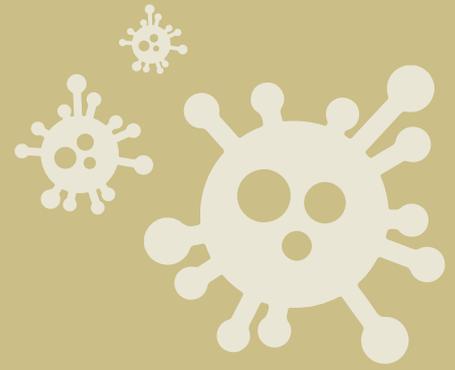


HUMAN WELLBEING

Combating cholera



Student Workbook



Health is one of the most essential components of an individual's wellbeing and a nation's development. Yet millions of people across the globe suffer from preventable diseases; one of which is cholera. Although easy to treat and prevent, cholera affects up to 4 million people worldwide per year, resulting in up to 140,000 deaths¹.

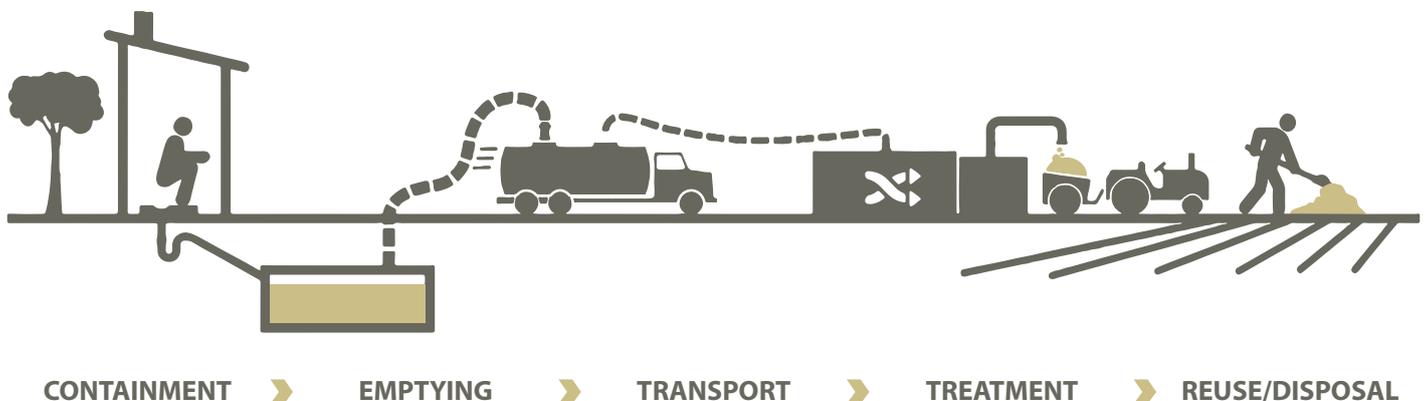
¹ [World Health Organization: Cholera fact sheet](#)

STARTER ACTIVITY

It might be a stinky topic, but have you ever thought about what happens to your personal waste once you flush it down the toilet?

Have a look at the graphic below and consider why you might be fortunate to live in a place that has a system similar to this.

SANITATION VALUE CHAIN



ACTIVITY 1: WHAT IS CHOLERA?

► Read the following facts about cholera:



- Cholera is a disease caused by eating food or drinking water contaminated with a bacterium called *Vibrio cholerae*.
- Contamination usually occurs when there is contact with faecal matter.
- Cholera can cause severe watery diarrhoea and vomiting, and a patient can lose up to 25 litres of fluid a day from their body.
- The disease spreads easily and rapidly, and if not treated quickly, it can lead to death.
- Outbreaks can spread rapidly in over-crowded communities and in dense living conditions where there is inadequate access to clean water, waste collection and proper toilets.
- Cholera is simple to treat and it can be prevented long-term with adequate facilities and procedures.

FURTHER READING

🔗 [MSF: Cholera](#)

ULTIMATELY,
**NO-ONE SHOULD
DIE OF CHOLERA**
- YET WELL OVER 100,000 PEOPLE
DIE EACH YEAR FROM THIS DISEASE

Although easy to prevent and treat, cholera affects up to 4 million people worldwide, resulting in more than 140,000 deaths

🔗 [World Health Organization: Cholera fact sheet](#)



► Watch the video about how the body reacts to cholera and answer the following questions.

