

Communication handbook on high-threat pathogens



A pocket guide for field workers in WHO's
Eastern Mediterranean Region to ensure an
effective response to potential epidemics



World Health
Organization

REGIONAL OFFICE FOR THE Eastern Mediterranean

Communication handbook on high-threat pathogens



**World Health
Organization**

REGIONAL OFFICE FOR THE **Eastern Mediterranean**

WHO Library Cataloguing in Publication Data

Names: World Health Organization. Regional Office for the Eastern Mediterranean

Title: Communication handbook on high-threat pathogens: a pocket guide for field workers in WHO's Eastern Mediterranean Region to ensure an effective response to potential epidemics / World Health Organization. Regional Office for the Eastern Mediterranean

Description: Cairo: World Health Organization. Regional Office for the Eastern Mediterranean, 2022

Identifier: ISBN 978-92-9274-018-4 (pbk.) | ISBN 978-92-9274-019-1 (online)

Subjects: Epidemics | Disease Outbreaks | Communication | Health Communication | Health Personnel | Communicable Disease Control | World Health Organization | Eastern Mediterranean Region

Classification: NLM WA 590

© World Health Organization 2022

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. Communication handbook on high-risk pathogens: a pocket guide for field workers in WHO's Eastern Mediterranean Region to ensure an effective response to potential epidemics. Cairo: WHO Regional Office for the Eastern Mediterranean; 2022. Licence: CC BYNC-SA 3.0 IGO.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication 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 lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Contents

- Section 1. Introduction 1
- Section 2. Role of effective communications during an outbreak2
- Section 3. Introduction to communication materials7
- Section 4. Communication materials 17
 - 1. Anthrax..... 18
 - 2. Chikungunya 20
 - 3. Cholera22
 - 4. Dengue fever..... 24
 - 5. Hepatitis A and E26
 - 6. Legionnaires’ disease28
 - 7. Leishmaniasis 30
 - 8. Meningitis.....32
 - 9. Rabies 34
 - 10. Rift valley fever36
 - 11. Seasonal influenza38
 - 12. Typhoid..... 40
 - 13. Vector borne diseases 42
 - 14. Viral hemorrhagic fevers 44
 - 15. Yellow fever 46

Section 1

Introduction

This handbook is an easy-to-use resource for field staff working in countries in WHO's Eastern Mediterranean Region. It provides crucial information on 15 of the most high-threat pathogens in the Region and important guidance to field staff both before and during a disease outbreak.

Who should use it?

Health and frontline workers working at any level or country within the Region.

Benefit

This handbook will benefit you in many ways. By using it you will be:



Better informed

It will provide you with the most updated and accurate information on 15 of the most high-threat pathogens in the Region.



More resourceful

It will guide you on how to communicate effectively during a potential outbreak.
It will brief you on practical tasks that you can do, as well as tasks to avoid.



Well prepared

You will have “ready to print” and “ready to share” materials in case of outbreaks.

It is strongly recommended that countries translate this handbook into local languages.

Section 2

Role of effective communications during an outbreak

Effective communication has a crucial role to play in preventing outbreaks, as well as in reducing their harmful impact to:



Communities



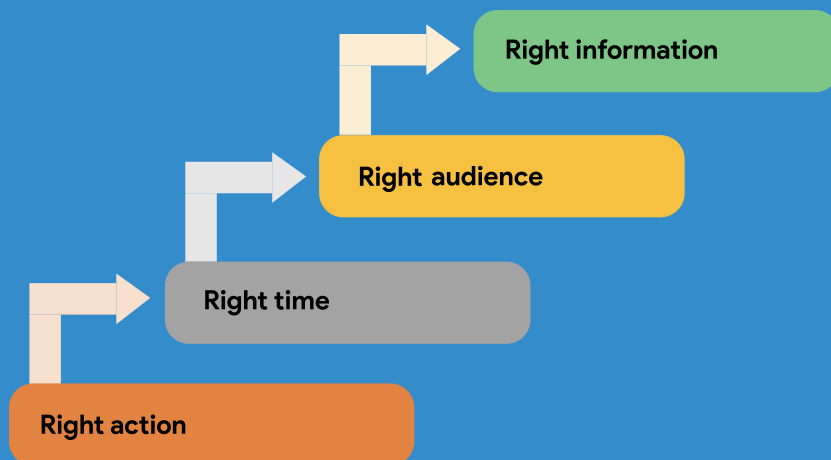
High-risk groups



Front-line workers

The 4 rights of effective communication

The 4 rights are crucial for effective communication during outbreaks.



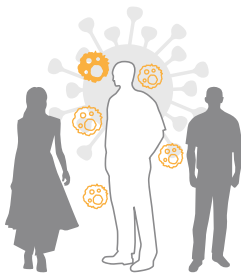


What is the right information?

Information that is clear, accurate and relevant for your target audience.

What can field workers do to deliver the right information?

- ☒ Deliver it in a language that the communities understand.
- ☒ WHO recommends that all posters are disseminated in the local language of the target audience. You must ensure that the translated content does not lose its intended meaning.
- ☒ It is always better to pre-test the information among communities which means that you should share the translated material with a diverse sample of the community to be sure that the translated message is exactly the same as the original message.
- ☒ Deliver it in a tone that is respectful.
- ☒ Follow the information as provided in this handbook without any modifications.
- ☒ Only give communities information that is most relevant to their specific needs (refer to Section 4).
- ☒ Ask people to repeat what you have told them to ensure that they have understood it correctly.
- ☒ Encourage people to ask questions. Answer them according to the information provided in this handbook.



Who is the right audience?

Generally, anyone who is at risk of a disease is the right audience. The challenge is that people at risk might have different beliefs and cultures, speak different languages, look at health differently, have different literacy levels, live in different environments and have different lifestyles.

What can field workers do to identify and reach the right audience?

- ☒ Identify target audiences with respect to each disease. Section 4 of this handbook will help you to do that.
- ☒ Give the most relevant information to each audience as mentioned in Section 4.
- ☒ Identify the activities that you can do according to your available options. Sections 3 and 4 both identify key activities according to the pathogen and your target audience.
- ☒ Identify networks, associations and platforms that can help you reach the right audience.
- ☒ Use the posters as visual aids for those who can not read.
- ☒ Read out the posters for audiences who may not be able to read or who may be visually impaired.
- ☒ Ask the caregivers of people with hearing disabilities to explain the posters in sign language or other ways needs.



What is the right time?

Timely information can avert major crisis. Right time means that the information is the most up to date and that it should reach your audience early and regularly so that they can take the necessary action in a timely way.

What can field workers do to ensure that they are providing the most updated information at the right time?

- ☒ Mark your calendars for common seasonal diseases like winters for seasonal influenza and summers for dengue.
- ☒ Do not wait for the number of cases to increase. It is always better to disseminate as much information as possible, even if just a few cases have been reported.
- ☒ Keep contact information of key members of communities, front-line health workers and government departments so you do not face delays locating or contacting them in case of an outbreak.
- ☒ During an outbreak information needs are diverse and frequent, share links, important numbers and be ready to disseminate communication products with communities.
- ☒ Until the situation stabilizes, keep communicating.
- ☒ Ask them to verify news and information from reliable and trusted sources, such as the WHO website.
- ☒ Subscribe to WHO's social media pages and online platforms and information resources.
- ☒ Liaise with WHO country offices and concerned government departments.
- ☒ Encourage communities to ask questions. Answer them according to the information provided in this handbook.



What is the right action?

All of the important actions that you would like communities, high-risk groups and health workers to take after you provide them with the right information at the right time. All the necessary actions with respect to audiences and pathogens are mentioned in Section 4.

What can field workers do to inspire the right action?

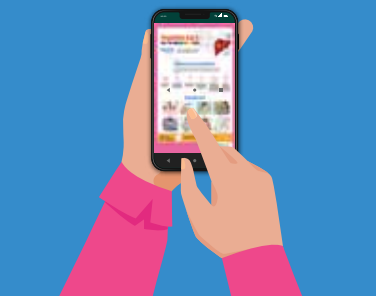
- ☒ Always introduce yourself and tell people that the advice you are providing is approved and recommended by WHO.
- ☒ Explain to people why they should take an action, for example: During winter, seasonal influenza can spread rapidly so get vaccinated to protect yourself.
- ☒ It is good to count on your fingers the key actions that you want them to perform. This will help them to remember the number of actions that they need to perform.
- ☒ Tell them how they should perform that action, for example: Go to the nearest hospital for a flu shot before the winter season.
- ☒ Ask individuals what factors may hinder their ability to perform an action, such as not being able to afford transportation costs to the nearest hospital.
- ☒ When possible, always demonstrate to the community what you are asking them to do, such as washing hands, applying a mosquito repellent, wearing a mask.
- ☒ Encourage individuals to demonstrate certain actions to other community members.

Section 3

Introduction to communication materials

This handbook contains communication materials on high-risk pathogens in the Region, ready to present, reproduce and disseminate.
















