by a solution of 1,000 ppm of available chlorine as a disinfectant. Leave disinfectant for 30 minutes, then rinse with cold water.

☐ Supervise cleaning in the toilet/bathroom areas, including toilet bowls, wash-hand basins, tap handles, doors, door handles, toilet flush buttons/handles, floors and any other areas that may have been contaminated. Hot water and detergent should be used to wash, followed by a solution of 1,000ppm of available chlorine as a disinfectant. Leave disinfectant on surfaces for thirty minutes, then rinse with cold water.

☐ Ensure that when a faecal accident has occurred (e.g. in a dining room or bathroom) all surrounding surfaces are cleaned using hot water and detergent followed by 1,000ppm of available chlorine for 30 minutes as a disinfectant, and rinsed with cold water and dried.

☐ Ensure that when vomiting has occurred (e.g. in a dining room or bathroom) all surrounding surfaces are cleaned using hot water and detergent followed by 1,000ppm of available chlorine for 30 minutes as a disinfectant, and rinsed with cold water and dried. All people should be immediately removed from the area for at least one hour (when a case vomits a fine mist of virus particles is introduced into the air and can easily infect others and contaminate surfaces). Any uncovered food in the immediate area must be discarded.

☐ For cleaning of faecal accidents and vomit ensure that disposable brushes, mops and cloths are used, and discarded after use.

☐ All carpets contaminated by vomit and/or faeces should be steam cleaned, as high temperature and moisture are required to kill viruses. Clean all surface soiling
thoroughly with hot water and detergent, then use a vapour steam cleaner that boils the water until it turns to steam, rather than carpet cleaners as these use lower temperature hot water to wet the carpet (they are often called “steam cleaners” but do not actually use steam; true steam cleaners release steam under pressure, which ensures that the temperature is above 100°C, and the carpet dries quickly).

Note: The use of 1,000ppm of available chlorine on food contact surfaces is un-advisable.

### General Infection Control Measures

The following infection control procedures should be implemented:

- Ensure that ill students are isolated from the general population where possible, for example, in a sick bay, first aid room or any other appropriate room.

- Parents of the ill students should be contacted immediately and requested to collect their child and take them home as soon as possible.

- Review current hygiene, cleaning and food handling practices throughout the premises (includes kitchen and accommodation areas) and give advice on any improvements necessary.

- Staff should be assigned specific duties during an outbreak, where possible, rather than multiple tasks in several areas, to reduce the risk of transmission (for example, food handlers should not also assist with cleaning).

- Ascertain if any food handling staff have been ill with gastrointestinal symptoms (this includes all kitchen staff, waiting staff, serving staff/volunteers, and may also include nursing or child care staff) and ensure that they are sent home and do not return to work until at least 48 hours after their symptoms have stopped. It is also advisable to note if any family/household members of staff have had symptoms of gastroenteritis within the previous two weeks.

- Send all other ill staff home and request that they do not return to work until at least 48 hours after their symptoms have ceased (or, if the pathogen is known, for the time period specified in the Ministry of Health infectious disease table (see Appendix 6).

- Check the supply of water to the business. If it is other than mains water, you should request to see the most recent evidence of potability (a water sampling laboratory
Hand Washing

- Effective hand washing is the most important measure in preventing the spread of infection, and should be practised by all.

- Alcohol wipes or antibacterial gels are far less effective against viruses.

- Washing with soap and running water reduces the number of viruses on the hands to a safer level. In outbreak situations where the pathogen is often unknown, it is essential that thorough hand washing is undertaken by ALL staff as follows:

  Use warm water and soap, rub hands together vigorously for 20 seconds, ensuring that all surfaces are washed thoroughly, including the wrists and around the nails

  Rinse well under running water to remove all soap residues

  Dry thoroughly using disposable paper towels for 20 seconds (multi-use cloth towels and air driers are not suitable during outbreaks).

  If food-handling staff choose to wear disposable gloves, ensure they understand that these are single use only and need to be changed between every task and disposed of safely. Ensure that the need for careful hand washing during outbreaks is communicated to all staff and all visitors and patients/residents. They should all understand that thorough hand washing during outbreaks is necessary to reduce the risk of infecting themselves and passing the infection on to others.
### Appendix - 1 Outbreak Management Check List