VIDEO

▶ [Killer Diseases - How the Body Reacts to Cholera](#)

FURTHER READING

🔗 [Medecins Sans Frontieres International: interactive cholera page](#)

a) Where does the bacteria *Vibrio cholerae* like to live and multiply?

.....

b) Does everyone carrying the bacteria show symptoms of cholera?

.....

c) What are the symptoms of cholera infection?

.....

d) What is the most important thing for doctors to focus on?

.....

e) How fast can patients recover once they have been treated?

.....

ACTIVITY 2: MAP AND STATISTICS

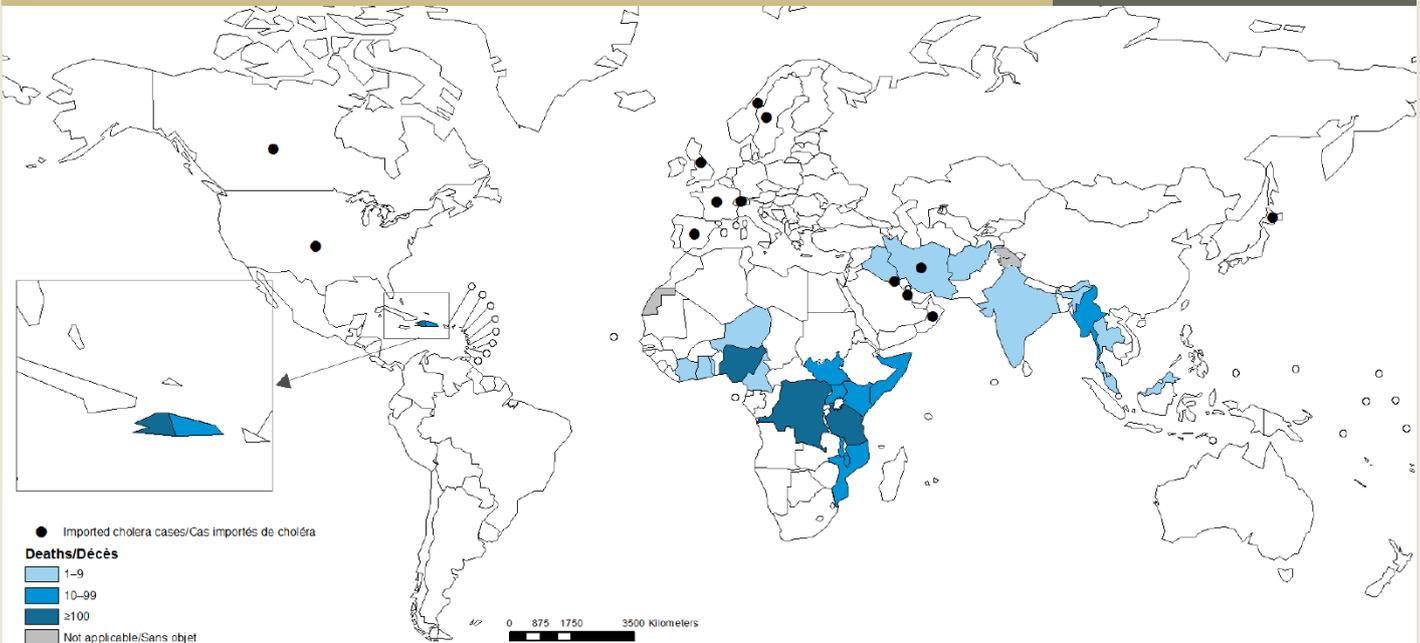


➤ Refer to the map and answer the questions below.

COUNTRIES REPORTING CHOLERA DEATHS AND IMPORTED CASES IN 2016

Source: World Health Organization³

 ³ World Health Organization: Map Gallery



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
Les appellations employées dans la présente publication et la présentation des données qui y figurent n'impliquent de la part de l'Organisation mondiale de la Santé aucune prise de position quant au statut juridique des pays, territoires, villes ou zones, ou de leurs autorités, ni quant au tracé de leurs frontières ou limites. Les lignes discontinues et en pointillé sur les cartes représentent des frontières approximatives dont le tracé peut ne pas avoir fait l'objet d'un accord définitif.

Data Source: Control of Epidemic Diseases Unit
World Health Organization

Map Production: Information Evidence and Research (IER)
World Health Organization

 **World Health Organization**
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 **Organisation mondiale de la Santé**
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a) Which continent had the highest rate of cholera death in 2016?