1. The posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
posters, and presented on screen to community members.
2. The posters can be accessed by community members and printed.
3. During a potential outbreak, the WHO country office can be contacted to provide you with copies of posters to disseminate among communities.



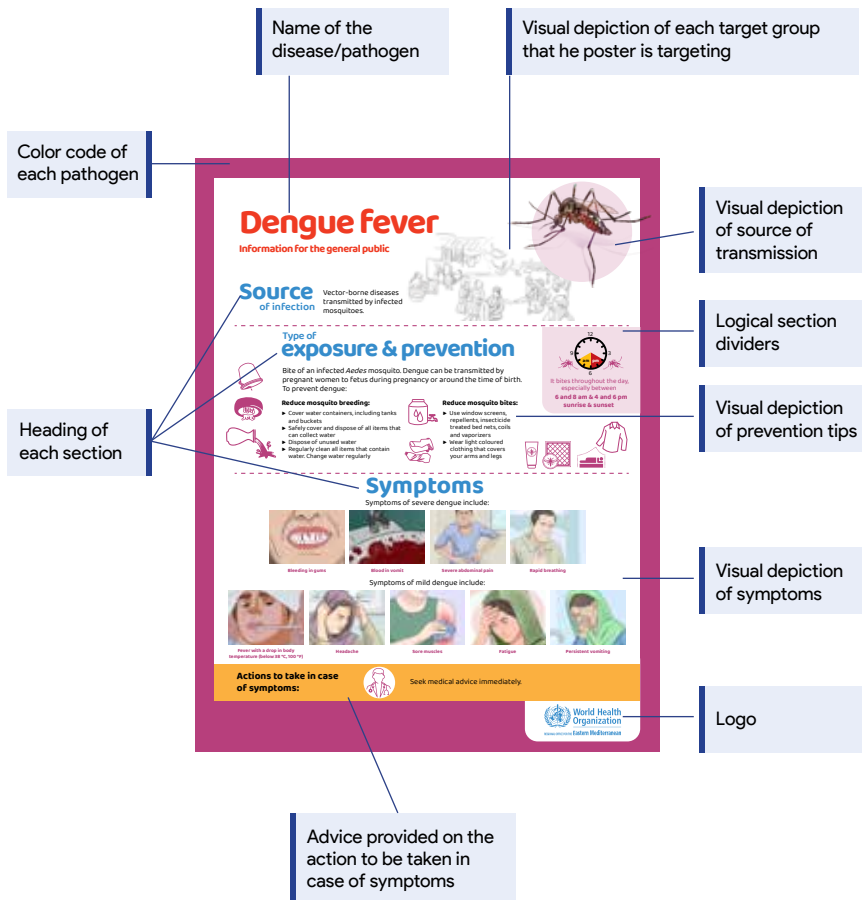
Posters

Table 1 below provides a list of the diseases covered by the posters. It also shows the colour coding for each of the posters and how many posters for each disease have been produced for different target audiences.

Table 1. List of the 15 disease-specific posters

	Disease	Color code	Number of posters
1	Anthrax		3
2	Chikungunya		3
3	Cholera		4
4	Dengue		3
5	Hepatitis A and E		4
6	Legionnaires' disease		2
7	Leishmaniasis		2
8	Meningitis		3
9	Rabies		2
10	Rift Valley fever		3
11	Seasonal influenza		3
12	Typhoid		2
13	Vector-borne diseases		2
14	Viral hemorrhagic fevers		3
15	Yellow fever		2

The figure below provides an explanation of some of the key visual and text components of each poster. Please familiarize yourself with these before using any poster as a visual aid for communities.



The figure below outlines some of the key factors that must be considered when communicating with the public during an outbreak.

Disseminating information can be really challenging during an outbreak because:

It is crucial to get relevant information to all locations of an outbreak without delay.

During outbreaks and crises, some individuals, groups or organizations may spread incorrect information and rumours that could lead to panic.

Communities can experience limitations in accessing information because of limited resources (no internet or smart phones) or limited efficacy (inability to read and understand health information).

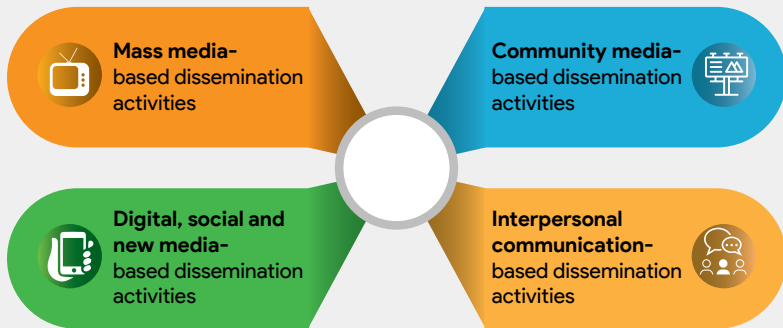
Communities may not trust the information you give them.

Changing situations may result in the need for newly verified information that has to be communicated regularly.

Accessing most trusted sources of information, including WHO websites and social media platforms, requires internet connectivity and a computer/mobile device.

Which different dissemination channels can be used by field workers?

For dissemination, your activities can be classified into four different types depending upon your resources.



How field workers can improve dissemination of communication products:

- 1) Identify all sources that the community trusts for information. This can be done by asking different members of your community about the information sources that they regularly use, especially for getting news and taking important decisions related to health.
- 2) Create partnerships at community level with people and trusted institutions including but not limited to:



- 3) Identify all important sources of information that you can share with communities. They can include:



Mass media

Mass media means traditional media like TV, radio and newspapers.

They are especially suited to rapid dissemination needs during a potential epidemic.

Mass media can disseminate information to a large population in a short time.

Using media channels can be expensive; however, you could partner with local governments, nongovernmental organizations, UN agencies, development organizations, or the mass media platforms themselves to share the costs.

What type of activities can you do on mass media?

You can partner with media channels for content dissemination for both the pricing-based and social responsibility-based model.

In the pricing model you pay the television or radio channel or newspaper to disseminate communication materials provided that the content to be disseminated is ready like an animation, public service message or designed advertisement.

In social responsibility models, some media channels or platforms are likely to give you free airtime/ placement depending upon how urgent and critical the information is.

In addition to large media organizations, it is also good to liaise with professionals working for those media platforms like journalists, editors, content producers, programme hosts for TV, radio and newspapers. This increases the chances of partnership, especially in case of outbreaks.

Community level media



Media with restricted reach to specific communities mostly with respect to geography, like public spaces, outdoor signage, community level events and festivals, theatre, folk performances, transit media (buses, taxis, trains) and public areas like airports, bus/railway stations, community centres.

Community media is especially useful when a disease is affecting only a limited part of a country/province. Thus, the priority is to control the disease in that area and to prevent its spread.

Community media can vary a lot from country to country depending upon how you define it. However, here the term “community level” is consciously used to identify platforms, channels and opportunities that specific members of the community can create by themselves to reach out to others within their community.

What type of activities can you do on community media?

Consult community experts on popular public places, such as most visited hospitals, educational institutions, places of community and religious gatherings, touristic venues, popular markets, government offices, traffic intersections and other places where communities gather regularly.

You can put printouts of the posters in those areas in partnership with local governments and communities.

You can also share the materials with communities to print themselves and disseminate them where they find most useful. You must liaise with key people within the community who can provide you with the access to public platforms in the interest of public safety.

Digital, social and new media



This includes all content that can be accessed through smart phones, tablets, laptops, desktops and other smart devices through the internet or through local telecommunication networks. These include popular websites, social media platforms, messengers, blogs, internet-based video channels, SMS, automated calls, ringtones and interactive voice response.

What type of activities can you do on digital, social and new media?

Talk to local internet and telecom companies in your area about what can be done to reach out to subscribers.

Talk to the local telecommunication authority to find ways in which critical information can reach the maximum number of people to save lives.

There are many countries in the Region that have a large number of internet subscribers and broadband users with a very active presence on various social media platforms. You may separately map those popular vloggers, bloggers and social media influencers with the most followers in your area to share digital versions of the posters with their followers.

As standard practice always share information from WHO websites or social media platforms as this will add both credibility and consistency to the message.

Train digital media influencers to fact check information from online WHO sources, before broadcasting to larger audiences.

Identify misleading online content for removal and necessary action by regulatory authorities.



Interpersonal communication is especially suited to areas where access to mass, community and digital media is very limited.

What type of activities can you do through interpersonal communication?

Ensure that you are following all necessary health protection standard operating procedures when you are going out in the field.

Involve community leaders or representatives when you are a stranger in the community.

It is always good to team up with local people who have the respect of fellow community members. These could include community leaders, health workers, local doctors, religious leaders, teachers, farmers, professionals etc.

Always consult trusted sources of information, such as the WHO website, to ensure that the information you share is credible and consistent.

Try orienting them once before they can spread the message further. Ask questions from communities after you have explained to them to be sure that they understood the message.

