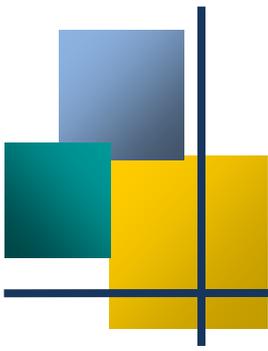




MANAGING DISEASE OUTBREAKS IN EARLY CHILDHOOD EDUCATION ENVIRONMENTS

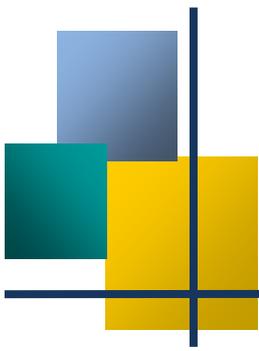


MIDCENTRAL PUBLIC HEALTH SERVICE
July 2019



MANAGING DISEASE OUTBREAKS IN EARLY CHILDHOOD EDUCATION ENVIRONMENTS

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MANAGING DISEASE OUTBREAKS IN EARLY CHILDHOOD EDUCATION ENVIRONMENTS

INTRODUCTION

Disease outbreaks are common in settings where people are in close contact, for example, education facilities, residential aged care facilities, camps and mass gathering events. In many of these settings there are one or more common activity, dining, sleeping and/or bathroom facilities. Under these circumstances, spread of common communicable diseases from an infected person is more likely to occur, either by person-to-person spread or contaminated object-to-person spread. Large numbers of people can quickly become ill as many germs are highly infectious and transmitted easily; if not managed appropriately, one sick person can result in more than twenty sick people in one or two days. The resulting disease outbreak can cause considerable distress to children, family/whanau and staff and may cause severe illness and even death in those affected.

This document has been developed to assist early childhood education management in identifying and managing disease outbreaks within their centre.

BEING PREPARED

The best way to prepare for possible outbreaks of gastroenteritis and other infectious diseases is to compile an **Outbreak Management Plan** for your centre. The information contained within this document may assist you in the development of such a plan or the review of plans currently in place. An **Outbreak Preparedness Kit** should also be assembled in preparation for any disease outbreaks (see Appendix 1).

All staff members within your centre should have access to and read your Outbreak Management Plan and/or these Guidelines. Staff should be familiar with their role and responsibilities in responding to an outbreak.

DUTY OF CARE

MANAGER/HEAD TEACHER

The Head Teacher/Manager has a duty of care to protect staff and children. She/he is responsible for ensuring that all staff are aware of the Outbreak Management Plan/Policy and comply with the Plan and infection control policy/procedures. When the Head Teacher/Manager is not on duty, the person in charge, or designated person, must take responsibility.

STAFF

Everyone has a duty of care to protect themselves and others; staff should therefore disclose relevant information, symptoms, etc., when asked to do so, and take the necessary action advised by management and Public Health Service (PHS) staff.

WHAT DISEASES CAN CAUSE OUTBREAKS?

The most common illnesses associated with outbreaks in educational settings are gastroenteritis and influenza-like illness (ILI). Other less common outbreaks have been caused by chicken-pox, measles, *Cryptosporidium*, pertussis, hand, foot and mouth disease and Hepatitis A. Whilst this document focuses primarily on gastroenteritis and ILI, the outbreak management and infection control practices outlined in this document can also be applied to effectively control other illnesses.

WHAT IS GASTROENTERITIS?

DEFINITION

Gastroenteritis ('gastro') is a common, catch-all term for infection or irritation of the digestive tract, particularly the stomach and intestine.

SIGNS AND SYMPTOMS

Early detection of signs of illness is very important so staff should be alert to one or more of the following symptoms:

- Diarrhoea
- Vomiting
- Nausea
- Stomach cramps
- Loss of appetite

Symptoms may be experienced over several hours, days or weeks, and may also be accompanied by fever, chills, headache, muscle aches and lethargy.

The cause of a person's illness usually cannot be identified from their symptoms alone. As most forms of gastroenteritis only last a short time, diagnostic tests are not usually needed. However, if the symptoms are severe or last for more than 48 hours, a doctor may require a faecal (stools/poos/tūtae) sample to establish the cause of the illness. In an outbreak situation, features of the outbreak can give clues to the possible cause and is the reason behind keeping a detailed case log of those unwell.

Most people with gastroenteritis recover quickly. The major concern with gastroenteritis is that cases, particularly the young and the elderly, can become dehydrated (dry) due to loss of fluid in the vomit and diarrhoea. Encouraging those ill to drink fluids is very important. Across the counter medicines to stop vomiting and/or diarrhoea are usually not helpful and can cause other problems.

TYPES OF GASTROENTERITIS

There are several types of germs that can cause gastroenteritis. The usual causes are listed below in order of their commonness:

• Viral Gastroenteritis

The two main agents involved are *Norovirus* and *Rotavirus* but increasingly, *Astrovirus* and *Sapovirus* are being implicated in outbreaks. Viral gastroenteritis is highly infectious and is usually spread from person to person. The illness usually lasts 1-3 days. As the virus passes from one person to the next, onset of illness in cases tends to occur over several days, rather than all at the same time.

Where a centre is affected by an outbreak of suspected viral gastroenteritis, the main focus should be on enhancing infection control practices to reduce the spread of the virus.

- **Bacterial or Protozoal Gastroenteritis**

A number of bacterial or protozoal pathogens may be responsible for outbreaks of gastroenteritis including *Salmonella*, *Campylobacter*, Shiga-toxin producing *E. coli.*, *Giardia* and *Cryptosporidium*. Outbreaks of these forms of gastroenteritis are often due to a point source (e.g. contaminated food or water served to patrons) but on occasions, can be due to person to person spread. The pattern of illness onset in the outbreak can provide information on the source of illness.

Bacterial or protozoal gastroenteritis normally cause a more severe illness and may last up to 2 weeks, depending on the cause. If bacterial or protozoal gastroenteritis is suspected, the main focus should be the search for potential food or water sources, and should be done in conjunction with PHS staff.

- **Toxin-producing Bacterial Gastroenteritis**

Some bacteria such as *Staphylococcus aureus* and *Clostridium perfringens* produce toxins that cause a generally milder form of gastroenteritis of short duration. Contaminated food is usually responsible and in this situation, a number of people will fall ill quickly within a short period of time (usually hours) of each other.

The main focus should be the search for potential food sources in conjunction with PHS staff.

WHAT IS INFLUENZA-LIKE-ILLNESS?

