

KEY FACTS

Cholera is an acute disease caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*.

Symptoms:

- 75% of those affected have no visible signs/symptoms - they are still able to shed the bacteria in their faeces for 7-14 days;
- 80% of those who develop symptoms experience mild to moderate diarrhoea;
- Others develop severe watery diarrhoea and vomiting, which can quickly lead to severe dehydration and death.

Incubation:

- Usually 2 – 5 days.

Treatment:

- Most cases can be successfully treated with prompt administration of oral rehydration salts, though more severe cases need hospitalization with intravenous fluids and appropriate antibiotics.

Definitions:

DIARRHOEA - Surveillance definition: Any person presenting with an acute onset of **3 or more** loose bowel movements in a **24 hour period**, with or without fever.

CHOLERA – Suspected case: Any case of **profuse, watery diarrhoea** and vomiting in a person resulting in dehydration or death, who has **travelled** to an **area** known to be **affected by cholera**, within the last 5 days.

CHOLERA Laboratory-confirmed case: Any suspected case from whose stool or vomitus *Vibrio cholerae* has been isolated.

EARLY WARNING SYSTEM

PURPOSE:

Mitigation of effects of cholera through the early identification of imported cases.

RECOMMENDED ACTIONS:

1. The case definitions for diarrhoea and suspected cholera must be adhered to for surveillance/monitoring of the burden of diarrhoea on island.
2. All cases of diarrhoea should continue to be reported on a weekly basis, using the present system of submission of age and sex data to the Health Information Officer;
3. The following information must be collected from all persons presenting with acute diarrhoea:
 - a. Date of onset of symptoms;
 - b. Travel history (ask specifically if they have travelled to Haiti or the Dominican Republic).
4. **ALL** suspected cases of cholera should be reported to the Chief Medical Officer, Epidemiologist or Public Health Nurse immediately (within 30 minutes of presentation).
5. **ALL** confirmed cases of cholera should be reported to the Chief Medical Officer, Epidemiologist or Public Health Nurse within 30 minutes of receiving confirmation from the Reference Laboratory.
5. The Epidemiologist will inform other members of the Surveillance Response Team of the confirmed case(s) (via e-mail) and meetings will be convened as deemed necessary.

OUTBREAK VERIFICATION

PURPOSE:

Rapid response to the risk of cholera being imported to Montserrat.

RECOMMENDED ACTIONS:

1. Stool specimens should be collected from **ALL** persons fitting the case definition of a Suspected Case of Cholera, i.e: *3 or more loose bowel movements in a 24 hour period, with or without fever; **AND** a history of travelling to/from Haiti or the Dominican Republic within the last 5 days.*
 - Fresh stool is the recommended specimen for testing
 - Specimen containers are available from the Glendon Lab.
2. Stool specimens should be placed in a sterile container and sent to the Glendon Laboratory immediately – if this is not possible the specimen should be **refrigerated** at 2-8°C;
3. A CAREC Laboratory investigation form **MUST** be completed for **EACH** patient from whom a specimen is collected. The form should accompany the specimen to the Laboratory.
4. **If the specimen is collected at a time when the Laboratory is closed, the Technologist on-call should be informed that the specimen has been collected.**
5. The Glendon Laboratory staff will pack and ship specimens to CAREC by the most expeditious means.

Once cholera is confirmed on island, all presenting cases of diarrhoea will be treated as being due to cholera; until advised otherwise.

PACKING & SHIPPING OF SPECIMENS

PURPOSE:

Timely, safe transport of diagnostic specimens from Montserrat to the Laboratory Division of the Caribbean Epidemiology Centre, CAREC.

RECOMMENDED ACTIONS:

The following guidelines adapted from the CAREC Shipping Guidelines should be utilised for specimens received in the Glendon Hospital Laboratory:

1. Inoculate a small amount of stool into Cary Blair medium and keep at 2-8°C. Keep a small amount of stool stored at 2-8°C in a sterile container for further testing.
2. Secure tube caps with parafilm.
3. Pack and ship samples using IATA regulations for shipping stools samples with ice packs to maintain a 2-8°C environment.
4. All specimens sent to CAREC must be accompanied by the appropriately completed CAREC Laboratory Investigation Form – for specimens received without the appropriately completed CAREC form – Laboratory staff will contact the Physician who made the presumptive diagnosis and request that the form be completed with minimum delay.
5. Complete the appropriate Customs Invoices and inform courier service about package to be shipped.
6. Notify CAREC on the day that the specimen is shipped.

Glendon Laboratory Staff are expected to report results to the Chief Medical Officer or Epidemiologist within 30 minutes of receipt of the results from CAREC.