You can use either the printed or digital version of a poster as a visual aid while you explain precautions, symptoms or key actions to each audience. You can also demonstrate key behaviours such as washing hands, boiling water or wearing a mask.

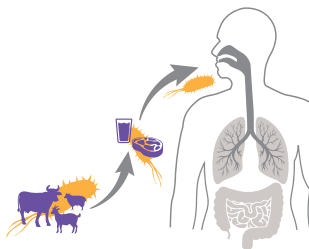
Section 4

Communication materials

This section provides information on each disease and the measures that communities can take to control them.

1. Anthrax

- Bacterium called *Bacillus anthracis* cause anthrax.
- It is not a new disease. It is completely treatable after correct and rapid diagnosis.
- It is caused by direct or indirect contact with infected animals, or occupational exposure to infected or contaminated animal products.
- It is treatable. Take antibiotics only with medical advice.
- Widespread immunization against anthrax is not a feasible option, hence prevention is key.



Communication materials on anthrax

No	Audience	Focus
1	General public	Measures to control anthrax
2	Health workers	Measures to control anthrax
3	Farmers, butchers, veterinarians and other industry workers	Measures to control anthrax



What you can do to control anthrax

- Share the posters with communities, health workers and those working in the meat and dairy industry, including farmers, butchers, milk collectors, animal skin collectors, veterinarians and meat/milk packaging industry.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share posters with local journalists working on the subject of health, as well as dairy, meat, livestock association workers and veterinarians.

For communities

Anthrax

Information for the general public

Sources of infection

Through direct and indirect contact with infected animals, or the consumption of their products, particularly meat and milk.

Types of exposure & prevention

Through direct and indirect contact with infected animals, their hides or skins, or the consumption of their products, particularly meat and milk. Prevent anthrax by:



Avoiding contact with sick animals, especially in anthrax-prone areas

Buying meat and milk from hygienic places

Avoiding contact with raw meat and the blood of sick animals

Boiling milk and cooking meat before consumption

Vaccinating livestock

Signs & symptoms



Skin ulcers

Respiratory issues (cough, chest pain)

Abdominal pain

Actions to take in case of symptoms:



If you suspect that you have been exposed to anthrax, go immediately to your nearest health facility for diagnosis and treatment.



For farmers, butchers, veterinarians and other industry workers

Anthrax

Information for farmers, butchers, veterinarians and other industry workers

Sources of infection

Through contact with infected animals or the consumption of their products, particularly meat and milk.

Types of exposure & prevention

Direct or indirect contact with infected animals, or occupational exposure to infected animal products. Farmers, butchers, veterinarians and workers who process hides, meat, wool and animal products must take following precautions:



Avoid contact with sick animals, especially in anthrax-prone areas

Wear safety equipment during cattle and meat handling

Disinfect your environment, meat, eating tools, utensils and floors

Regularly wash hands with soap after contact with infected meat

Vaccinate cattle and isolate in case of symptoms

Signs & symptoms



Ulcers on skin

Respiratory issues, (cough, chest pain, shortness of breath)

Abdominal pain

Actions to take in case of symptoms:



If you suspect that you may have anthrax seek medical attention immediately and isolate your cattle from other herds.



For health workers

Anthrax

Information for health workers

Sources of infection

Through contact with infected animals or the consumption of their products, particularly meat and milk.

Types of exposure & prevention

Direct or indirect contact with infected animals, or occupational exposure to infected animal products. Health care workers can prevent the spread of anthrax by:



Remaining vigilant about reported cases of anthrax in your area

Sterilizing surgical instruments

Incinerating surgical dressings

Preventing vaccination of animals and at-risk people

Disinfecting and disposing of contaminated materials

Signs & symptoms



Ulcers on skin

Respiratory issues, (cough, chest pain, shortness of breath)

Abdominal pain

Action to take in case you suspect a case of anthrax:

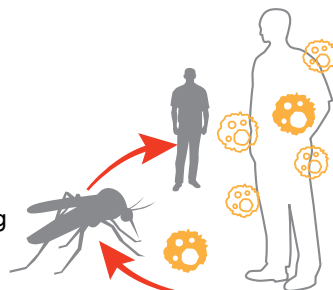


Detect cases early: send a sample to the laboratory for confirmation, and share information on a positive test with the relevant authorities



2. Chikungunya

- Chikungunya is transmitted by *Aedes* mosquitoes, which primarily bite during the day.
- Outbreaks occur typically in urban settings.
- Recovery may take time and patients may experience complications for a long time.
- Chikungunya is often misdiagnosed as dengue or other diseases.
- Severe cases are rare and mostly occur in individuals with pre-existing conditions.
- Avoiding vector exposure is key to reducing transmission in addition to controlling vector breeding.



Communication materials on chikungunya

No	Audience	Focus
1	General public	Measures to control chikungunya
2	Health workers	Measures to control chikungunya
3	Workers in the tyre industry	Measures to control chikungunya



What you can do to control chikungunya

- Share posters with communities, health workers and workers working in the tyre industry. This also includes all communities living near major tyre markets, warehouses, disposal sites and other potential areas in which mosquito breeding is likely to occur.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Provide information to local communities and authorities on ways to reduce mosquito breeding and mosquito bites.

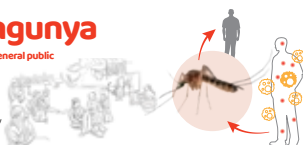
For the general public

Chikungunya

Information for the general public

Source of infection

Vector-borne, transmitted by mosquitoes.

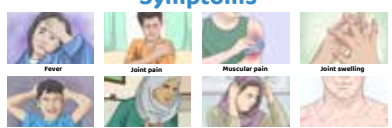


Type of exposure & prevention

Chikungunya is a viral disease transmitted to humans by infected mosquitoes. It is caused by the chikungunya virus.

- Look opportunities for mosquitoes to breed by removing garbage and covering vessels that allow water to pool such as water tyres and buckets.
- Use insecticides for mosquito breeding.
- Use window screens, repellents, insecticide treated bed nets, coils and vapourisers.
- Wear light coloured clothing that covers your arms and legs.
- Keep all water containers sealed and clean them regularly.

Symptoms



Actions to take in case of symptoms:

Seek medical advice immediately. There are similarities between the symptoms of Chikungunya, dengue and Zika and so it can sometimes be misdiagnosed.

World Health Organization
Sustainable Development Goals

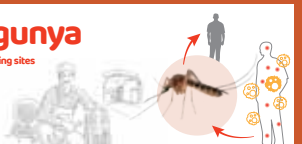
Information about breeding sites

Chikungunya

Information about breeding sites

Source of infection

Vector-borne, transmitted by mosquitoes.



Type of exposure & prevention

Chikungunya is a viral disease transmitted to humans by infected mosquitoes. It is caused by the chikungunya virus. Containers, garbage, tyres and areas in which water can accumulate act as breeding sites for mosquitoes.


Reduce mosquito breeding by:

- storing tyres safely in a dry area
- safely disposing of unused tyres, containers and other objects that can hold water
- spraying the tyres with insecticides when possible

Reduce mosquito bites by:

- using window screens, repellents, insecticide treated bed nets, coils and vapourisers
- wearing light coloured clothing that covers your arms and legs

Symptoms



Actions to take in case of symptoms:

Seek medical advice immediately. There are similarities between the symptoms of Chikungunya, dengue and Zika and so it can sometimes be misdiagnosed.

World Health Organization
Sustainable Development Goals


For health workers

Chikungunya

Information for health workers

Source of infection

Vector-borne, transmitted by mosquitoes.



Type of exposure & prevention

Chikungunya is a viral disease transmitted to humans by infected mosquitoes. It is caused by the chikungunya virus.

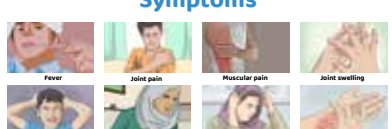
Reduce mosquito breeding by:

- implementing emergency vector control measures, such as spraying insecticides during outbreaks
- safely disposing of all items that can collect water
- covering all water tanks and storage and emptying unused water
- keeping grass short around hospitals and wards clean

Reduce mosquito bites by:

- using window screens, repellents, insecticide treated bed nets, coils and vapourisers
- wearing light coloured clothing that covers your arms and legs

Symptoms



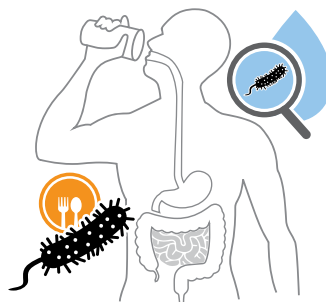
Actions to take in case of symptoms:

Take a detailed medical history of any patient you may suspect of having Chikungunya to perform a correct diagnosis. Fever and joint pain are key distinguishing symptoms of Chikungunya inform the public health authorities if you have a confirmed case.