DEFINITION

Influenza-like-illness (ILI) is a medical diagnosis of possible influenza or other illness causing a set of common symptoms in the absence of a known cause or confirmed diagnostic test.

SIGNS AND SYMPTOMS

The common symptoms are:

- fever or feeling feverish/chills
- cough
- sore throat
- shortness of breath
- runny or stuffy nose
- muscle or body aches
- headaches
- fatigue (tiredness)

ILI outbreaks are commonly caused by influenza however other viruses such as parainfluenza, respiratory syncytial virus (RSV), adenoviruses, and rhinoviruses are also responsible.

In general people with a respiratory illness can be infectious shortly before signs and symptoms commence and for up to 5 to 7 days after becoming sick. Most people will recover in a few days to less than two weeks, but some people can develop complications (such as pneumonia) and this may be life-threatening and result in death.

HOW ARE THESE DISEASES SPREAD?

Germs which cause disease are usually transmitted (spread) by one or more of the following routes:

- **Via contaminated surfaces, food, water, etc.**, where the germ is passed indirectly from the ill person (usually by soiled hands or by coughing or sneezing) to others via objects, surfaces, food or water. People pick up the germ by touching contaminated objects or surfaces and then touching their own mouth, eyes or nose or by consuming contaminated food or water.
- **Person-to-person**, where an ill person has the germs on their hands, on their body or in body fluids, such as mucus, saliva, vomit, blood and faeces (stool, poo, tūtae), and directly touch another person. They can enter the body by being swallowed or through damaged skin or mucous membranes.
- **Airborne**, created when an ill person is actively vomiting, breathing, coughing or sneezing and the germs pass into the air and infect those people close-by.

Germs are commonly introduced to and spread within an early childhood education environment through:

- Children/visitors/staff with or without symptoms (some people become infected and can pass the germ onto others but are not unwell themselves or can be infectious for a few hours before they fall ill).
- Being passed via contaminated surfaces due to poor infection control practices (such as ineffective environmental cleaning and hand washing and drying practices).
- Consumption of contaminated food and water.
- Lack of or ineffective sanitation facilities such as toilets and wash hand basins.
- Animals (kept by the centre or visiting)
- Lack of or ineffective hand-washing and drying.

HOW DO WE PREVENT AN OUTBREAK OCCURRING?

Basic hygiene measures can greatly reduce the risk of both individual cases of illness and outbreaks occurring within an early childhood education environment. These measures include:

- Frequent and thorough washing and drying hands
- Regular cleaning and sanitising of the environment, especially high risks areas such as toilets and food preparation areas
- Provision of safe food and drinking water
- Provision of adequate sanitary facilities (toilets, wash hand basins)

In some situations, it may be appropriate for incoming children, visitors and staff to be questioned on their health status prior to arrival at the centre. Anyone reporting a history of illness in the week prior may have to be excluded from attendance for a period of time depending on the illness involved. PHS staff can provide advice on this. Generally, anyone reporting symptoms of gastroenteritis or ILI in the previous 1-2 days should be excluded until 48 hours has passed after recovery.

As some diseases can be spread by infected people who do not become unwell, i.e. are asymptomatic carriers of the disease, it is impossible to identify and exclude them from the centre.

RECOGNISING AND RESPONDING TO A DISEASE OUTBREAK

The following information is designed to assist centre management to recognise and respond to an outbreak.

To assist in the response to an outbreak, an *Outbreak Management Checklist* has been developed (refer Appendix 2). Following the steps outlined in the *Checklist* will ensure that appropriate actions are initiated as soon as possible and completed. The order in which the tasks are undertaken may vary and not all tasks may be appropriate or inclusive for the outbreak/early childhood education environment involved; rather they serve as a prompt for possible actions that will assist managing the outbreak. The *Checklist* may be used in conjunction with the *Outbreak Management Flow Chart* (see page 11).

BE ALERT TO A POSSIBLE DISEASE OUTBREAK

There are a number of definitions for an outbreak (see below) but generally it is defined as two or more cases of vomiting and/or diarrhoea occurring among children and/or staff within 48 hours of each other. If this occurs and the symptoms cannot be explained by medication or other medical conditions, you may have an outbreak.

DEFINITION OF A DISEASE OUTBREAK

A disease outbreak is defined as one or more of the following:

- Two or more cases of vomiting and/or diarrhoea in the facility within a 48 hour period
- A rise in the number of unwell children and/or staff due to a similar illness **above** what you would usually expect
- Two or more laboratory-confirmed cases of an illness or infection within the centre within a certain time period

Stress to parents/whanau to promptly report cases of illness in their children to centre staff so that an outbreak can be identified as early as possible. Sick staff should also report any symptoms of illness to their manager immediately. All reports of illness should be recorded and regularly reviewed to identify unusual patterns or increased illness rates. This can be a challenge for large centres however, the more effective the monitoring, the earlier an outbreak can be detected and the easier it will be to bring under control.

Staff should be aware of symptoms which may indicate an outbreak, for example:

- Cough and fever may represent an influenza-like illness
- Diarrhoea and/or vomiting may indicate gastroenteritis
- Skin rash and fever may represent measles

WHEN AN OUTBREAK IS SUSPECTED

If you **suspect** that you may have an outbreak within your centre, it is vital to inform the appropriate personnel of the suspected outbreak and implement infection control measures **immediately**. Early implementation of infection control measures limits the spread of the infection, preventing individual pain and distress, reducing staff and child absenteeism and reducing other costs to the centre, individuals and community. These infection control measures must be continued until the outbreak is deemed over (usually at **least 72 hours** after the last case and no further cases of illness are occurring – PHS staff can provide advice on this based on the cause of the outbreak).

Key Infection Control Measures are:

- Enhanced personal hygiene, especially hand-washing and respiratory etiquette (Appendix 3)
- Prompt removal or isolation of ill people and exclusion until for a period of time after recovery (Appendix 4)
- Enhanced cleaning of the environment (Appendix 5)
- Control/elimination of the source if animal-, food- or water-borne (Appendix 6)

■ CONFIRM THE OUTBREAK

As soon as possible, identify how many children and staff have symptoms of illness. Identify any cases that may be excluded due to a known non-infectious cause (e.g. a bowel condition). Where possible, obtain relevant child/staff history to assist in identifying the mode of transmission.

Management (or other appropriate personnel) should assess the information and confirm if an outbreak is occurring using the definition above. If you are undecided whether there is an outbreak, ask PHS staff to help you assess the cases to confirm or exclude the outbreak. As tests on clinical specimens may take more than 24 hours, **do not wait** for a laboratory confirmed diagnosis to confirm and respond to an outbreak.