<table>
<thead>
<tr>
<th>Name of School</th>
<th></th>
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<tbody>
<tr>
<td>Outbreak Number</td>
<td></td>
</tr>
<tr>
<td>Date Reported to Public Health</td>
<td></td>
</tr>
<tr>
<td>Contact Details</td>
<td></td>
</tr>
<tr>
<td><strong>Action taken by the School</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>Question</td>
<td></td>
</tr>
<tr>
<td>Illness log started</td>
<td></td>
</tr>
<tr>
<td>Communication to staff &amp; parents</td>
<td></td>
</tr>
<tr>
<td>Local Public Health Office notified</td>
<td></td>
</tr>
<tr>
<td>Affected children isolated until parents collect them</td>
<td></td>
</tr>
<tr>
<td>Affected staff and pupils excluded until symptom free for at least 48 hours</td>
<td></td>
</tr>
<tr>
<td>Sufficient resources for hand washing and hand drying</td>
<td></td>
</tr>
<tr>
<td>Cleaning and disinfection commenced</td>
<td></td>
</tr>
<tr>
<td>0.1 % hypochlorite / bleach solution prepared</td>
<td></td>
</tr>
<tr>
<td>Appropriate signage displayed</td>
<td></td>
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<tr>
<td>Personal hygiene / advice on wearing PPE given</td>
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</tbody>
</table>
Our school currently has children and/or staff with gastroenteritis (vomiting and/or diarrhoea).

To protect yourself and others please wash and dry your hands thoroughly and often.

Thank you for your cooperation.
Attention Parents

Our school currently has children and/or staff with gastroenteritis (vomiting and/or diarrhoea).

Please advise the school administrator if your child/children have symptoms of gastroenteritis.

All children with symptoms of gastroenteritis should remain at home until at least 48 hours after their symptoms have stopped.
Attention Staff & Visitors

Our School currently has students/staff with gastroenteritis (vomiting and/or diarrhoea).

Please see reception before entering the school.

Thank you for your cooperation.
### Appendix 5 ‘Illness Record Log

#### ILLNESS LOG

<table>
<thead>
<tr>
<th>Name (student or staff)</th>
<th>Parents contact details</th>
<th>Date of Birth</th>
<th>Sex</th>
<th>Room Number / work area</th>
<th>Illness start date</th>
<th>Symptoms (diarrhea, vomiting, abdominal pain, nausea, fever, headache)</th>
<th>Date illness stopped</th>
<th>Date absentee from school</th>
<th>Date returned to school</th>
<th>Visited GP?</th>
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</tbody>
</table>
### Appendix 6 'Ministry of Health Infectious Diseases Chart

<table>
<thead>
<tr>
<th>Disease/Infection</th>
<th>Time between exposure and sickness</th>
<th>Early signs</th>
<th>How long is the child infectious?</th>
<th>Exclusion of child from kindergartens, schools, etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>1–10 days, usually 3–5 days</td>
<td>Stomach pain, fever and diarrhea.</td>
<td>Until well, and possibly several weeks after.</td>
<td>Until well with no further diarrhoea.</td>
</tr>
<tr>
<td>Chickenpox</td>
<td>13–17 days</td>
<td>Fever and spots with a blister on top of each spot.</td>
<td>From up to 5 days before appearance of rash until lesions have crusted usually about 5 days.</td>
<td>For one week from date of appearance of rash.</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>24–72 hours</td>
<td>Iritis and redness of eye. Sometimes there is a discharge.</td>
<td>While there is a discharge from the eye, the child is infectious.</td>
<td>While there is a discharge from the eye.</td>
</tr>
<tr>
<td>Cryptosporidium</td>
<td>1–15 days, usually 7 days</td>
<td>Stomach pain and diarrhoea.</td>
<td>Until well, and possibly several weeks after.</td>
<td>Until well with no further diarrhoea.</td>
</tr>
<tr>
<td>Giardia</td>
<td>1–3 days</td>
<td>Vomiting, diarrhoea and fever.</td>
<td>While vomiting and diarrhoea last, and up to 7 days after illness starts.</td>
<td>Until well with no further vomiting or diarrhoea.</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>Usually 4–6 weeks</td>
<td>Sore throat, swollen glands in the neck, fever.</td>
<td>Prolonged – possibly for one year or more.</td>
<td>Until well enough to return.</td>
</tr>
<tr>
<td>Glanuldar fever</td>
<td>3–5 days</td>
<td>Fever, rash on soles and palms and in mouth. Flu-like symptoms.</td>
<td>While the child is unwell and possibly longer, because virus is excreted in faeces for weeks after.</td>
<td>While the child is feeling unwell. Unnecessary if the child is well.</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>15–50 days, usually 28–40 days</td>
<td>Nausea, stomach pain, general skin rashes. Jaundice a few days later.</td>
<td>From about 2 weeks before signs appear until 1 week after jaundice starts.</td>
<td>7 days from the onset of jaundice.</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>Close physical contact with the blood or body fluids of an infected person.</td>
<td>Similar to Hepatitis A.</td>
<td>Blood and body fluids may be infectious several weeks before signs appear, until weeks or months later. A few people are infectious for weeks.</td>
<td>Until well or as advised by GP.</td>
</tr>
<tr>
<td>Impetigo (School sores)</td>
<td>Usually 7–10 days, variable</td>
<td>Scabby sores on exposed parts of body.</td>
<td>Until 24 hours after treatment with antibiotics has started or until sores are healed.</td>
<td>Until 24 hours after treatment has started or as advised by GP or Public Health Nurse.</td>
</tr>
</tbody>
</table>