World Health Organization
Sustainable Development Goals

3. Cholera

- Cholera is transmitted by faecally-contaminated water and food.
- Outbreaks can spread rapidly and infect many people.
- Rapid detection of suspected cases and laboratory confirmation are essential.
- Symptoms of cholera include acute watery diarrhoea with no fever.
- Severe forms of cholera can kill within hours: early rehydration is the cornerstone of treatment.
- Oral rehydration solution prevents loss of life from cholera. It can be prepared at home with clean water.
- Oral cholera vaccines are safe and should be used with other prevention and control strategies.



Communication materials on cholera

No	Audience	Focus
1	General public	Oral rehydration solution (ORS)
2	General public	Oral cholera vaccine
3	Health workers	Measures to control cholera
4	Food handlers	Measures to control cholera



What you can do to control cholera

- Share posters with communities, health workers and workers associated with the food industry and its allied services. Food growers, processing, packaging, distribution and retail especially fresh vegetables, fruits, grains and seafood.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Local pharmacies, clinics and hospitals can display these posters, especially those related to oral rehydration solution and oral cholera vaccine.

For the general public (oral rehydration solution)

Cholera

Information for the general public
on oral rehydration solution

Sources of infection

Foodborne and waterborne, transmitted by consumption of food and drink contaminated with the bacterium *Vibrio cholerae*

Types of exposure & prevention

Direct contact with bacterium in water or food. It can spread very quickly, especially in conditions created by emergencies. Cholera can be fatal. Prevent it by:

- Only drinking boiled and clean water
- Using clean water for washing and preparing food, and making ice
- Washing your hands often with soap and safe water
- Cooking food completely, keeping it covered, and eating it hot
- Washing yourself and your children, and diapers and clothes away from drinking water sources

Symptoms



Diarrhea that looks like "rice water" in large amounts

Vomiting

Leg cramps

Weakness

Dehydration

Actions to take in case of symptoms:

Cholera can make a healthy person weak quickly and can cause death within 24 hours. Oral rehydration solution (ORS) can successfully treat 85% of patients. You can continue to breastfeed infants and young children even if they have been diagnosed with cholera.



What is ORS?

ORS is sodium and glucose solution prepared by dissolving 1 sachet of readily available ORS in 1 litre of clean and safe water. You can also make it at home by mixing the following:

1. Half a teaspoon of salt
2. One teaspoon of sugar
3. One litre of clean and safe drinking-water or lightly salted rice water

For the general public (oral cholera vaccine)

Cholera

Information for the general public
on oral cholera vaccine

Sources of infection

Foodborne and waterborne, transmitted by consumption of contaminated food and drink contaminated with the bacterium *Vibrio cholerae*

Types of exposure & prevention

Direct contact with bacterium in water or food. It can spread very quickly, especially in conditions created by emergencies. Cholera can be fatal. Prevent it by:

- Only drinking boiled and clean water
- Using clean water for washing and preparing food, and making ice
- Washing your hands often with soap and safe water
- Cooking food completely, keeping it covered, and eating it hot
- Washing yourself and your children, and diapers and clothes away from drinking water sources

Symptoms



Diarrhea that looks like "rice water" in large amounts

Vomiting

Leg cramps

Weakness

Dehydration

Oral cholera vaccine

Oral cholera vaccine (OCV) provides 66–67% protection for at least 2 years against clinically significant cholera in countries or areas reporting outbreaks.



Important instructions for vaccine administration

For infants	For children (2-5 years)	For children aged 6+ and adults
Do not use on infants as OCVs are not licensed for infants.	2 oral doses. Each given 1-6 weeks apart.	2 oral doses to be given 1-6 weeks apart.
<ul style="list-style-type: none"> • Intake of food and drinks should be avoided for one hour before and after vaccination. • If you do not receive your second dose within 6 weeks you will have to restart vaccination. 		

For health workers

Cholera

Information for health workers

Sources of infection

Foodborne and waterborne, transmitted by consumption of contaminated food and drink contaminated with the bacterium *Vibrio cholerae*

Types of exposure & prevention

Direct contact with bacterium in water. It can spread very quickly, especially in conditions created by emergencies. Cholera can be fatal.

Staff in health facilities should assess levels of dehydration and diarrhoea.

- Signs of mild and severe dehydration include:
- Restlessness
 - Irritability
 - Loss of skin elasticity
 - Lethargy
 - Unconsciousness

Instructions for treating patients



It is recommended that mothers continue to breastfeed regularly, even if they have been diagnosed with cholera

Antibiotics are for severe cases only for children, give oral rehydration salts

Practice hand hygiene and only drink clear water

Use intravenous fluids to hydrate patients

Give also to children

Actions to take in case of symptoms:

If you are a health worker and are experiencing symptoms of cholera, seek medical advice immediately. Inform your supervisor, take rest and continue your course of treatment until fully recovered.

For food handlers

Cholera

Information for food handlers

Sources of infection

Foodborne and waterborne, transmitted by consumption of contaminated food and drink contaminated with the bacterium *Vibrio cholerae*

Types of exposure & prevention

Direct contact with bacterium in water or food. It can spread very quickly, especially in conditions created by emergencies. Cholera can be fatal.

If you are buying or selling food, prevent cholera by:

- Washing hands before touching food and after using the toilet
- Washing utensils, food containers and cutlery with soap and clean water
- Cooking food well and keeping it at a safe temperature
- Not allowing sick people to prepare or handle food
- Using latrines or burying your faeces
- Sanitizing shared workrooms of restaurants or warehouses.

Symptoms



Diarrhea that looks like "rice water" in large amounts

Vomiting

Leg cramps

Weakness

Dehydration

Actions to take in case of symptoms:

If you are experiencing symptoms of cholera, seek medical advice immediately. Avoid cooking and serving food to others, as doing so will lead to more infections.

4. Dengue

- Dengue is transmitted by female mosquitoes of the species *Aedes aegypti* and, to a lesser extent, by *Ae. albopictus*.
- These mosquitoes are also vectors of chikungunya, yellow fever and Zika viruses.
- WHO classifies dengue into two major categories: dengue (with/without warning signs) and severe dengue.
- Plasma leaking, fluid accumulation, respiratory distress, severe bleeding, or organ impairment can result from severe dengue.
- There is no vaccine for dengue.
- There is no specific treatment for dengue/severe dengue. Early detection, and access to proper medical care lowers fatality rates of severe dengue to below 1%.
- Reducing exposure to vectors and breeding sites is crucial to reducing transmission.



Communication materials on dengue

No	Audience	Focus
1	General public	Measures to control dengue
2	Health workers	Measures to control dengue
3	Travellers	Measures to control dengue



What you can do to control dengue

- Share posters with communities, health workers, and potential travellers to dengue-affected regions.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Provide information to local communities and authorities on ways to reduce mosquito breeding, as well as mosquito bites. Communities living near water reservoirs need to be extra careful.

For the general public

Dengue fever

Information for the general public

Source of infection

Vector-borne diseases transmitted by infected mosquitoes.

Type of exposure & prevention

Bite of an infected *Aedes* mosquito. Dengue can be transmitted by pregnant women to fetus during pregnancy or around the time of birth. To prevent dengue:

Reduce mosquito breeding:

- Cover water containers, including tanks and buckets.
- Safely cover and dispose of all items that can collect water.
- Dispose of unused water.
- Regularly clean all items that contain water. Change water regularly.

Reduce mosquito bites:

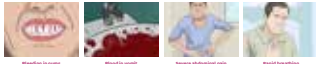
- Use window screens, repellents, insecticide treated bed nets, coils and vapourisers.
- Wear light coloured clothing that covers your arms and legs.



It bites throughout the day, especially between 6 and 8 am & 4 and 6 pm sunrise & sunset

Symptoms

Symptoms of severe dengue include:



Symptoms of mild dengue include:



Actions to take in case of symptoms:



Seek medical advice immediately.



For travellers

Dengue

Information for travellers

Source of infection

Vector-borne diseases transmitted by infected mosquitoes.

Type of exposure & prevention

Bite of an infected *Aedes* mosquito. Dengue can be transmitted by pregnant women to fetus during pregnancy or around the time of birth. To prevent dengue during travel:

Reduce mosquito breeding:

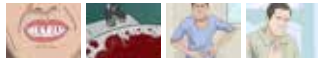
- Make sure the place where you are staying doesn't have mosquito breeding sites around it.
- Keep water containers in your room covered and empty any unused water.

Reduce mosquito bites:

- Control outdoor movement especially between 6 and 8 am & 4 and 6 pm.
- Use window screens, repellents, insecticide-treated bed nets, coils and vapourisers.
- Wear light coloured clothing that covers your arms and legs.

Symptoms

Symptoms of severe dengue include:



Symptoms of mild dengue include:



Actions to take in case of symptoms:



Seek medical advice immediately. Avoid travel.



For health workers

Dengue

Information for health workers

Source of infection

Vector-borne diseases transmitted by infected mosquitoes.