■ NOMINATE AN OUTBREAK COORDINATOR

Nominate one member of staff to co-ordinate the management of the outbreak. The role of the Outbreak Coordinator is to:

- oversee and monitor the outbreak
- keep the Ministry of Education (MoE), management, family/whanau and all staff (including cleaners, laundry and kitchen staff, contractors, etc.) informed of the outbreak
- check that infection control and response tasks are undertaken
- alert the PHS to the outbreak and report daily over the duration of the outbreak
- ensure isolation/exclusion of ill children and staff
- identify when the outbreak is over and advise the PHS
- collate outbreak records (maintaining daily disease logs, reports, etc)
- coordinate evaluation of the management of the outbreak and make changes to processes/systems where required

■ NOTIFY YOUR LOCAL PUBLIC HEALTH SERVICE

Your centre should contact the Public Health Service (PHS) within 24 hours of a disease outbreak occurring. See Appendix 7 for local contact details.

PHS staff will collect information on the number of cases, symptoms, duration of illness and other details and can discuss any issues you may have and provide advice to control and manage the outbreak if necessary. Based on the information you provide, PHS staff will assess the probable cause of the outbreak and the way in which it is likely to spread.

During an outbreak, the following 'sentinel' events should also be reported to the PHS with 24 hours of occurrence:

- Admission to hospital of a staff member or child
- A food handler at the centre with gastroenteritis
- A sudden increase in number of cases over a 24 hour period

The Role of the Public Health Service is to:

- Advise on how to identify and confirm an outbreak

- Assist/conduct an outbreak investigation where necessary to determine the source
- Provide advice and resources on outbreak control measures
- Monitor illness records and control measures daily
- Collect environmental/clinical specimens where required and submit specimens for testing
- Provide relevant illness information to family/whanau, management and staff
- Distribute information about specific outbreaks and outbreak prevention in the community

■ NOTIFY AFFECTED PARTIES

All staff, family/whanau and visitors at the centre should be advised about the outbreak and actions required of them. This may be relayed via email, social media, a telephone call and/or signs advising of the outbreak posted on notice boards and all entrances to the centre.

Non-essential visitors should be restricted or discouraged from visiting during the outbreak. Any essential visitors should be advised about the need for thorough hand washing and requested to wash their hands upon entering and leaving the centre, as well as after using the toilet and before eating.

The Education Advisors at your local Ministry of Education office should also be informed of the outbreak, especially when decisions are being made around possible closure of the centre.

■ RECORDS

The centre must keep a record of each case of illness. This information helps to determine the nature of the outbreak and to monitor the effectiveness of control measures. An outbreak log can be used to record the required information. An example of a log is attached as Appendix 8.

Add each case promptly as it occurs. It is important to record symptoms and onset dates and to clearly identify ill persons. List each case ONCE only. If symptoms abate and then recur after a few days, do not re-enter that case, but amend the 'duration of illness' column.

The log should be emailed/faxed daily to the PHS during the duration of the outbreak.

■ COLLECT SPECIMENS

Ideally clinical samples should be collected from ill children or staff during an outbreak in order to identify what is causing the illness. Clinical tests should be discussed with PHS staff as the PHS may arrange more testing of samples than offered by local medical laboratories. Depending on the causative agent, faecal (stools/poos/tūtae) or nasal swabs are usually required for testing.

Those ill can arrange a consultation with their own GP or PHS staff may facilitate the gathering of samples. PHS staff can provide sampling kits to the centre and parents and will collect specimens once obtained.

A centre must have permission from parents before they can collect samples from ill children. They must inform parents once a sample has been collected from their child. PHS staff will follow up with parents directly regarding the results. They will not disclose results to the centre without parental consent as this is personal health information.

■ EXCLUDING ILL INDIVIDUALS

Exclude symptomatic individuals (including staff) until they have been symptom-free for **48 hours** under most circumstances (refer Appendix 4). In the event that the outbreak does not appear to be coming under control, the exclusion period may be extended.

Note: Some germs can continue to be shed by cases even as they are getting better. If there is a laboratory confirmation of a specific organism that is implicated as the cause of the outbreak, this may affect the exclusion period. Cases must be excluded until they are no longer able to pass the infection on to others. PHS staff will be able to provide direction on this.

■ CLOSING THE CENTRE

Centre management may need to consider closing the facility for a period of time, based on factors such as the cause of the outbreak, the number of people affected, the number of cases with severe illness, the progression of the outbreak and whether it is being responsive to control measures. The proposal to close should be discussed with MoE and PHS staff first to ensure that this is the appropriate action to take given the implications for the centre, impacts on family/whanau and children, etc.

■ WHEN THE OUTBREAK IS OVER

A disease outbreak is usually declared over when there are no new cases of illness in the centre for **at least two incubation periods of the illness**. This is the time from when someone is exposed to the germ to the time they develop symptoms. Each illness has a different incubation period. Contact the PHS for advice on when to determine if the outbreak is over.

The Outbreak Coordinator should:

- Ensure that a terminal clean of the centre environment/affected areas is completed if required (discuss with PHS staff)
- Advise all staff, family/whanau, visitors, etc. and the PHS that the outbreak is over
- Remove staff and public notices
- Reopen the centre if required
- Have additional/enhanced infection control measures suspended
- Ensure that standard infection control and cleaning measures are maintained
- Arrange a debriefing meeting of all parties involved in the outbreak to discuss and evaluate the management process.

Terminal Cleaning

Terminal cleaning is the thorough cleaning/disinfection of **all** surfaces in the centre environment or affected areas within the centre, including floors, furnishings and equipment. This is to eliminate or reduce the risk of illness re-occurring due to environmental contamination within the premises. Viral agents such as Norovirus can survive for long periods in the environment and can be an on-going risk to people who use the area. On-going outbreaks or an outbreak that does not respond to usual outbreak measures may indicate that the source of infection may be due to environmental contamination.

A terminal clean will be advised following discussion and agreement between management and PHS staff. This process is time-consuming and may require closure of all or parts of the centre for a period of time or the work being carried out during non-opening hours (see Appendix 5).