MONITORING PROCEDURES FOR PERSONS ENTERING AT THE PORTS OF ENTRY

PURPOSE:

Mitigation of effects of cholera through the assistance of non-Ministry of Health stakeholders, in the early identification of imported cases.

The following actions have been recommended for Immigration Officers, in response to observing a passenger appearing to be unwell on arrival at the port, especially if they have arrived from Haiti or the Dominican Republic:

RECOMMENDED ACTIONS:

1. Ask the passenger to remain in Immigration;
2. Telephone the 'Nurse in Charge of the shift' at the hospital and report your observations - contact numbers: 491-2552/ 491-2802/ 491-2836;
3. Discuss with the Nurse whether the Doctor will come to the Port or whether arrangements should be made to have the passenger transferred to the Casualty Department;
4. Arrange for relatives/friends to take the passenger to the Casualty Department OR request Ambulance Service.
5. Inform the Chief Medical Officer of the event – contact numbers: 491 2880/ 496 2408.

'HIGH RISK' GROUPS IDENTIFIED

PURPOSE:

To identify groups for whom special care would be required should they become infected with *Vibrio cholerae*.

Cholera tends to have explosive outbreaks in situations of poor basic infrastructure where the requirements of clean water and safe waste disposal are not met.

Despite the displaced nature of sections of our population, there is access to potable water and sanitation services; we do not anticipate that a single (or small cluster) of imported case(s) would spread extensively.

GROUPS IDENTIFIED

The risk associated with imported cholera would be to individuals who may develop severe forms of the disease due to impaired immune response. These include:

- persons who are malnourished;
- persons who are HIV infected;
- persons with reduced immune response due to medications;
- persons suffering from conditions which result in reduced stomach acid.

TREATMENT PROTOCOL

PURPOSE:

1. Cholera requires immediate treatment because the disease can cause death within hours. The approach is as follows:

- (i) Assess the patients' hydration status based on the presence of the symptoms and signs outlined below.
- (ii) Replenish the water and electrolytes lost through diarrhoea and vomiting.
- (iii) Antibiotic therapy has been shown to shorten the course of disease and reduce severity of symptoms

Patients at the extreme ages of life, especially children under 18 months, require close monitoring and immediate measures if their condition worsens. These patients must be prioritized in triage.

RECOMMENDED ACTIONS:

1. Severity assessment - hydration status

Severe dehydration

- Lethargic, unconscious
- Incapable of drinking or nursing (infants)
- Weak radial pulse
- Skin pinch goes back very slowly

Moderate dehydration

- Sunken eyes
- Absence of tears (in children)
- Dryness of the oral mucosa, tongue, and mucous membrane
- Intense thirst; drinks eagerly
- Skin pinch goes back slowly

Mild or no dehydration

- None of the above.

2. Rehydration protocols (PAHO October, 2010)

Dehydration Status	Guidelines												
<p>Severe: Rehydrate in 2 phases</p>	<p>1. <u>Intravenous rehydration (2-4 h):</u> Intravenous Ringer Lactate is recommended, at the following perfusion rate: 1st hour: 50 ml/ kg 2nd hour: 25 ml/ kg 3rd hour: 25 ml/ kg Clinical assessment to determine whether to continue intravenous rehydration.</p> <p>2. <u>Oral rehydration:</u> Oral rehydration salt should be given as soon as the patient is able to drink. The guideline for moderate dehydration (below) should be followed.</p>												
<p>Moderate Oral rehydration</p>	<p><u>Administer in the first 4 hours:</u></p> <table border="0"> <tr> <td>Patients less than 4 months (< than 5 kg):</td> <td>200 - 400 ml</td> </tr> <tr> <td>Patients 4 to 11 months (5 to 7.9 kg):</td> <td>400 - 600 ml</td> </tr> <tr> <td>Patients 13 to 23 months (8 to 10.9 kg):</td> <td>600 - 800 ml</td> </tr> <tr> <td>Patients 2 to 4 years (11 to 15.9kg):</td> <td>800 - 1200ml</td> </tr> <tr> <td>Patients 5 to 14 years (16 to 29.9 kg):</td> <td>1200 - 2200ml</td> </tr> <tr> <td>15 years and older (30 kg or more):</td> <td>2200 - 4000ml</td> </tr> </table>	Patients less than 4 months (< than 5 kg):	200 - 400 ml	Patients 4 to 11 months (5 to 7.9 kg):	400 - 600 ml	Patients 13 to 23 months (8 to 10.9 kg):	600 - 800 ml	Patients 2 to 4 years (11 to 15.9kg):	800 - 1200ml	Patients 5 to 14 years (16 to 29.9 kg):	1200 - 2200ml	15 years and older (30 kg or more):	2200 - 4000ml
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<p>Mild Oral rehydration</p>	<p><u>Children under 2:</u> 50 - 100 ml of oral rehydration solution (ORS), after each evacuation, providing a volume similar to the assessed fluid loss (gastrointestinal and urinary).</p> <p><u>Children aged 2 to 14 years:</u> 100 - 200 ml of oral rehydration solution (ORS), after each evacuation, providing a volume similar to the assessed fluid loss (gastrointestinal and urinary).</p> <p><u>Children over 14 and adults:</u> Volume of ORS similar to the assessed fluid loss (gastrointestinal and urinary); up to 2 litres daily.</p>												

In the case of infants breast-feeding should be continued.