Type of exposure & prevention

Bite of an infected *Aedes* mosquito. Dengue can be transmitted by pregnant women to fetus during pregnancy or around the time of birth. To prevent dengue:

Reduce mosquito breeding:

- Emergency vector control measures such as spraying insecticides during outbreaks in coordination with health authorities.
- Safely dispose of all items that can collect water.
- Cover all water tanks and storage and empty unused water.

Reduce mosquito bites:

- Use window screens, repellents, insecticide treated bed nets, coils and vapourisers.
- Wear light coloured clothing that covers your arms and legs.
- Get vaccinated.



It bites throughout the day, especially between 6 and 8 am & 4 and 6 pm sunrise & sunset

Symptoms

Symptoms of severe dengue include:



Symptoms of mild dengue include:



Actions to take in case of symptoms:

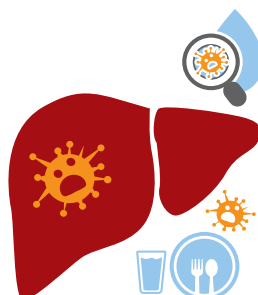


Seek medical advice immediately. Start treatment and inform your supervisor. Rest until you fully recover.



5. Hepatitis A and E

- Hepatitis is an inflammation of the liver. There are five strains of the virus, referred to as types A, B, C, D and E.
- Hepatitis A virus is transmitted through ingestion of contaminated food and water or through close personal contact with an infected person.
- Safe water supply, food safety, improved sanitation, hand washing and hepatitis A vaccine are effective ways to reduce transmission.
- Hepatitis E is transmitted via the faecal-oral route, principally via contaminated water.
- Pregnant women with hepatitis E, particularly those in the second or third trimester, are at increased risk of acute liver failure, fetal loss and mortality.
- Safe water supply, food safety, improved sanitation and hand washing are best ways to prevent hepatitis E as there is no vaccine. Pregnant women should take extra care.



Communication materials on hepatitis A and E

No	Audience	Focus
1	Schools	Measures to control hepatitis A
2	Pregnant women	Measures to control hepatitis E
3	People living in camps	Measures to control hepatitis A and E
4	Health workers	Measures to control hepatitis E



What you can do to control hepatitis A and E

- Share posters with education departments, school associations, trained birth attendants, and health workers, especially those working in camps.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Disseminate the posters to camps, large slums, people living in mud houses with poor sanitation and hospitals with large inflow of pregnant women. Share with birth attendants, especially in rural and open-air communities. Work with local authorities to control open defecation.

For schools

Hepatitis A & E

Information for schools

Sources of infection

Foodborne and waterborne, transmitted through ingesting contaminated food and drink.

Types of exposure & prevention

Hepatitis A and E are transmitted by ingesting contaminated food or drink or through direct contact with an infected person. Poor food hygiene, unsafe water, and lack of sanitation are the leading causes of hepatitis. Prevent it by:



Symptoms



Actions to take in case of symptoms:



Some medicines should not be taken during hepatitis A, hence avoid self-medication. Seek medical advice and only take medications prescribed by a doctor.



For pregnant women

Hepatitis E

Information for pregnant women

Sources of infection

Foodborne and waterborne, transmitted through ingesting contaminated food and drink.

Types of exposure & prevention

Hepatitis E is transmitted by ingesting contaminated food or drink or through direct contact with an infected person. Pregnant women are at increased risk, particularly during the second and third trimester. Prevent hepatitis E by:



Symptoms



Hepatitis E causes severe liver disease in pregnant women that can lead to:

- Acute liver failure;
- Fetal loss; and
- Mortality.

Actions to take in case of symptoms:



Seek medical advice immediately. Fatality rates for pregnant women in their third trimester are high.



For people living in camps

Hepatitis A & E

Information for people in camp settings

Sources of infection

Foodborne and waterborne, transmitted through ingesting contaminated food and drink.

Types of exposure & prevention

Hepatitis A and E are transmitted by ingesting contaminated food or drink or through direct contact with an infected person. In camp settings in which washrooms are limited, water sources are shared and open defecation occurs, the risk of hepatitis increases. Prevention measures include:



Symptoms



Actions to take in case of symptoms:



Seek medical advice immediately and only take medication prescribed by a doctor. Do not share personal items like towels, clothes or handkerchieves with others if you have hepatitis A or E.



For health workers

Hepatitis E

Information for health workers

Sources of infection

Foodborne and waterborne, transmitted through ingesting contaminated food and drink.

Types of exposure & prevention

Hepatitis E is transmitted by ingesting contaminated food or drink or through direct contact with an infected person. Health care workers should take extra care during an epidemic. Prevention measures include:



Symptoms



Actions to take in case of symptoms:

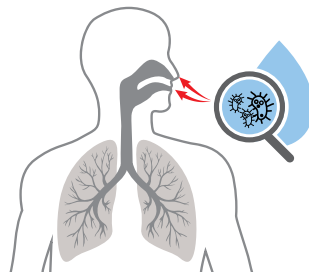


Seek medical advice immediately, inform your supervisor and rest at home until you are fully recovered.



6. Legionnaires' disease

- Legionnaires' disease is a fatal form of pneumonia and is caused by exposure to *Legionella* species found in water and potting mixes.
- The disease is mainly acquired through inhalation of contaminated water droplets.
- The bacterium is found worldwide in many different aquatic environments, such as cooling towers, water systems in hotels, homes, ships and factories, respiratory therapy equipment, fountains, misting devices, and spa pools.
- Delay in diagnosis and treatment, age and existing diseases are high risks for potential Legionnaires' disease. Immediately seek medical advice in case of symptoms.
- Travellers to aquatic environments both natural and artificial should follow precautions.



Communication materials on Legionnaires' disease

No	Audience	Focus
1	Travellers	Measures to control Legionnaires' disease
2	Workers in the hotel and tourism industry	Measures to control Legionnaires' disease



What you can do to control Legionnaires' disease

- Share the posters with tourist resorts and hotels with swimming pools, spas and shared cooling facilities.
- The posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Identify key tourist destinations in your area and disseminate posters among travel associations, train and bus stations, airports and tour operators.

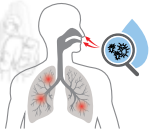
For travellers

Legionnaire's disease

Information for travellers


Sources of infection

Legionnaires' disease is caused by exposure to *Legionella* species found in water and plumbing systems. It varies in severity from mild to fatal pneumonia.




Type of exposure & prevention


The bacteria is found worldwide in many different aquatic environments, such as cooling towers, water systems in hotels, homes, ships and factories, respiratory therapy equipment, fountains, misting devices, and spa pools.



Be cautious during travel as outbreaks have been linked to hot tubs and whirlpools, cooling towers in air conditioning systems, water tanks, heaters, fountains, swimming pools, hot tubbing pools and drinking water.



Stay at hotels that regularly clean and disinfect their water and cooling systems.




Individuals with a history of smoking, heavy drinking, pulmonary-related illness, immunosuppression, and chronic respiratory or renal disease, need to take extra care.


Symptoms

Severity of disease ranges from a mild cough to a rapidly fatal pneumonia.


Mild symptoms:




Mild cough




Headache




Loss of appetite



Fever



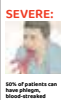
Malaise




Lethargy

50% of patients can have atypical, blood-streaked sputum or haemoptysis.


SEVERE:



Actions to take in case of symptoms:



Seek immediate medical advice in case of symptoms. Early diagnosis and treatment are important. Being 50 years or older or having pre-existing conditions are risk factors that can increase your chances of getting sick.



World Health Organization
SAFELY AVOID A FATAL ILLNESS

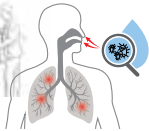
For workers in the hotel and tourism industry

Legionnaire's disease

Information for hotels and tourist accommodations


Sources of infection

Legionnaires' disease is caused by exposure to the *Legionella* species found in water and plumbing systems. It varies in severity from mild to fatal pneumonia.




Types of exposure & prevention


The bacteria is found worldwide in many different aquatic environments, such as cooling towers, water systems in hotels, homes, ships and factories, respiratory therapy equipment, fountains, misting devices, and spa pools.



Be cautious during travel as outbreaks have been linked to hot tubs and whirlpools, cooling towers in air conditioning systems, water tanks, heaters, fountains, swimming pools, hot tubbing pools and drinking water.




Stay at hotels that regularly clean and disinfect their water and cooling systems.




Individuals with a history of smoking, heavy drinking, pulmonary-related illness, immunosuppression, and chronic respiratory or renal disease, need to take extra care.


Prevention in hotels, on ships and in large buildings by:




Maintaining cooling devices, regularly cleaning and disinfecting of cooling towers along with frequent addition of biocides




Installing of drift eliminators




Adding biocide such as chlorine in a spa pool, draining and cleaning the whole system weekly



Keeping hot and cold water systems clean



Keeping hot water above 50 °C and cold water below 20 °C




Reducing stagnation by flushing unused taps every week


Symptoms

Severity of disease ranges from a mild cough to a rapidly fatal pneumonia.