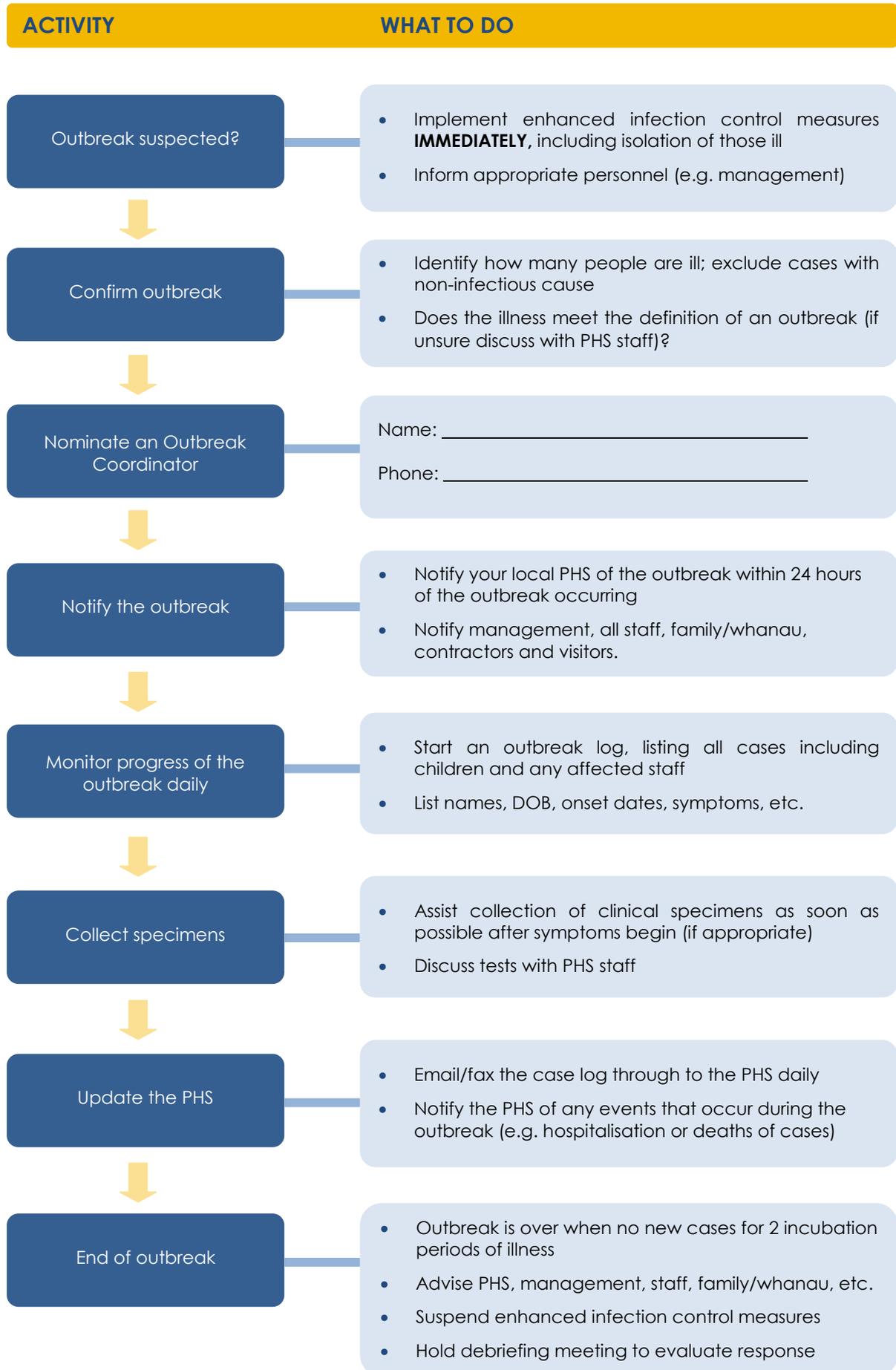
Debriefing Meeting

Once the outbreak is over, it is recommended that a meeting is held involving all parties involved in the outbreak to review the process. The focus of the meeting should be on examining aspects of the outbreak management that did and did not go well, with the aim of developing some recommendations to improve future outbreak management.

A sample evaluation form in Appendix 9 provides guidance on issues that should be evaluated at the debrief. Responsibilities for any actions that are required should be allocated to appropriate staff, with timeframes for completion and follow-up to see that they are done.

Any issues addressed and recommendations made should be documented. Any deficiencies identified in the *Outbreak Management Plan* or infection control policies should be brought to the attention of management so that amendments can be made to the documents.

FIGURE 1: OUTBREAK MANAGEMENT FLOW CHART



APPENDIX 1: OUTBREAK PREPAREDNESS KIT

A kit should be assembled in preparation for any outbreak, be it gastroenteritis, influenza-like illness or any other infectious illness outbreaks. The kit should be clearly marked and located in an area accessible by all staff.

Some items such as cleaning and sanitising chemicals may have expiry dates so a monitoring and replacement system for these items is required (marked *).

Reduce Spread

Adequate supplies of Personal Protective Equipment (PPE) and cleaning items, including:

- Face masks - N95 particulate masks (for exposure to vomiting cases or cleaning up vomit) and surgical masks
- Disposable gloves
- Disposable gowns or aprons
- Liquid soap and alcohol-based hand sanitiser*
- Paper towels or single use-disposable cloths
- Alcohol wipes (min. 70%)*
- Detergents and sanitisers (e.g. Bleach* or other appropriate disinfectant*)
- Containers and bags for holding or disposing of contaminated items
- Sick bags
- Cleaning equipment – spray bottles, buck, mops, cloths, etc.

Specimen Collection

- Specimen labels and jars
- Biohazard bags

Resources

- Facility plans, policies and procedures relating to infection control
- Disease information resources (available from the PHS)
- Signage for doors

