Gastroenteritis in an Institution

Last updated: 01 July 2012

**Public health priority:**
High

**PHU response time:**
Respond to 2 or more probable cases in an institution
Respond within 1 working day of notification
Complete EntEpi within 1 month of notification

**Case management:**
Advise cases who are food handlers or who care for children, the elderly or patients to stay away from work until at least 48 hours after symptoms cease

**Contact management:**
Where food is possible vehicle, ask the NSW Food Authority to identify the likely source and mode of transmission
Review infection control procedures
Introduce control measures

1. **Reason for surveillance**

   * To identify the source and so prevent further cases
   * To monitor the epidemiology and so inform the development of better prevention strategies.

2. **Case definition**

   **Probable case**
   A person within an institution with vomiting or diarrhoea thought to be infectious at a time when at least one other person at the institution has vomiting or diarrhoea.

   **Confirmed case**
   Isolation of a pathogen consistent with the aetiology of illness from a vomitus or stool specimen in a probable case.

3. **Notification criteria & procedure**

   Gastroenteritis among two or more people of any age at a residential or educational institution, or at a health care facility is to be notified by:

   * Hospital (including aged care facilities) CEOs (or their delegates) (ideal reporting by telephone)
   * Medical practitioners (ideal reporting by telephone).
4. The disease

**Infectious agents**
Noroviruses are the most common cause of large outbreaks in institutions. Numerous enteric pathogens, including viruses, bacteria and parasites, as well as toxins produced by bacteria, can produce gastroenteritis outbreaks.

**Mode of transmission**
Gastroenteritis is transmitted in different modes, including:
- Person to person spread
- Ingestion of contaminated food or drink
- Contact with contaminated surfaces
- Ingestion of airborne droplets has been suggested for norovirus.

**Timeline**
Incubation periods and clinical features of some agents of gastroenteritis are presented in the table below.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Incubation Period</th>
<th>Clinical Features</th>
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<tbody>
<tr>
<td><em>Bacillus cereus</em> (toxin)</td>
<td>1-6 hours (vomiting) 6-24 hours (diarrhoea)</td>
<td>Malaise, vomiting and/or diarrhoea</td>
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<tr>
<td><em>Campylobacter sp</em> (bacteria)</td>
<td>1-10 days</td>
<td>Fever, nausea, abdominal cramps and diarrhoea (sometimes bloody)</td>
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<tr>
<td><em>Clostridium perfringens</em></td>
<td>6-24 hours</td>
<td>Abdominal cramps, diarrhoea and nausea</td>
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<tr>
<td><em>Norovirus</em> (virus)</td>
<td>24-48 hours (range 10-50 hours)</td>
<td>Fever, nausea, vomiting, abdominal cramps, diarrhoea and headache</td>
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<tr>
<td><em>Salmonella sp.</em> (bacteria)</td>
<td>6-72 hours</td>
<td>Headache, fever, abdominal cramps, diarrhoea and nausea</td>
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<tr>
<td><em>Staphylococcus aureus</em> (toxin)</td>
<td>0.5-8 hours</td>
<td>Abdominal cramps, vomiting and diarrhoea</td>
</tr>
<tr>
<td><em>Vibrio parahaemolyticus</em></td>
<td>4-30 hours</td>
<td>Nausea, vomiting, abdominal cramps and diarrhoea</td>
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</table>

Symptoms of viral gastroenteritis usually last between 24 and 48 hours but can sometimes be longer. Cases are usually infectious for at least 48 hours after symptoms cease. Outbreaks were there are cases with diarrhoea as the only symptom are unlikely to be caused by norovirus and consideration of a foodborne source is important.

**Clinical presentation**
Clinical symptoms vary depending on the causal agent and may include nausea, vomiting, diarrhoea, abdominal pain, myalgia, headache, malaise and low-grade fever.
5. Managing notifications

Response times

Investigation
On same working day of notification of two or more probable or confirmed cases in an institution, begin follow-up investigation. Notify the Communicable Diseases Branch and, if thought to be foodborne, the NSW Food Authority within one working day of notification.

Initial information to be sent to CDB and DoHA (if a licensed ACF) using the reporting template should include:

- Name of facility
- Type of facility
- Date institution notified PHU
- Onset date of first case
- Whether first case was resident, staff or other
- Number of cases – residents, staff
- Number at risk – residents, staff
- Symptoms of cases
- Number of cases recovered so far
- Samples collected
- Infection control measures
- Suspected cause of outbreak eg. viral person to person, foodborne

The CDB allocates a unique identifier and creates a record for the outbreak in EntEpi, using the initial information from the e-mail.