Mild symptoms:




Mild cough




Headache




Loss of appetite



Fever



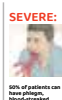
Malaise




Lethargy

50% of patients can have atypical, blood-streaked sputum or haemoptysis.


SEVERE:



Actions to take in case of symptoms:



In case of symptoms, especially in the case of exposure to aquatic environments, immediately seek medical advice.



World Health Organization
SAFELY AVOID A FATAL ILLNESS

7. Leishmaniasis

- Leishmaniasis are a group of diseases caused by parasites transmitted to humans by the bite of an infected female phlebotomine sandfly, 2–3 mm long, insect vector.
- There are three forms of the disease: cutaneous leishmaniasis, visceral leishmaniasis, also known as kala-azar, and mucocutaneous leishmaniasis.
- Cutaneous leishmaniasis is the most common, visceral leishmaniasis is the most severe and mucocutaneous leishmaniasis is the most disabling form of the disease.
- Early diagnosis and prompt treatment reduces the prevalence of the disease and prevents disabilities and death.
- Vector control helps to reduce transmission of disease by decreasing sandflies.
- Leishmania-HIV coinfecting people have a high chance of developing the full-blown clinical disease, and high relapse and mortality rates.



Communication materials on leishmaniasis

No	Audience	Focus
1	General public	Measures to control leishmaniasis
2	Internally displaced persons/ refugees	Measures to control leishmaniasis




What you can do to control leishmaniasis

- Share the posters in all communities where sandflies are present, especially where communities have a habit of sleeping outdoors at night, exposing them to contact with sandflies.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share posters with local authorities in charge of vector control to reduce the breeding of sandflies in places with dense populations, and governmental authorities with a mandate to regulate refugees and internally displaced persons.

For the general public

Leishmaniasis

Information for the general public



Source of infection

Vector-borne disease transmitted through the bites of infected female phlebotomine sandflies, which feed on blood to produce eggs.

Type of exposure & prevention

Leishmaniasis is caused by bite of an infected female sandfly (phlebotomine), a tiny 2-3 mm long insect vector. Poverty poor housing, population mobility, malnutrition and weak immune system increases the risk of developing and transmitting disease. Prevent it by:

- Remaining vigilant of sandflies, especially when outdoors
- Conduct vector control by using pesticides
- Cover full body with clothing to avoid exposing skin to sandfly bites
- Use insecticide-treated nets

Symptoms

Leishmaniasis has three forms: visceral (kala-azar, most serious form); cutaneous (most common); and mucocutaneous. Depending upon its type it can be fatal. Symptoms include:

Visceral leishmaniasis

- Irregular Fever
- Anaemia
- Weight loss
- Spleen and liver enlargement
- Rash usually on face, upper arms, trunk and other parts of the body

Cutaneous leishmaniasis


- Ulcers on exposed parts of the body (face, arms and legs)

Mucocutaneous leishmaniasis

- Disfigured skin lesions after recovery
- Lesions in the mucous membranes (nose, throat or mouth)

Actions to take in case of symptoms:


Seek medical advice immediately. Early diagnosis and access to safe medicine is important.



For internally displaced persons and refugees

Leishmaniasis

Information for internally displaced persons and refugees



Source of infection

Vector-borne disease transmitted through the bites of infected female phlebotomine sandflies, which feed on blood to produce eggs.

Type of exposure & prevention

It is caused by bite of an infected female sandfly (phlebotomine), a tiny 2-3 mm long insect vector. Internally displaced persons and refugees are at high risk of leishmaniasis because of increased chances of contact with sandflies. Control it by:

- Remaining vigilant of sandflies, especially when outdoors
- Keeping your home clean from waste and sewage
- Covering windows to avoid sandflies from entering
- Avoiding sleeping outside or on ground
- Destroying sandfly breeding sites through use of insecticides
- Covering full body with clothing and using insecticide-treated nets to avoid sandfly bites

Symptoms

Leishmaniasis has three forms: visceral (kala-azar, most serious form); cutaneous (most common); and mucocutaneous. Depending upon its type it can be fatal. Symptoms include:

Visceral leishmaniasis

- Irregular Fever
- Anaemia
- Weight loss
- Spleen and liver enlargement
- Rash usually on face, upper arms, trunk and other parts of the body

Cutaneous leishmaniasis


- Ulcers on exposed parts of the body (face, arms and legs)

Mucocutaneous leishmaniasis

- Disfigured skin lesions after recovery
- Lesions in the mucous membranes (nose, throat or mouth)

Actions to take in case of symptoms:

Treatment is complex and should be administered by highly experienced health personnel. See a doctor in case of symptoms.



8. Meningococcal meningitis

- Meningococcal meningitis is an acute bacterial form of meningitis due to *Neisseria meningitidis*, a serious infection of the meninges (brain membranes).
- It is transmitted through direct contact and respiratory droplets.
- Meningococcal meningitis can have a fatality rate of up to 50% when untreated.
- Specific vaccines are used for prevention and outbreak response.
- Surveillance is critical to detect outbreaks and inform epidemic response.
- Early treatment can save lives and reduce complications.
- Antibiotics reduce transmission risk for close contacts when given promptly.



Communication materials on meningitis

No	Audience	Focus
1	General public	Mass gatherings
2	School children	Measures to control meningitis
3	Internally displaced persons	Measures to control meningitis



What you can do to control meningitis

- Share the posters with communities, school children, internally displaced persons and refugees, especially on special occasions when mass gatherings like Eid, hajj, marriage ceremonies, etc. take place.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share with travel agents, airports and local transporters to orient all travellers attending a mass gathering.

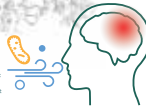
For the general public

Meningococcal meningitis

Information for the general public

Source of infection

Meningococcal meningitis is a bacterial form of meningitis. It is a serious infection of the thin lining that surrounds the brain and spinal cord. It can cause severe brain damage and is fatal in 50% of cases if untreated. It can also cause wide-scale epidemics.



Types of exposure & prevention

Meningitis spreads from one person to another by droplets from the nose and mouth when an infected person coughs, sneezes or talks. This happens especially when in close and prolonged contact with infected persons, as well as during mass gatherings.



Prevent it by:



Getting vaccinated, especially before attending mass gatherings (like Hajj) and events



Taking antibiotics when prescribed, when taken properly, antibiotics can reduce transmission among close contacts. Ciprofloxacin should be given as an alternative.



Wearing masks during mass gatherings to avoid respiratory transmission

Symptoms

The most common symptoms of meningitis are:



Stiff neck

High fever

Sensitivity to light

Confusion

Headaches

Vomiting

Actions to take in case of symptoms:



Seek medical advice and start any prescribed treatment immediately. Early antibiotic treatment is critical in saving lives and reducing complications.



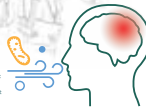
For school children

Meningococcal meningitis

Information for school children

Source of infection

Meningococcal meningitis is a bacterial form of meningitis. It is a serious infection of the thin lining that surrounds the brain and spinal cord. It can cause severe brain damage and is fatal in 50% of cases if untreated. It can also cause wide-scale epidemics.



Types of exposure & prevention

Meningitis spreads from one person to another by droplets from the nose and mouth when an infected person coughs, sneezes or talks. It can affect anyone of any age, but mainly affects babies, preschool children and young people.



Prevent it by:



Getting vaccinated, especially if meningitis cases are reported in your neighbourhood or school



Wearing masks to avoid respiratory transmission



Children with symptoms must be isolated. Monitor who may have been in contact with symptomatic children.

Symptoms

If you are experiencing any of the following symptoms, stop going to school and seek medical advice immediately.



Stiff neck

High fever

Sensitivity to light

Confusion

Headaches

Vomiting

Actions to take in case of symptoms:



Seek medical advice without delay. Isolate children with symptoms. Early treatment is important.



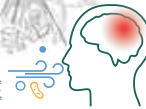
For internally displaced persons

Meningococcal meningitis

Information for internally displaced persons

Source of infection

Meningococcal meningitis is a bacterial form of meningitis. It is a serious infection of the thin lining that surrounds the brain and spinal cord. It can cause severe brain damage and is fatal in 50% of cases if untreated. It can also cause wide-scale epidemics.



Types of exposure & prevention

Meningitis spreads from one person to another by droplets from the nose and mouth when an infected person coughs, sneezes or talks. In camps and temporary communities for internally displaced persons, meningitis (meningococcal) can spread quickly through respiratory droplets.