Documentation

- Case logs

** These items are usually date marked but must be checked regularly and replaced as required.*

APPENDIX 2: DISEASE OUTBREAK MANAGEMENT CHECKLIST

<input type="checkbox"/>	<p>Do we have an outbreak?</p> <ul style="list-style-type: none"> Investigate reports of illness to determine if an outbreak is occurring (meets definition) Inform appropriate personnel (management) and agencies (PHS) 	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Implement additional infection control measures</p> <ul style="list-style-type: none"> Increase personal hygiene measures undertaken by all staff, students and visitors, especially hand hygiene Ensure adequate supplies of liquid soap, paper towels, alcohol-based hand sanitiser is available Ensure adequate supplies of personal protective equipment (masks, gowns, gloves) is available PPE must be worn by staff in direct contact with ill people or cleaning up vomit/faeces Isolate ill persons immediately if they develop symptoms at the centre and arrange collection ASAP Ensure exclusion of ill persons for appropriate period after last symptoms 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Inform staff, family/whanau, visitors, etc.</p> <ul style="list-style-type: none"> Inform all staff, family/whanau of the outbreak Advise of increased hygiene measures and their responsibility for compliance Inform MoE, contractors, visitors – notices on doors, information sheets on illness 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Restrict staff movement</p> <ul style="list-style-type: none"> Staff responsible for cleaning/washing/attending ill persons should not prepare or handle food Restrict movement of staff between different sections of the centre 	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Restrict contact</p> <ul style="list-style-type: none"> Restrict visitors, particularly children and people with compromised immune systems, e.g. people with HIV, cancer Consider suspension or postponement of planned visits outside the centre Ensure all visitor's practice hand hygiene; distribute alcohol-based sanitisers throughout the facility and insist that visitors use this on a minimum of entry and exit to the centre Exclude ill visitors for at least 2 incubation periods after their last symptoms Consider shutting down of the centre to more efficiently manage the outbreak (discuss with MoE and PHS before a decision is made to close) 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Enhance environmental cleaning</p> <ul style="list-style-type: none"> Increase frequency of cleaning of high-risk areas such as bathrooms, toilets, nappy-change areas, hand contact surfaces, e.g. handrails, door handles, using an appropriate disinfectant Disinfect communal items such as eating and drinking items, toys, etc. thoroughly Ensure vomit/faecal accidents/spills are appropriately cleaned up and decontaminated Cease vacuuming in potentially contaminated areas Instruct staff on handling and washing soiled linen and cleaning materials (bagged, kept separate, hot-wash) If external laundry or cleaning contractor is used, advise them of outbreak and their need for extra precautions 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Ensure safe food handling</p> <ul style="list-style-type: none"> Ensure staff involved with food handling are well Ensure food areas and equipment are thoroughly cleaned on a more frequent basis Cease serving 'self-service' food such as fruit platters - serve individual portions of food 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Document the outbreak</p> <ul style="list-style-type: none"> Maintain a case log of ill children and staff Update list daily and send through to the PHS 	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Collect specimens (if applicable)</p> <ul style="list-style-type: none"> Observe standard infection control practices when collecting clinical specimens Ensure an adequate volume of sample is collected and that containers are clearly labeled 	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>End of outbreak</p> <ul style="list-style-type: none"> Advise all parties when outbreak is over (no new cases for at least 2 incubation periods) Arrange terminal environmental cleaning of facility especially all surfaces in affected and high-risk areas Re-open centre once terminal cleaning is completed (if appropriate) 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<p>Evaluate outbreak management</p> <ul style="list-style-type: none"> Hold a debrief meeting of all parties involved in the outbreak Ensure any recommendations from the debrief are actioned 	<input type="checkbox"/> <input type="checkbox"/>

EFFECTIVE HAND HYGIENE

Hand hygiene (that is, hand-washing **and** drying) is one of the most cost effective and simple ways to prevent or reduce the spread of germs and must be actively encouraged in all staff and children. All staff should be trained in the correct hand-washing technique and that staff and children have easy access to hand hygiene facilities. This includes:

- warm running water
- liquid soap
- disposable paper towels
- bins for the disposal of paper towels

Plain liquid soap is adequate; antiseptic soaps are not required for routine hand hygiene, even during an outbreak. Bar soap and communal/roller towels are not recommended as they can become contaminated.

Hands should be washed as per the following steps:

- Wet your hands first
- Apply liquid soap to hands
- Lather the soap and vigorously wash your hands all over, paying special attention to palms, back of hands, in between fingers, under finger nails and around wrists
- Rinse your hands under running water
- Dry your hands thoroughly with a new paper towel

Hands should be washed:

- Upon arrival at the centre
- Before and after contact with any ill individual who is being cared for
- After contact with bodily fluids (e.g. after toileting, clearing up spills of vomit or diarrhoea)
- After contact with the ill person's equipment, clothing and their immediate environment
- After dealing with waste
- After removal of masks, gloves and aprons used for dealing with spills, waste, etc.
- After using the toilet
- Before preparing, serving and eating food

Posters should be placed in throughout the centre and especially in kitchen, toilet and bathroom facilities reminding people to wash their hands.

Alcohol-based Hand Sanitisers

Alcohol-based hand-rubs (70% alcohol content plus emollient) can be used to decontaminate hands when hand washing facilities are not available but hands should be washed as soon as facilities are available as these products are not effective against some organisms (e.g. Norovirus). Alcohol hand-rubs are only effective on hands that are visibly clean.

RESPIRATORY ETIQUETTE

Respiratory etiquette is essential in preventing the spread of ILI - quite simply it is the right way to cover your cough and sneezes:

1. Covering cough/sneeze with a sleeve or tissue
2. Disposing of used tissues in rubbish
3. Thoroughly washing and drying hands after coughing or sneezing

ISOLATION

Anyone who falls ill at the centre must be isolated **immediately** from other children and staff, ideally in a specifically designated area until they can be collected or leave the centre.

The isolation area must be close to toilet facilities and provided with a stretcher, bedding, etc. Sick children should be supervised by a designated staff member until removed. Well people should be discouraged from visiting the people who are sick to minimise the risk of disease spread. After collection, the isolation area, equipment, bedding, etc. should be cleaned and sanitised, especially if the individual has vomited in the area.

Medical attention should be sought if the person is particularly unwell. If the ill person requires hospital care, then phone ahead and warn ambulance/hospital staff that you are arriving with an ill person linked to a disease outbreak. Medical staff can then take appropriate steps to protect themselves and others once the patient arrives.

EXCLUSION

Every effort should be made to keep ill people from the centre whilst they are potentially infectious to others. Even after recovery, individuals may still be shedding germs for a period of time so can pass the illness on.

Gastroenteritis Cases

In general the following guideline is used:

THE 48-HOUR RULE

Every effort should be made to keep **any** symptomatic (ill) individual excluded **until 48 hours after** normal bowel habits have returned and any vomiting has stopped. After this time, they are less infectious to others.

Children and staff who have gastroenteritis symptoms should be kept at home for at least **48 hours** after the last episode of vomiting and/or diarrhoea. This is because the infectious agent is still being shed in quite high numbers in the first two days after recovery so the person can still pass on the illness to others. The person becomes less infectious as days pass but still must be careful with hand hygiene after toileting for the following two weeks.

For some diagnosed gastroenteritis infections, a prolonged period of exclusion may be required. Some illnesses may also require clearance sampling before an individual can return to the facility. PHS staff will provide advice on this.

Influenza-Like-Illness Cases

Those who have had **ILI** can return **48 hours** after recovery.

Other Illnesses

For other illnesses, PHS staff can provide guidance on how long people have to be excluded. The exclusion time may vary depending on the causative organism. For some illnesses, medical clearance may be required before children and staff can return to the centre.