Deaths in residents during the course of the outbreak should be reported to CDB using the template.

Data entry
On the same working day of notification, ensure that the initial information (see above) is entered into EntEpi.

Within one month of notification, complete the 'PHU reporting form’ in EntEpi and tick “yes” for the question “Has this report been finalised?”

Response procedure
The response to a notification will be carried out in collaboration with the cases’ health carers and the institution that has been affected. But regardless of who does the follow up, PHU staff should ensure that action has been taken to:

- Confirm the onset dates and symptoms of the illness with cases
- Confirm results of relevant pathology tests, or recommend that tests be done
- Review control measures put in place by the institution
- Identify the cases that are in a high risk occupation (such as a food handler, child care attendant, carer).
Ensure the facility has access to the appropriate Gastro Pack.

Where food is suspected as the cause of the outbreak, request the NSW Food Authority to conduct an environmental investigation. A joint inspection of the facility is recommended. Refer to ‘Foodborne Illness Outbreak’ protocol and seek advice from Communicable Diseases Branch.

**Case management**

**Treatment**
Treatment of cases is the responsibility of the health care provider.

**Investigation**

The following steps are a guide to the investigation of gastroenteritis outbreaks in institutions. The response to the outbreak will depend on the suspected mode of transmission, cause of illness and whether there is ongoing risk of transmission. **Steps marked with an asterisk (*) should have priority:**

- If notified by someone other than the person in charge of the institution contact the person in charge of the institution and advise them you are investigating a suspected outbreak*

- Confirm the existence of the outbreak by determining the following:
  - The number of staff and residents ill and number of staff and residents ‘at risk’*
  - Onset dates and symptoms of those ill*
  - Whether any staff, carers or food handlers were ill before the outbreak and worked while symptomatic*
  - Severity of illness, including any hospitalisations or deaths, and duration of symptoms
  - Name and phone numbers of contact persons and if needed, exposed persons
  - Advise on immediate control measures to prevent further cases*
  - Menus for at least 3 days before the first case’s onset of symptoms if food is suspected as the source of illness.

- Ensure the appropriate number of specimens have been collected from those ill, and that the specimens are sent to laboratory for analysis. A minimum of one sample each from six ill persons within the institution should be collected. These should undergo standard bacterial testing and testing for viral pathogens depending on the symptom profile and epidemiology features. Stool samples should be collected as soon as possible after symptoms begin*

- Generate hypotheses on the source of the agent, the mode of transmission and the exposures that caused the disease*

- Monitor the situation to determine the effectiveness of control measures and the need for further intervention*

- Alert the receiving laboratory about the investigation of the outbreak and liaise with the contact person about the number of stool and vomitus samples that will be submitted, specific requirements for the collection of certain specimens and the estimated time frame for results

- Develop an epidemic curve to assist in establishing the mode of spread.

**Education**
The case or relevant care-giver should be informed about the nature of the infection and the mode of transmission. Emphasise the importance of hand washing, particularly after going to the toilet, changing nappies, before eating and preparing food.
Provide a verbal or written report for the manager of the institution or facility which details control and prevention measures.

**Isolation and Restriction**
- Cases who are health care workers, food handlers or who care for children or the elderly should not attend work until at least 48 hours after symptoms cease
- Cases who reside in an institution should be cohorted (separated from non-infected residents) if possible. This must include separate hand washing, toilet and bathroom facilities
- Consider the need to close the facility to new admissions if the outbreak continues and new admissions are considered to be at risk.

**Environmental evaluation**
- Review hand washing facilities and adequacy of hand washing practices
- If food is suspected to be a vehicle of spread, contact the NSW Food Authority to arrange for a review of food handling practices
- Review environmental clean-up procedures. Environmental surfaces exposed to infectious faecal matter or vomitus should be cleaned (refer to the Department of Health and Ageing Fact Sheet). Bleach 0.1% is required to inactivate noroviruses.
- Where a food or water source is suspected, follow the 'Foodborne Illness Outbreak protocol.

6. **Contact management**

**Identification of contacts**
Secondary cases should be anticipated in persons exposed to the faeces or vomitus of cases. Staff and residents should be given information about the outbreak and how to prevent infection and placed under surveillance.

**Identification of contacts**
No specific treatment is recommended for contacts.

**Epidemiological Investigation**
Where available data indicates that an unidentified source remains an ongoing risk, then a cohort or case-control study may be required to identify the source.

Refer to 'Foodborne Illness Outbreak' protocol and seek advice from Communicable Diseases Branch.