.....

b) Give a reason for your answer in (a):

.....

c) Why do you think Australia does not experience cholera deaths today?

.....

.....

d) In the pull-out map, the island Hispaniola is featured, which is made up of two countries – Haiti to the west and the Dominican Republic to the east.

Which country had the highest rate of cholera deaths?

.....

e) EXTENSION: YEMEN

Do some research about cholera in Yemen. Find out facts about its economy, health and social systems.

What impact do these facts have on the rate of cholera deaths?

.....

.....

MSF reading material for extension:

 [2017 Deadly cholera outbreak](#) [2019 Cholera spreads in Yemen](#)

ACTIVITY 3: CASE STUDIES

➤ Look at the images and read the information about the following four case studies.

CASE STUDY 1 – BANGLADESH

Open defecation (going to the toilet outside, such as in the bush, fields or beaches) is a practice that greatly increases the risk of cholera outbreaks. According to the World Health Organisation about 1.1 billion people (15% of the global population) are forced to practice open defecation. Faecal matter that is not contained, such as in a toilet or pit, is more likely to make its way into water sources especially when it rains, contaminating that water source. For most, however, open defecation may be the only option. For instance, when the Rohingya refugees, fleeing persecution in Myanmar settled in makeshift camps in Bangladesh there were few toilets and clean water sources. Pit toilets quickly became full and overflowing so people defecated in the open, further polluting the water⁴.

Because of population displacement, destruction of infrastructure, or lack of services, cholera is a serious risk in the aftermath of a natural disaster or during conflict. The situation can be especially problematic in rainy season or floods when houses and latrines flood or overflow and contaminated water collects in stagnant pools.



© MSF

[4 Medecins Sans Frontieres International:](#)
Bangladesh: Needs for clean drinking water are still extreme

CASE STUDY 2 – YEMEN



MSF Cholera treatment center in Al-Sadaqa hospital in Aden. © Malak Shaher / MSF

More than three million people have been displaced since war broke out in Yemen in 2015. Parties at war have destroyed much of the country's public infrastructure, including health facilities and sanitation systems. This has contaminated crucial water sources. Even where medical facilities are operational, most people are no longer able to afford the transport costs to go to them. This means they are unable to seek timely care, and curable health conditions turn deadly when left untreated. As a result of the war it is even harder for people to access clean water, dispose of waste and get medical care.

FURTHER READING

[4 Medecins Sans Frontieres International:](#)
MSF treats exponential increase in cholera cases...

CASE STUDY 3 – HAITI



A girl looks out from the doorway of what was her family's home in Roche-a-Bateau, southwestern Haiti.

© Andrew McConnell / Panos Pictures

Haiti, a country located in the Caribbean sea, is wracked by extreme poverty, unaffordable health care and limited infrastructure, such as sewage treatment and waste collection. Many Haitians lack access to clean water sources and proper sanitation systems. On top of this, Haiti has a history of suffering major natural disasters including cyclones, hurricanes, floods and earthquakes. In 2010 a huge earthquake hit the capital, followed swiftly by an outbreak of cholera that killed 3,500 people. By July 2011 nearly 6,000 people had died from cholera. In 2012, Hurricane Sandy left 20,000 people without homes. In 2016, Hurricane Matthew killed hundreds of people and destroyed thousands more homes, making the cholera outbreak more likely to take hold.

FURTHER READING

[Medecins Sans Frontieres International:](#)
[Too few beds to treat cholera patients](#)

CASE STUDY 4 – DEMOCRATIC REPUBLIC OF CONGO (DRC)

Mbuji-Mayi, one of the main cities of Democratic Republic of Congo (DRC), has more than 5 million inhabitants, many of whom live in over-crowded communities with poor public infrastructure, so cholera outbreaks are common. People don't have access to many toilets, clean drinking water, sewage treatment and rubbish, and open defecation is common. It is especially critical during the dry season (May-September), when access to drinking water becomes even more challenging for a big part of the population. Often the only option for drinking water is the city's contaminated rivers, which sharply increases the risk of contracting the disease.

FURTHER READING

[Medecins Sans Frontieres International:](#)
[MSF steps up cholera support in DRC](#)



Mbuji-Mayi, one of the main cities of DRC.