Some germs that cause illness, for example, Norovirus have been shown to survive well in the environment. It is vital that there is a robust decontamination (cleaning and disinfection) regime within the centre. Cleaning and disinfection should be done **twice-daily as a minimum** (or more as necessary) during an outbreak of illness.

The following areas will need enhanced cleaning and disinfection:

- Bathrooms, nappy change areas and toilets with particular attention to toilet seats, wash hand basins, nappy pads, tap handles, doors, door handles and toilet flush buttons/handles, floors.
- All items or fittings that are touched frequently such as computer keyboards, toys, hand rails, cupboard handles, tables, door handles and push plates.
- Surfaces or objects that have been subject to or exposed to a faecal or vomiting incident.

Refer to MCH PHS *Cleaning and Disinfection Guidelines for Early Childhood Education Services 2018* for more detailed information on what chemicals to use, how to clean, cleaning specific items, etc.

CLEANING AND SANITISING/DISINFECTION

Cleaning with detergent and warm water is an important first step in removing germs from the environment. If surfaces are not “clean”, accumulated dirt and organic matter can protect germs and may cause further sanitising or disinfection processes to be ineffective. The friction of the cleaning process will also remove a lot of germs from the surface.

There are a number of items and surfaces that should receive an additional step, either **sanitising** (kills certain germs so that their numbers are reduced to such a level that the spread of disease is unlikely) or **disinfection** (kills virtually all germs), especially in an outbreak situation.

Sanitising/disinfection usually requires soaking or drenching the item or surface with a solution for a period of time (known as contact time) to give the chemical time to destroy any remaining germs. It is vital that this occurs – follow the manufacturer’s instructions on the product used. Heat treatment using high temperatures will also disinfect surfaces.

To be effective you must clean first, and then sanitise/disinfect:



WHAT SANITISER/DISINFECTANT SHOULD BE USED?

In choosing a disinfectant/sanitiser, be aware that many products are not effective against some germs, for example some viruses. Management must ensure that the chosen product is effective against a wide range of germs and scientific evidence should be obtained from the supplier/manufacturer to show that the product is ‘fit for purpose’.

• HYPOCHLORITE-BASED PRODUCTS

The PHS recommends the use of disinfectants/sanitisers containing **hypochlorite** for most settings (i.e. bleach solutions). Hypochlorite has outstanding disinfection properties, being effective against most common disease-causing germs. It is widely used in homes, schools, hospitals, swimming pools

and in drinking water supplies. Hypochlorite is available under many brand names including “No Frills Bleach”, “Janola”, “Domestos”.

Bleach is cheap, easy to get, easy to mix and safe if handled properly. It can be used on most hard surfaces, including most bathroom and food contact surfaces, but **be aware** that some surfaces (especially soft surfaces such as carpets and fabrics and some metals) may become discoloured or damaged by the product and alternative disinfection products may have to be used.

The recommended concentration of bleach solution for most disinfecting purposes is 0.1% hypochlorite. To achieve this, the bleach solution will have to be diluted with water. The following steps are for **bleach solutions containing 4% hypochlorite (40g/litre)**. As bleaches are sold at different strengths (between 2-5% hypochlorite) check the label on the bottle. Use the table below if the bleach solution has a different hypochlorite concentration.

For Bleach Containing 4% (40g/litre) Hypochlorite

1. Diluted bleach solution must be made up each day or it may not work. Check that the concentrated bleach is not past its use-by/expiry date.
2. A container (a non- food container of at least 1 litre) should be clearly and boldly labelled “0.1% bleach solution” and “Keep out of reach of children”. Check that the label has not faded or come off and that the container is not damaged.
3. Wear gloves when handling bleach, particularly undiluted bleach. Bleach may irritate the nose, lungs and skin, or damage clothing. Never mix chemicals, as toxic gases can be produced.
4. Add 25ml of bleach (equivalent to 5 tsp) to the container.
5. Add 975ml of water (measured with a measuring cup), or up to the 1000ml (1 litre) mark if the container has one.
6. Put the lid tightly on the container and mix gently and carefully. The solution can be decanted into appropriately labelled spray bottles if required.
7. Bleach solution must be kept out of reach of children. Undiluted bleach must be stored in a childproof area (e.g. inside a locked cupboard), and away from light and heat (which can reduce its effectiveness).
8. The end of the day, discard all remaining bleach solution. Suggestion: use the leftover bleach for soaking toys or for sanitising bathroom surfaces while completing other tasks at the end of the day.

For Bleach Containing Other Concentrations of Hypochlorite

Follow the above instructions, but alter the quantities of bleach and water according to the strength of hypochlorite found in the bleach:

Original strength of bleach on the label – in g/litre or % sodium hypochlorite	Quantity of bleach	Quantity of water	Total volume of diluted solution	Final solution strength
10 g/litre or 1%	100 ml	900 ml	1000 ml	0.1%
20 g/litre or 2%	50 ml	950 ml	1000 ml	0.1%
30 g/litre or 3%	33 ml	967 ml	1000 ml	0.1%
40 g/litre or 4%	25 ml	975 ml	1000 ml	0.1%
50 g/litre or 5%	20 ml	980 ml	1000 ml	0.1%

To increase the amount of 0.1% solution made

Double (or triple) the amount of bleach **and** water added.

- **ALTERNATIVE DISINFECTANTS**

Alternative disinfectants for 'sensitive' surfaces that may be damaged by bleach should be selected carefully. The choice of disinfectant to be used depends on the particular situation, for example, some surfaces such as keyboards and telephones cannot be disinfected using aqueous disinfectant solutions so alcohol wipes (containing >70% ethanol) can be used.

Some disinfectants have a wide spectrum, i.e. kill many different types of micro-organisms while others only kill a small range of disease-causing organisms. Some products may be sold as 'viricidal', (capable of killing viruses) but they may only be effective against certain groups of enveloped viruses and will not kill non-enveloped viruses such as *Norovirus*. Request product information sheets from the manufacturer/supplier that details which micro-organisms the disinfectant is effective against and where it can and cannot be used.

'Green' or 'natural' cleaning products are suitable only for cleaning surfaces – they do not sanitise/disinfect surfaces and should not be used for this purpose, especially in an outbreak

- **STEAM CLEANING**

Steam mops are designed to kill germs through heat rather than chemicals. Steam mops use steam to clean floors, carpets and soft furnishings that may be damaged by chemical sanitisers/disinfectants. They work by heating water contained in a tank to temperatures of around 120°C. The steam is blasted out through jets, activating a micro-fibre pad that the dirt adheres to. It is important with any steam mop that the steam achieves temperatures of at least 60°C within carpets or on hard surfaces to be effective. Seek information and assurance from the manufacturer that their appliance meets these temperature requirements.