It is extremely important to keep a written record of fluid loss and intake in order to appropriately adjust the administration of fluids.

Antibiotic Therapy (PAHO October, 2010)

	Option 1	Option 2
Adults	Doxycycline, 300 mg po single dose	Azithromycin, 1g po single dose or Ciprofloxacin, 1g po single dose
Pregnant Women	Azithromycin ³ , 1g po single dose	Erythromycin, 500 mg/ 6 hours for 3 days
Children over 1 year of age	Doxycycline, suspension or tablet 2-4 mg/kg po single dose ²	Ciprofloxacin, suspension or tablets, 20 mg/kg, single dose or Azithromycin, 20 mg/kg, single dose, without exceeding 1 g or Erythromycin 12.5 mg/kg/ 6 hours for 3 days.
Children under 1 year of age	Doxycycline, suspension, 2-4 mg/kg po in a single dose ²	Ciprofloxacin, suspension or tablets, 20 mg/kg, single dose or Azithromycin, 20 mg/kg, single dose, without exceeding 1 g or Erythromycin 12.5 mg/kg/ 6 hours for 3 days.

Isolation

The Physiotherapy Unit of the Glendon Hospital will be utilized for isolation and treatment of severe cases of cholera.

CONTAINMENT OF OUTBREAK

PURPOSE:

To care for affected persons in a manner that reduces the likelihood of the spread of *Vibrio cholerae*, thereby protecting the health of the staff and other patients.

RECOMMENDATIONS:

1. Entry to the isolation unit will be restricted to staff involved in patient care and housekeeping duties.
2. All persons entering the unit will be required to wear PPE. PPE must be removed upon leaving the unit.
3. Areas within the isolation unit will be disinfected with **0.5% bleach** solution as follows:

Surface	Frequency
Floors	Twice daily AND immediately following incidents that cause soiling
Shower(s)	Twice daily
Toilets & adjacent walls	Twice daily
Beds/cots & adjacent walls	When soiled AND between patients
Wheel chair(s)	Following each use

4. Other equipment (not in isolation unit) that need to be disinfected:

Ambulance	Immediately following each use

Waste Management

1. All waste produced will be divided into THREE categories for disposal:

Category	Means of Disposal
SHARPS - needles, lancets, syringes - ampoules, glass	Place in safety boxes for removal by designated staff
ORGANIC MATERIAL - body fluids (vomit, stool) - used cotton, gauze - left over food,	Flush down toilet Place in ORANGE biohazard bags for removal Placed bins provided
OTHER WASTE - paper, plastic	Place in garbage bags for removal by designated staff

2. Receptacles (buckets/pails etc) used to collect stool or vomitus should contain 2% bleach solution prior to use.

POST-OUTBREAK PROTOCOL

PURPOSE:

The prompt and safe restoration of the Physiotherapy Unit to its intended use, following the end of a Cholera outbreak.

RECOMMENDED ACTIONS:

Following the declaration that the Cholera outbreak is over, the following actions shall be undertaken (supervised by Facilities Manager and/or Supervisor of Housekeeping)

1. Remove and store cots, and other equipment.
2. Discard items identified as single use.
3. Clean/disinfect all equipmentas outlined in the protocol.
4. Clean/disinfect walls and other surfaces as outlined in protocol.
5. Replace physiotherapy equipment.

TRAINING SCHEDULE –

Doctors	Clinical Care of cholera Correct use of PPE	To be confirmed
Maids & Washers	Cleaning, disinfecting, sanitising Cleaning and disinfecting floors Cleaning and disinfecting walls, and other surfaces Disposing of cleaning solutions Rags and mops Correct use of PPE Handling laundry/linen	Sept 17 th & 20 th (9:30 – 12:00)
Orderlies & Drivers	Correct use of PPE Cleaning, disinfecting, sanitising Cleaning the ambulance, trolley, wheel chairs Handling laundry/linen Handling the dead	October 24 th (1:30 – 4:00)
Nurses	Clinical Management of Cholera Use of PPE	On-going
Fire & Rescue	Cleaning, disinfecting, sanitising Cleaning the ambulance, trolley, wheel chairs Handling the dead Correct use of PPE	To be confirmed
Morticians	Handling the dead Correct use of PPE	October 24 th