© Giorgia Girometti / MSF

► **Use the case studies and prior information above to complete the table.**

Describe what some of the risk factors are for a community suffering cholera outbreaks. In groups, discuss how each risk factor could be responded to in an effort to prevent the outbreak of cholera.

| | ECONOMIC | ENVIRONMENTAL | CULTURAL AND SOCIAL |
|---|----------|---------------|---------------------|
| RISK FACTORS  | | | |
| PREVENTION IDEAS  | | | |

ACTIVITY 4: TREATING CHOLERA

Médecins Sans Frontières' (MSF), meaning Doctors without Borders, is an international, medical humanitarian organisation working to provide medical assistance to people affected by conflict, epidemics or disasters.

When there is an outbreak of the deadly disease cholera, MSF is quick to respond. Fortunately, cholera is relatively simple to treat in most cases, with fluids and oral rehydration to prevent dehydration. However, cholera can spread quickly and can turn deadly if not treated quickly. One response by MSF is to set up a Cholera Treatment Centre (CTC).

▶ Watch the video about a cholera outbreak in Haiti. Then study the interactive CTC map. Use this information to label your own CTC map on the following page.

VIDEO

▶ [Haiti. The cholera epidemic gains ground](#)

🗺️ [CTC interactive map](#)

CHOLERA TREATMENT CENTRE

🗺️ [An interactive guide to an MSF cholera treatment centre](#)

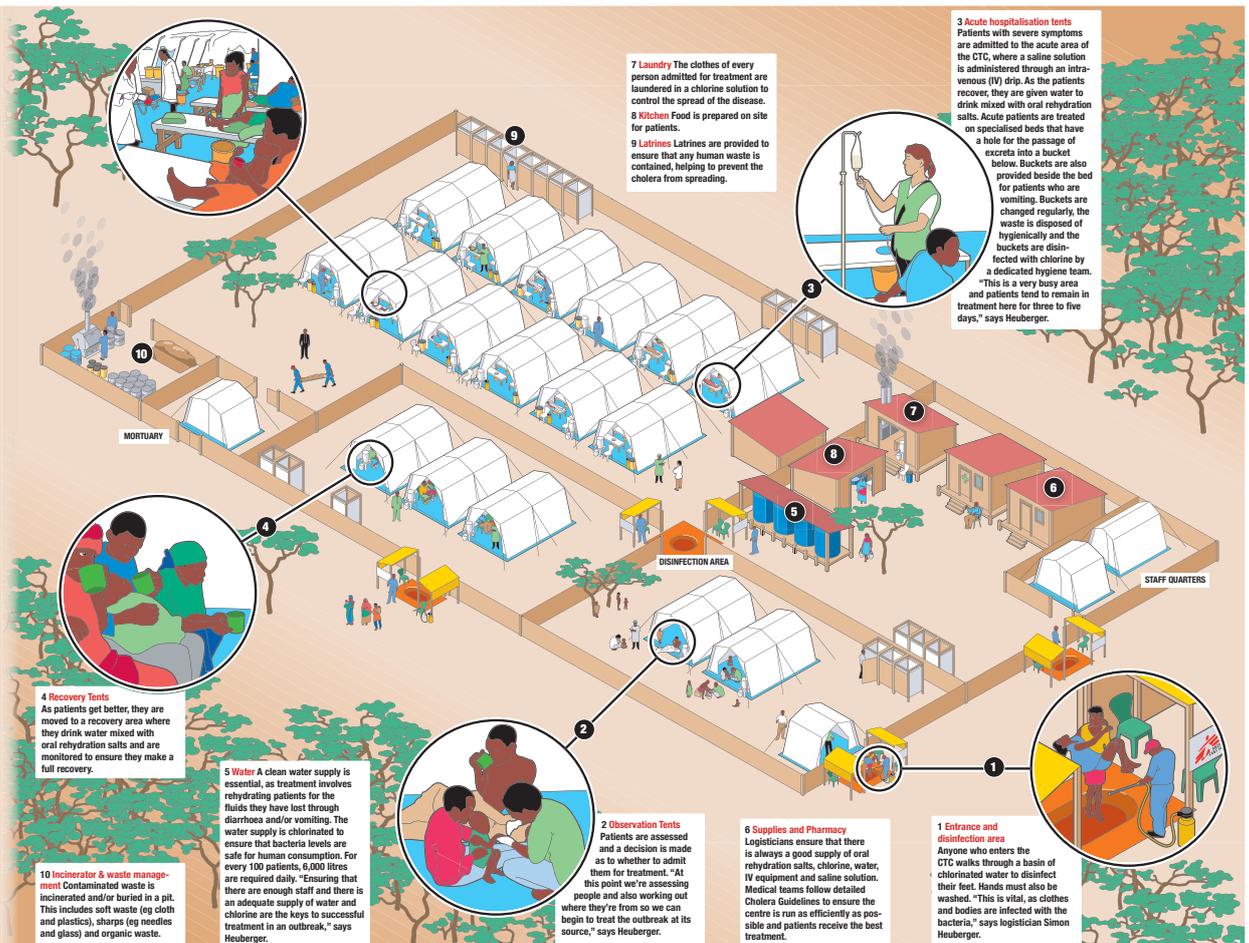
▶ Label 6-8 features of a CTC on the following map. Describe the purpose of each feature.