Prevent it by:



Getting vaccinated



Informing a doctor if you suspect an individual is exhibiting symptoms



Avoiding close contact (coughing, sneezing or coughing) with anyone displaying symptoms

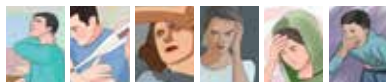


Wearing a mask to avoid respiratory transmission, especially if cases have been reported



Avoiding smoking

Symptoms



Stiff neck

High fever

Sensitivity to light

Confusion

Headaches

Vomiting

Actions to take in case of symptoms:

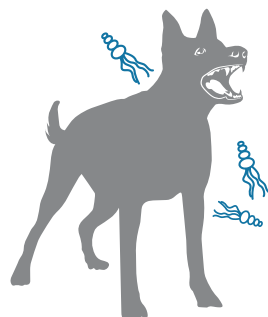


Seek immediate medical advice. In camps, avoid interactions with people displaying symptoms.



9. Rabies

- Rabies is a viral zoonotic disease that causes fatal inflammation of the brain and spinal cord.
- Approximately 99% of human cases are acquired from the bite of an infected dog.
- Transmission can be reduced through vaccination of dogs and prevention of dog bites.
- The burden of disease is high among rural poor populations and children under 15 years.
- Rabies is entirely avoidable through vaccines, medicines and technologies.
- Treatment must start immediately after exposure to the rabies virus as it is fatal after clinical signs appear.
- In case of dog bite, immediate wound washing with soap and water is crucial to saving lives.



Communication materials on rabies

No	Audience	Focus
1	General public	Measures to control rabies
2	Children	Measures to control rabies



What you can do to control rabies

- Share the posters with communities and children where stray dogs are abundant, especially in regions where dog vaccination is low.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share with teachers in schools so that they can talk to parents and children about the danger of rabies and what to do if someone is bitten by an unvaccinated dog. The posters can also be shared with governmental authorities with a mandate to control and vaccinate stray dogs.

For the general public

Rabies

Information for the general public

Source of infection Rabies is transmitted through the bite or saliva of an infected animal (zoonosis).

Transmission and prevention Bites, scratches or when saliva of an infected animal comes into direct contact with mucous membranes (i.e. eyes, nose, mouth) or wounds.

Prevent it by:

- getting vaccinated before exposure
- reducing exposure to wild animals and dogs
- vaccinating household pets (such as dogs, cats and ferrets)

Other species, that can cause rabies include:

Bats Raccoons Skunks Foxes Coyotes

Symptoms

No symptoms From 1 to 3 months (incubation period) varies after infection

After 1 to 3 months a fever with pain and unusual tingling, prickling or burning sensation (paresthesia) at the wound site

Slight or partial paralysis, hallucinations

Hyperaesthesia, difficulty swallowing

Hydrophobia

Actions to take in case of symptoms:

If you are bitten by a suspected rabid animal, seek immediate medical care and get post exposure prophylaxis, which includes vaccine. Never wait for symptoms to appear as there is no treatment once symptoms are present.

World Health Organization
www.who.int/en/emergencies/rabies

For children

Rabies

Information for children

Source of infection Rabies is transmitted through the bite or saliva of an infected animal (zoonosis).

Transmission and prevention Bites, scratches or when saliva of an infected animal comes into direct contact with mucous membranes (i.e. eyes, nose, mouth) or wounds.

Prevent it by:

- Vaccinate children in areas with rabies before exposure
- Reduce exposure to wild animals, especially dogs
- Vaccinate household pets (such as dogs, cats and ferrets)

Other species, that can cause rabies include:

Bats Raccoons Skunks Foxes Coyotes

Symptoms

No symptoms From 1 to 3 months (incubation period) varies after infection

After 1 to 3 months a fever with pain and unusual tingling, prickling or burning sensation (paresthesia) at the wound site

Slight or partial paralysis, hallucinations

Hyperaesthesia, difficulty swallowing

Hydrophobia

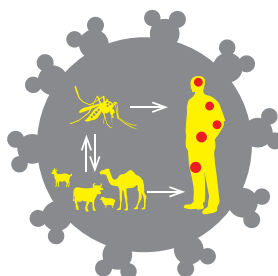
Actions to take in case of symptoms:

If you are bitten by a suspected rabid animal, seek immediate medical care and get post exposure prophylaxis, which includes vaccine. Never wait for symptoms to appear as there is no treatment once symptoms are present.

World Health Organization
www.who.int/en/emergencies/rabies

10. Rift Valley fever

- Rift Valley fever is a viral zoonosis that primarily affects animals but also has the capacity to infect humans.
- Human infections can result from the bite of infected mosquitoes, or from contact with the blood/organs of infected animals.
- Rift Valley fever can cause significant livestock losses. Livestock vaccination is key to prevention.
- Vector control is also needed to reduce disease transmission.
- Rift Valley fever is difficult to distinguish from other viral haemorrhagic fevers and many other diseases like malaria, shigellosis, typhoid fever, and yellow fever.
- While most human cases are relatively mild, a small percentage of patients develop a much more severe form of the disease.



Communication materials on Rift Valley fever

No	Audience	Focus
1	General public	Measures to control Rift Valley fever
2	Farmers/animal handlers	Measures to control Rift Valley fever
3	Health workers	Measures to control Rift Valley fever



What you can do to control Rift Valley fever

- Share the posters with communities, farmers/animal handlers and health workers in your region, especially in areas where mosquito breeding is high, where people sleep outdoors, or where the livestock and cattle population is high.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Talk to influential farmers to teach other farmers about safe practices while interacting with cattle and livestock. Also share posters with butchers, meat and dairy producers, packaging and selling agents and governmental authorities with a mandate to control vector breeding and enforce safety laws for the meat industry.

For the general public

Rift Valley Fever

Information for the general public

Source of infection

Rift Valley fever is transmitted by animals (zoönoses) or by an infected vector. No person-to-person transmission of Rift Valley Fever virus has been documented to date.

Transmission and prevention

Blood, meat and organs of infected cattle like buffalo, sheep, goats and camels, and bites from infected mosquitoes. Prevention measures include:

- Vaccinating cattle
- Reporting sick animals, miscarriages, and unexpected deaths to your local veterinarian
- Avoiding contact with raw meat, milk, blood, bodily fluids or tissues of animals
- Cooking raw meat and milk thoroughly
- Washing hands with soap immediately after direct contact with animals
- Protecting yourself from mosquito and insect bites

Symptoms

No symptoms

Mild illness with fever, weakness, back pain and dizziness

5–10% of people develop severe symptoms, including eye disease, excessive bleeding, and swelling of the brain

Actions to take in case of symptoms:

For mild symptoms no specific treatment is required. For severe cases, seek medical advice as general supportive therapy is required.

World Health Organization
Lectern Büdermann

For health workers

Rift Valley Fever

Information for health workers

Source of infection

Rift Valley fever is transmitted by animals (zoönoses) or by an infected vector. No person-to-person transmission of Rift Valley Fever virus has been documented to date.

Transmission and prevention

Blood, meat and organs of infected cattle like buffalo, sheep, goats and camels, and bites from infected mosquitoes. Health workers should know the following about Rift Valley Fever:

- Most patients have mild-to-like symptoms or no symptoms at all
- Take a complete medical history as no specific treatment is required for mild symptoms
- People with severe symptoms require treatment

Symptoms

No symptoms

Mild illness with fever, weakness, back pain and dizziness

5–10% of people develop severe symptoms, including eye disease, excessive bleeding, and swelling of the brain

Actions to take in case of symptoms:

Start treatment immediately inform your supervisors. Take rest until fully recovered.

World Health Organization
Lectern Büdermann

For farmers and animal handlers

Rift Valley Fever

Information for Farmers and animal handlers

Source of infection

Rift Valley fever is transmitted by animals (zoönoses) or by an infected vector. No person-to-person transmission of Rift Valley Fever virus has been documented to date.

Transmission and prevention

Blood, meat and organs of infected cattle like buffalo, sheep, goats and camels, and bites from infected mosquitoes. Prevention measures include:

- Vaccinating cattle
- Avoiding direct contact with blood, bodily fluids or tissues of animals
- Cooking raw meat and milk thoroughly
- Washing hands with soap immediately after direct contact with animals
- Protecting yourself from mosquito and insect bites

Symptoms

No symptoms

Mild illness with fever, weakness, back pain and dizziness

5–10% of people develop severe symptoms, including eye disease, excessive bleeding, and swelling of the brain

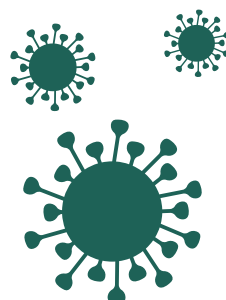
Actions to take in case of symptoms:

For mild symptoms no specific treatment is required. For severe cases, seek medical advice as general supportive therapy is required.

World Health Organization
Lectern Büdermann

11. Seasonal influenza

- Seasonal influenza is a respiratory disease transmitted through droplets.
- Influenza A and B viruses can cause epidemics.
- It can be severe and fatal, especially for older people and people with low immunity.
- Annual vaccination is the best way to prevent infection.
- Early treatment with antiviral drugs may reduce complications and deaths.
- Wearing of masks, social distancing, washing hands with soap and annual vaccinations can reduce transmission.
- Border controls do not reduce international spread.