■ **HOW TO CLEAN AND SANITISE SURFACES**

The following steps should be used to clean and sanitise surfaces. It is very important that the manufacturer's instructions are followed when using a disinfectant or sanitiser to avoid inappropriate exposures to the chemical, to ensure that the disinfection process is effective and to protect the integrity of the surfaces being disinfected.

1	Pre-clean	Remove dirt and debris by sweeping, scraping, wiping or rinsing with water.
2	Wash	Use warm water and detergent. Soak if necessary.
3	Rinse	Rinse off detergent and any remaining dirt.
4	Sanitise/disinfect	Soak/cover surface and leave for required contact time or steam clean surface
5	Final rinse	Rinse off sanitiser (if necessary).
6	Dry	Air-dry or use a single-use cloth (used for this purpose only) or paper towels.

■ **HOW DO WE CLEAN UP A BLOOD, FAECAL OR VOMIT SPILL?**

Blood, vomit and faeces may contain large numbers of infectious germs so strict procedures must be followed to prevent the spread of disease. Get organised as quickly as possible; having an outbreak kit prepared will assist here (see Appendix 1). The following precautions should be followed:

- Apart from those necessary to attend to the ill person, other people should be quickly removed from the room and the area cordoned off. Involve as few staff as possible in the clean-up.
- If possible, open windows and doors to direct the airflow to the outside of the building.
- Staff should wear personal protective equipment (PPE) such as disposable gloves and apron. A particulate respirator mask (N95) should be worn if cleaning up vomit (see below). Ensure all cuts and wounds on hands sores on hands are covered with a waterproof dressing.

- Use paper towels to soak up excess liquid and to pick up debris and place in a leak-proof, sealed plastic bag for disposal.
- Clean the surface and surrounding areas (up to 3 metres if dealing with vomit) with detergent and warm water and disposable cloths. Place used cloths in a leak-proof, sealed plastic bag.
- Disinfect the area using a freshly made disinfectant solution. Allow at least 30 minutes contact time. If the spill has occurred on carpet or soft furnishings, some disinfectants may not be effective or appropriate on this surface (e.g. bleach solutions may damage/discolour the surface/material). In these situations, the contaminated area should be cleaned with detergent and warm water and the area steam cleaned (ideally using commercial cleaning equipment). Do not vacuum carpets or soft furnishings until the area has been thoroughly cleaned and disinfected as vacuuming can cause viral particles to become airborne.
- Metal surfaces that may be damaged by bleach may be cleaned thoroughly with detergent and water and then wiped with an alcohol-impregnated wipe.
- Contaminated clothing and linen should be placed in a leak-proof, sealed plastic bag for later laundering (soak in suitable sanitiser before laundering separately, using a hot water wash). If an outside laundry company is used they should be advised that the laundry is potentially infectious.
- Clean and disinfect all non-disposable cleaning equipment.
- Remove gloves, mask and apron and seal in a plastic bag for disposal. Wash and dry hands thoroughly.
- Restrict access to the contaminated area for at least 30 minutes after cleaning has finished.

USE OF PERSONAL PROTECTION EQUIPMENT (PPE)

Anyone interacting with ill and potentially infectious people or cleaning areas where ill people have been can reduce their risk of exposure to germs by wearing PPE. PPE is for single use only; while some items such as cloth gowns are cleanable and may be used again, but most PPE equipment is disposable and is for single use only.

PPE	Gastro Illness	Influenza-Like-Illness	Rash Illness, e.g. measles	Comments
GLOVES				Wear sterile gloves when in contact with symptomatic individuals and infected body secretions. For environmental cleaning and disinfecting, general-purpose reusable rubber gloves are appropriate. Gloves should be used as an additional measure and not as a substitute for hand hygiene. Clean your hands before and after wearing gloves.
MASKS: - Surgical - N95 masks				Wear surgical masks when in contact with individuals with ILI and suspect measles. Individuals with ILI or suspect measles should wear masks when outside their isolation area. Wear N95 masks when in contact with individuals actively vomiting or when cleaning up vomit.
GOWNS				For direct contact with a symptomatic individual or their environment, including any staff cleaning potentially infected areas.

TERMINAL CLEANING

As some of the causative agents of gastroenteritis (e.g. viruses) can survive for prolonged periods on contaminated surfaces, the environment may remain as source of infection following an outbreak. Terminal cleaning of the environment may be required to reduce the risk of the illness re-occurring.

Following the end of an outbreak, all rooms that have held or serviced ill persons (e.g. sick bays, bedrooms, toilet and bathroom facilities) may require a terminal clean before re-use. A decision as to whether a terminal clean is required should be made after discussion with Public Health staff.

A terminal clean procedure varies but usually involves removing all furniture and detachable objects in the room, cleaning lighting and ducting surfaces in the ceiling and cleaning and sanitising everything downward to, and including, the floor. Items removed from the room are disinfected or sanitised before being returned to the room.

The following guidelines can be used:

1. Staff involved in the cleaning must wear a disposable apron and gloves. Wear a suitable mask when cleaning areas contaminated with faeces or vomit. Remove PPE before leaving the room.
2. Cleaning of the room should only take place once people have vacated the room. If appropriate, windows should be opened to facilitate drying of surfaces and remove odours.
3. A suitable disinfectant/sanitiser should be used that is appropriate for the material being cleaned (e.g. a chlorine solution can be used on waterproof, inert surfaces but not on fabrics; a steam cleaner can be used on soft furnishings). Use the disinfectant/sanitiser/steam mop in accordance with the manufacturer's instructions and ensure the contact times are followed. Cleaning equipment must be disposable or capable of being sanitised after use.
4. All removable possessions, furniture and equipment should be cleaned and sanitised prior to being removed from the room. Curtains, shower curtains and all linen in the room should be placed in sealed bags and removed for laundering (treat as contaminated whether visibly soiled or not).
5. Once the room has been emptied, cleaning and sanitising of interior surfaces and fixed items must be carried out. This includes ledges, window frames and sills, curtain tracks, door handles, rails, light fixtures and switches, wash-hand basins, toilets, showers, etc. It is not usual to wash down walls and ceilings however if these surfaces have been contaminated with body discharges, they will require cleaning and sanitising.
6. The floor surface shall be cleaned and sanitised as appropriate for the surface. Carpets and rugs should be steam cleaned in-situ.
7. Steam clean soft furnishings. Waterproof covers on mattresses and pillows should be cleaned and sanitised.
8. All waste from the room should be sealed in a biohazard bag and appropriately disposed of.
9. Ensure any communal items, e.g. hoists, commodes, are thoroughly cleaned and sanitised before re-use.
10. People can return to the room when all surfaces are clean and dry.