Key weapon in the fight against cholera

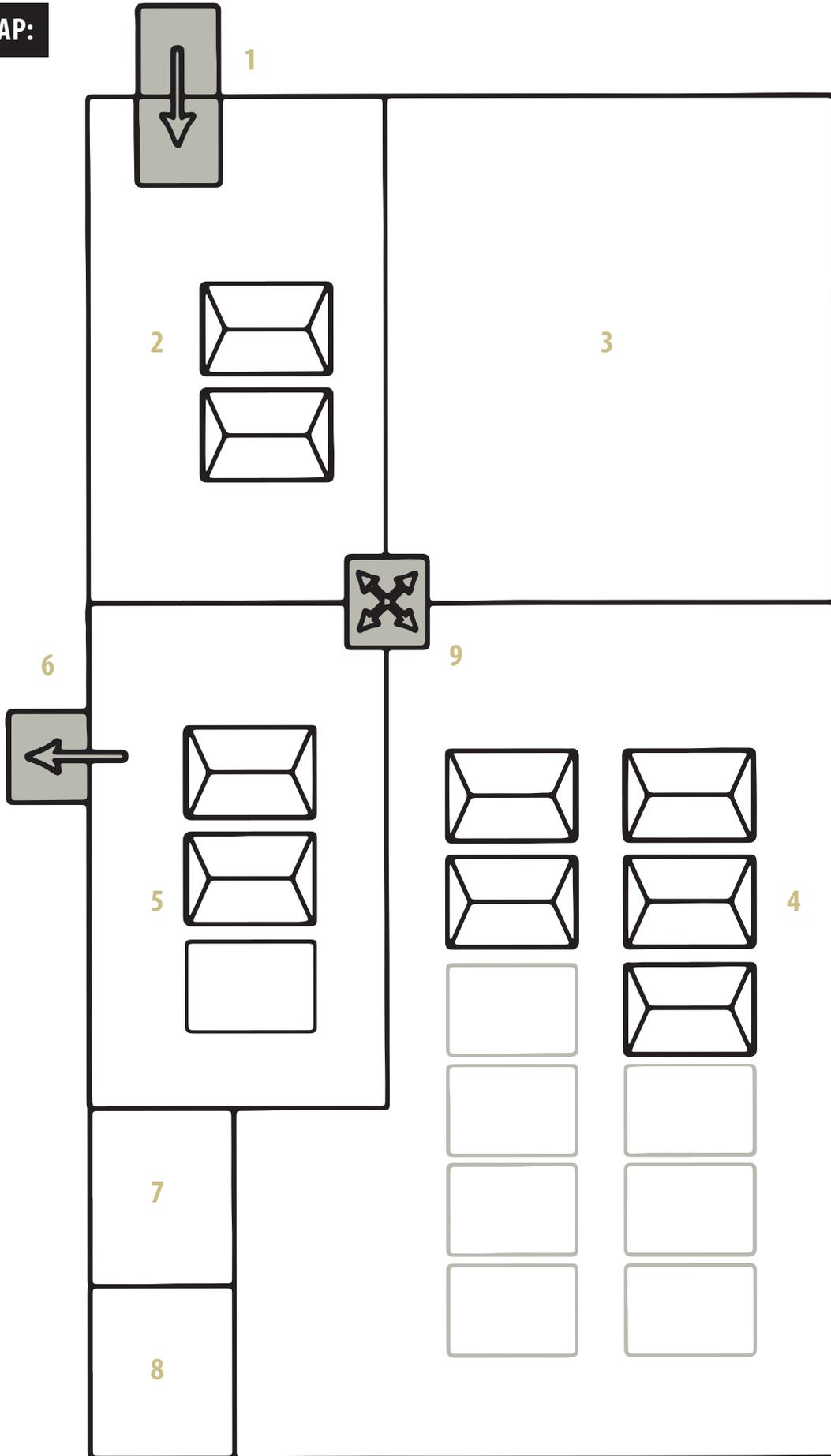
A Cholera Treatment Centre (CTC) is a specialised isolation ward designed to manage and treat cholera patients and prevent the spread of the disease. In cholera outbreaks around the world, MSF rapidly sets up these centres to combat and contain infection. Treating cholera is a race against time. The onset of the disease is abrupt, with profuse diarrhoea and vomiting resulting in severe dehydration that can kill infected people within hours. Although it is an easily curable disease, it is vital that cases are detected and treated