*For further information contact: Your Public Health Nurse Your Public Health Service*

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**Guidelines for the Investigation of Gastroenteritis in Schools**
## Infections Diseases

<table>
<thead>
<tr>
<th>Disease/Infection</th>
<th>This disease is spread by...</th>
<th>Time between exposure and sickness</th>
<th>Early signs</th>
<th>How long is the child infectious?</th>
<th>Exclusion of child from kindergartens, schools, etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>Coughing and sneezing and direct contact with respiratory droplets.</td>
<td>1-3 days</td>
<td>Sudden onset of fever with cough, sore throat, muscular aches and headache.</td>
<td>From 1-2 days before illness, up to 7 days.</td>
<td>Restrict contact activities until well.</td>
</tr>
<tr>
<td>Measles</td>
<td>Coughing and sneezing. Also direct contact with respiratory droplets and infected individuals.</td>
<td>Usually 10 days to onset, 14 days to rash</td>
<td>Running nose and eyes, cough, fever and rash.</td>
<td>From the first day of illness until 4 days after the rash begins.</td>
<td>At least 4 days from onset of rash.</td>
</tr>
<tr>
<td>Meningitis (Meningococcal)</td>
<td>Close physical contact, such as shaking hands and drinks, kissing, sleeping in the same room.</td>
<td>2-10 days, usually 3-4 days</td>
<td>Generally unwell, fever, headache, vomiting, sometimes a rash.</td>
<td>24 hours after starting antibiotics.</td>
<td>Until well enough to return.</td>
</tr>
<tr>
<td>Mumps</td>
<td>Contact with infected saliva.</td>
<td>Usually 16-18 days</td>
<td>Pain in jaw, then swelling in front of ear and fever.</td>
<td>For one week before swelling appears until 9 days after.</td>
<td>Until 9 days after swelling develops, or until child is well, whichever is sooner.</td>
</tr>
<tr>
<td>Ringworm</td>
<td>Contact with infected person’s skin, clothes or personal items. Also through contaminated foods and hand wash areas.</td>
<td>10-14 days</td>
<td>Red spreading ring-shaped lesions.</td>
<td>While lesions are present, and whilerngus persists on contaminated material.</td>
<td>Restrict contact activities, e.g., games and swimming, until lesions clear.</td>
</tr>
<tr>
<td>Rubella</td>
<td>Coughing and sneezing. Also direct contact with the nose/throat secretions of an infected person.</td>
<td>Usually 16-18 days</td>
<td>Fever, swollen neck glands and a rash on the face, scalp and body. Rubella during early pregnancy can cause abnormalities in the baby.</td>
<td>From 7 days before rash to 4 days after it has appeared.</td>
<td>7 days from appearance of rash.</td>
</tr>
<tr>
<td>Salmonella</td>
<td>Direct skin contact with the infected person, and sharing sheets and clothes.</td>
<td>6-72 hours, usually 12-36 hours</td>
<td>Stomach pain, fever and diarrhoea.</td>
<td>Until well, and possibly weeks or months after.</td>
<td>Until well with no further diarrhoea.</td>
</tr>
<tr>
<td>Scabies</td>
<td>Usually contact with the secretions of a chigger or mite.</td>
<td>Days to weeks</td>
<td>Itchy rash in places such as forearms, around waist, between fingers and buttocks and under armpits.</td>
<td>Until 24 hours after treatment is started.</td>
<td>24 hours after treatment is started.</td>
</tr>
<tr>
<td>Streptococcal sore throat</td>
<td>Coughing and sneezing. This virus may be passed from mother to child during pregnancy.</td>
<td>1-5 days</td>
<td>Headache, vomiting, sore throat.</td>
<td>For 24-48 hours after treatment with antibiotics is started.</td>
<td>Until 24 hours after antibiotic is started.</td>
</tr>
<tr>
<td>Slapped cheek (Human parvovirus infection)</td>
<td>Coughing and sneezing. Adults and older children may pass the infection to babies.</td>
<td>1-3 days</td>
<td>Red cheeks and face-like rash on body.</td>
<td>For variable time up to appearance of rash.</td>
<td>Unnecessary unless child is unwell.</td>
</tr>
<tr>
<td>Whooping cough (Pasteurella)</td>
<td>Coughing. Adults and older children may pass the infection to babies.</td>
<td>4-10 days</td>
<td>Running nose, persistent cough followed by “whoop”, vomiting or breathing difficulty.</td>
<td>For 3 weeks from the first signs if not treated with antibiotics, 10-14 days if child has antibiotics, until 5 days of antibiotic treatment.</td>
<td>21 days from onset of coughing, or after 5 days of antibiotics.</td>
</tr>
</tbody>
</table>

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**For further information contact:**
- Your Public Health Nurse
- Your Public Health Service

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This resource is available from www.health deadliest

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New Zealand Government

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Ministry of Health

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Guidelines for the Investigation of Gastroenteritis in Schools

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