CHANGE ACTIVITIES

- Suspend interactions between groups that have experienced illness and groups that have not experienced illness. Staff should be dedicated to assigned rooms/buildings and should not move between them. Staff responsible for nappy changing/toileting or washing soiled linen should not be preparing or handling food.
- Cancel cancelling social gatherings and outings including field trips for the duration of the outbreak period.
- Consideration should be given to cancelling new enrolments or “short-term” care during the outbreak.
- Do not move toys or communal equipment from room to room during outbreaks unless they have been washed and sanitised first. Use only toys that are able to be cleaned and sanitised after each use. Consider rotating toys, so that only a proportion of the toys are used at any one time – this will reduce the amount of cleaning and sanitising each day and ensure clean items are always available.
- Suspend cookery activities with the children during an outbreak, and do not allow children to assist with meals or serve food.
- Suspend sand, playdough and water play activities during an outbreak as these may encourage the spread of the illness. Any stored playdough that was used during or after the occurrence of illness at the centre should be discarded.
- Avoid serving ‘self-serve’ foods at the centre, such as fruit platters, cheese platters, biscuit containers and sandwich plates where children’s hands may contaminate the foods and therefore each other. Individually served portions are a safer alternative.
- Staff responsible for cleaning the centre environment should not be involved in preparing or handling food.

CONTROL OF THE SOURCE

PHS staff may carry out an investigation to determine the source of the illness, especially if the pattern of the outbreak indicates exposure to a common source, e.g. food or water. Should such a source be identified, advice will be provided on measures required to eliminate or control the source of infection within the centre.

APPENDIX 7: KEY CONTACT DETAILS

Public Health Centre Whanganui

Lambie Building
Whanganui Hospital, Heads Road
Private Bag 3003
WHANGANUI

Ph: (06) 348 1775

Fax: (06) 348 1783

Email: phuwang@midcentraldhb.govt.nz

After-hours: Whanganui Hospital (06) 348 1234 (ask for the Health Protection Officer on-call)

Public Health Unit Palmerston North

Rata Hostel
Palmerston North Hospital, Heretaunga Street
Private Bag 11036
PALMERSTON NORTH

Ph: (06) 350 9110

Fax: (06) 350 9111

Email: publichealthops@midcentraldhb.govt.nz

After-hours: (06) 350 9110 (diverts to Hospital – ask for the Health Protection Officer on-call)

APPENDIX 8: DISEASE OUTBREAK CASE LOG

Name of Early Childhood Education Centre: _____

Date: _____

Estimated number of persons in school: Staff: Children:

Please use a new case log daily and email/fax to local Public Health Service: phuwang@midcentraldhb.govt.nz / 06 348 1783)

Full Name of Sick Person:	Date of Birth or Age:	Sex: M/F	Position: Management (M) Teaching Staff (T) General Staff (G) Kitchen Staff (K) Children (C)	Room/ Area:	Symptoms (see below*)	Start of symptoms (time and date)	End of symptoms (time and date)	Comments:

* **Symptoms:** Vomiting (V), Diarrhoea (D), Nausea (N), Stomach Cramps (SC), Fever (F), Cough (C), Runny Nose (RN), Rash (R), Other (O) – please define.

ACTIONS NEEDED	YES	NO
Prior to the Debrief Meeting		
1. Ensure everyone who needs to be invited, has been <i>consider management, senior staff, PHS staff</i>	<input type="checkbox"/>	<input type="checkbox"/>
2. Designate the key roles early <i>meeting chair, outbreak co-coordinator and minutes keeper</i>	<input type="checkbox"/>	<input type="checkbox"/>
3. Consider resources needed <i>e.g. laptop, projector, whiteboard</i>	<input type="checkbox"/>	<input type="checkbox"/>
At The Debrief Meeting		
1. Preparedness		
a) Staff knew the definition of an outbreak	<input type="checkbox"/>	<input type="checkbox"/>
b) Staff had read and understood the centers' <i>Outbreak Management Plan</i> or the <i>appropriate policies and procedures</i>	<input type="checkbox"/>	<input type="checkbox"/>
c) Staff knew their roles and responsibilities	<input type="checkbox"/>	<input type="checkbox"/>
d) Adequate supplies of Personal Protective Equipment were available	<input type="checkbox"/>	<input type="checkbox"/>
e) Forms for recording and signage were available	<input type="checkbox"/>	<input type="checkbox"/>
f) Staff were aware of reporting requirements to MoE, PHS	<input type="checkbox"/>	<input type="checkbox"/>
g) Staff know who to contact for advice, e.g. PHS	<input type="checkbox"/>	<input type="checkbox"/>
2. Response to outbreak		
a) The outbreak was recognized early and staff, family/whanau, visitors, etc were advised and regularly updated	<input type="checkbox"/>	<input type="checkbox"/>
b) Staff reported and recorded episodes of illness promptly	<input type="checkbox"/>	<input type="checkbox"/>
c) An Outbreak Coordinator was appointed	<input type="checkbox"/>	<input type="checkbox"/>
d) The PHS was notified within 24 hours of the start of the outbreak	<input type="checkbox"/>	<input type="checkbox"/>
3. Addition infection control measures implemented		
a) Staff are informed about and understand the purpose of additional infection control measures	<input type="checkbox"/>	<input type="checkbox"/>
b) PPE supplies were worn and supplies were maintained	<input type="checkbox"/>	<input type="checkbox"/>
c) Compliance with infection control measures was monitored and breaches were identified and addressed	<input type="checkbox"/>	<input type="checkbox"/>
4. Resources and logistics		
a) Was there enough staff over the duration of the outbreak?	<input type="checkbox"/>	<input type="checkbox"/>
b) Are there any health and safety issues to be considered?	<input type="checkbox"/>	<input type="checkbox"/>

At the Debrief Meeting		
5. Case Recording a) All cases of illness recoded on the case log promptly b) Entries were checked to eliminate duplication c) The case log was sent through to the PHS daily	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6. Specimen collection (if appropriate) a) A minimum of 2 samples collected? b) Sufficient samples obtained and containers labeled and stored correctly?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
7. At end of outbreak a) Final case log sent to PHS b) All records collated and filed c) Staff, families/whanau advised outbreak is over d) 'Terminal' cleaning of environment completed e) An evaluation 'debrief' meeting is held	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
What went well? 		
What can we improve? 		
Tasks to complete (and who is responsible): 		
Reviewed by: 		