Treating cholera is a race against time

in a CTC as early as possible. In the CTC, patients are given an oral rehydration solution that works to replace the massive amount of fluids and salts lost due to the disease. During this period, patients are isolated to prevent the further spread of infection. In 2009, MSF treated 103,220 cholera cases around the world and in most outbreaks, was able to limit the fatality rate among patients to less than 1 percent. Since the cholera epidemic began in Haiti in late October 2010, MSF teams have treated more than 110,000 patients across the country.



YOUR CTC MAP:



ACTIVITY 5: PREVENTION OF CHOLERA

When it comes to disease, prevention is always better than cure.

Preventing cholera requires access to safe drinking water and adequate sanitation infrastructure such as sewage treatment facilities and vaccination.

MSF's WATSAN (water and sanitation) teams provide people with chlorine or water purification sachets, truck clean water in, and install, fix and clean sanitation facilities such as toilets in affected areas.

Raising awareness in local communities on how to stop the spread of bacteria is also essential. This may include washing hands, only using clean water sources to drink from and wash food, and not defecating in the open or near water sources.

MSF commonly works with local artists, entertainers and educators to launch campaigns to raise awareness about preventing the spread of cholera.



MSF teams worked with local artists from the slum to create colorful health promotion messages teaching the population how to protect themselves against cholera on Martissants' walls. Because of its mode of contamination (fecal-oral), cholera is a stigmatized disease that hits poor communities with bad access to clean water and sanitation. However some simple habit changes can help individuals avoid contamination.

© MSF / Lauranne Grégoire



Children from Martissant, Port-au-Prince, read health promotion messages on cholera prevention. Because of its mode of contamination (fecal-oral), cholera is a stigmatized disease that hits poor communities with bad access to clean water and sanitation. However some simple habit changes can help individuals avoid contamination. © MSF / Lauranne Grégoire



A community health worker with a megaphone raises awareness about cholera in Bujumbura's Buterere market. She explains the importance of handwashing before and after meals, and of washing and cooking fruit and vegetables to kill the bacteria. She also explains how to recognise initial symptoms of cholera, and what to do if they suspect they or a family member has caught the disease. © Evrard Ngendakumana / MSF



Over a period of six months 110 staff from MSF, including comedians, and 35 from the Haitian ministry of health regularly organized meetings in the slum to sensitize the community on how to avoid falling ill with cholera. © MSF / Lauranne Grégoire

➤ **Design your own cholera prevention awareness campaign.**

Imagine you want to raise awareness within the local community of an urban slum in DRC about the spread of cholera and how to prevent it.

- In groups, decide who you want to target and how you want to get the message across and how you will evaluate if your campaign has been successful.

- Then use the storyboard to plan how you want to get the message across. In each box, draw and annotate what happens in each 'scene' of your campaign. Use as many boxes as you need.

- **Finally, turn your draft storyboard into a real-life campaign!**

➤ **AIM OF YOUR CAMPAIGN:**

.....

➤ **TARGET AUDIENCE:**

- school children mothers
- elderly people middle-aged men

Other:

.....

Reason for choice:

.....

➤ **FORMAT OF CAMPAIGN:**

- Poster/billboard Video
- Performance School presentation

Other:

.....

➤ **MAIN MESSAGE/CATCH-PHRASE:**

.....

.....

➤ **STORYBOARD (DRAFT PLAN) OF YOUR CAMPAIGN:**

What happens in each 'scene' of your campaign?

ie. A step-by-step process of how you will communicate your message.

 **FOR MORE INFORMATION VISIT: MSF.ORG.AU**