Communication materials on seasonal influenza

No	Audience	Focus
1	School children	Measures to control influenza
2	Health workers	Measures to control influenza
3	Older adults and the general public	Measures to control influenza



What you can do to control seasonal influenza

- Share the posters with major schools in your area, hospitals, clinics and all associations working for the welfare of older persons.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Before winters, all pharmacies, clinics, hospitals, schools and universities should promote the importance of influenza vaccination, as well as the necessary precautions to guard against influenza.

For school children

Seasonal influenza

Information for school children

Source of infection Direct contact with a person with influenza. It is an airborne disease and transmission occurs through droplets which spread through coughing, sneezing or talking to an infected person.

Risk & prevention Children have a high risk of catching seasonal influenza during the winter season. They can protect themselves by:

- Washing hands regularly
- Avoiding touching face with unclean hands
- Wearing a mask
- Sneezing and coughing in bent elbow
- Disposing of used tissues
- Keeping a safe distance
- Avoiding crowded and non-ventilated places

Symptoms

High fever, Runny nose, Headaches, Cough, Muscle and joint pain

Actions to take in case of symptoms: If you think that you have influenza, inform your teacher or parent and put on a mask. Visit your nearest health facility and follow the medical advice of your doctor.

World Health Organization
BANGALORE • EASTERN MEDIANET

For older adults and the general public

Seasonal influenza

Information for older adults and the general public

Source of infection Direct contact with a person with influenza. It is an airborne disease that involves droplets which spread through coughing, sneezing or talking to an infected person.

Risk & prevention Older adults, pregnant women, individuals with underlying health conditions and children are at high risk of developing life-threatening conditions from seasonal influenza. They can protect themselves and others by:

- Taking an annual influenza shot
- Wearing a mask
- Keeping a safe distance
- Sneezing or coughing into a folded arm
- Regularly washing hands with soap
- Avoiding crowded and non-ventilated places

Symptoms

High fever, Runny nose, Headaches, Cough, Muscle and joint pain

Action to take in case of symptoms: If you think that you have influenza, visit your nearest health facility and follow the medical advice of your doctor.

World Health Organization
BANGALORE • EASTERN MEDIANET

For health workers

Seasonal influenza

Information for health workers

Source of infection Airborne diseases involving droplets, spreads through coughing, sneezing or talking to an infected person.

Risk & prevention Health workers are at greater risk of being exposed to influenza, especially doctors and nurses. You can protect yourself by:

- Getting vaccinated every year
- Keeping a safe distance
- Wearing personal protective equipment
- Keeping clinics and hospitals well ventilated
- Washing hands regularly
- Adopting good infection prevention and control measures

At hospitals ensure: Soap and water are available at all times. Hospitals are regularly cleaned with disinfectants.

Symptoms

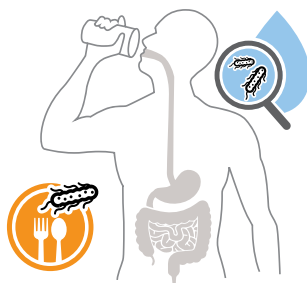
High fever, Runny nose, Headaches, Cough, Muscle and joint pain

Actions to take in case of symptoms: In case of symptoms, immediately start treatment and inform your supervisor. Stay at home and rest until you have made a full recovery.

World Health Organization
BANGALORE • EASTERN MEDIANET

12. Typhoid

- Typhoid fever is a life-threatening infection caused by the bacterium *Salmonella Typhi*.
- It spreads through contaminated food or water. Once the bacterium are eaten or drunk, they multiply and spread into the bloodstream.
- Antibiotic resistance is making it easier for typhoid to spread and difficult for it to be treated.
- A new typhoid conjugate vaccine, with longer lasting immunity, approved by WHO in 2017, is recommended for children from the age of 6 months.
- Vaccination, access to safe water and adequate sanitation among food handlers can reduce transmission.
- Even vaccinated travellers should avoid consumption of potentially contaminated food and water as vaccination does not provide 100% protection.



Communication materials on typhoid

No	Audience	Focus
1	General public	Measures to control typhoid
2	Farmers	Measures to control typhoid



What you can do to control typhoid

- Share the posters with communities and farmers, especially in areas where water sources are not filtered or disinfected.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Farmers, associations, fruit and vegetable vendors and suppliers, sea food suppliers and sellers must be made aware about key precautions they can take to control the spread of typhoid in their area. Share also with governmental authorities with a mandate to improve sanitation and food quality.

For the general public

For farmers and vendors

Typhoid fever

Information for the general public

Source of infection

Typhoid is a life-threatening systemic infection. It is transmitted through ingesting contaminated food or water.



Types of exposure & prevention

Poor sanitation and lack of clean drinking-water. Climate change has increased the burden of typhoid. Increased antibiotic resistance is making treatment a challenge. Prevention and vaccination are key.



Get vaccinated as typhoid is becoming resistant to antibiotics



Wash hands with soap and clean water, especially after using the toilet and before washing food



Infected patients should avoid preparing or serving food to other people



Ensure sanitation and clean drinking-water even if you are vaccinated

Signs & symptoms

In case of following symptoms, quickly see a doctor for treatment. Symptoms include:



Prolonged high fever



Fatigue, headache and nausea



Abdominal pain



Constipation or diarrhea



Small spots usually occur between the second and fourth week of illness



Groups of 5-10 pink blanching patches (rose) appear on the anterior trunk

Actions to take in case of symptoms:



Seek immediate medical advice.



Typhoid fever

Information for farmers and vendors

Source of infection

Typhoid is a life-threatening systemic infection. It is transmitted through ingesting of contaminated food or water.



Types of exposure & prevention

Poor sanitation and lack of clean drinking-water. Climate change has increased the burden of typhoid. Increased antibiotic resistance is making treatment a challenge. Prevention and vaccination are key.



Get vaccinated as typhoid is becoming resistant to antibiotics



Ensure sanitation and clean drinking-water even if you are vaccinated



Wash fruit and vegetables well



Wash hands with soap and clean water, especially after using the toilet and before washing food



Avoid touching, crops, food and water if you have symptoms or are home contacts or are at high risk



Drink pasteurized or boiled milk. Avoid raw milk and products made from raw milk



Avoid ice unless it is made from safe water



Avoid open defecation

Signs & symptoms



Prolonged high fever



Fatigue, headache and nausea



Abdominal pain



Constipation or diarrhea



Small spots usually occur between the second and fourth week of illness



Groups of 5-10 pink blanching patches (rose) appear on the anterior trunk

Actions to take in case of symptoms:



Seek immediate medical advice.



13. Vector-borne diseases

- Vector-borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors.
- Common vectors include mosquitoes, ticks, bugs, flies and other insects.
- The burden of vector-borne diseases is highest in tropical and subtropical areas, and they disproportionately affect the poorest populations.
- Exposure to vectors during pregnancy presents many serious hazards for mother and child.
- Older people, pregnant women, newborns and children are high-risk populations.
- The transmission of vector-borne diseases can be significantly reduced through implementation of effective vector control and prevention interventions.
- Encourage people to get vaccinated against vector-borne diseases like yellow fever and malaria.



Communication materials on vector-borne diseases

No	Audience	Focus
1	General public	Measures to control vector-borne diseases
2	Travellers and tourists	Measures to control vector-borne diseases



What you can do to control vector-borne diseases

- Share the posters with communities living in mud houses, slums and areas in which mosquitoes breed.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share also with travellers, encouraging them to get vaccinated against those vector-borne diseases for which a vaccine is available like yellow fever. Also share with governmental authorities with a mandate to reduce vector breeding and improve sanitation.

For the general public

For travellers and tourists

Vector-borne diseases

Information for the general public

Source of infection

Vector-borne diseases are human diseases caused by parasites, viruses and bacteria that are transmitted by vectors.



Type of exposure & prevention

Vector-borne diseases are transmitted by insects such as mosquitoes, sandflies and ticks.



One bite of a vector can cause life-threatening diseases like:

- Malaria
- Lyme disease
- Japanese encephalitis
- Chikungunya
- Leishmaniasis
- Dengue
- Crimean-Congo haemorrhagic fever
- Zika

Prevention



Get vaccinated against yellow fever and Japanese encephalitis



Install window screens at home and office



Wear light-coloured and long-sleeved T-shirts and trousers to avoid vector bites



Use insect repellent



Sleep under an insecticide-treated bed net



Get rid of stagnant water from places where mosquitoes breed, such as old containers, flowerpots and used tyres



Reduce vector breeding in your area by spraying insecticides

Actions to take in case of symptoms:



In case of exposure to vectors and if experiencing any symptoms, see your doctor and follow medical advice.



Vector-borne diseases

Information for travellers and tourists

Source of infection

Vector-borne diseases are human diseases caused by parasites, viruses and bacteria that are transmitted by vectors.



Type of exposure & prevention

Vector-borne diseases are transmitted by insects such as mosquitoes, sandflies and ticks.



One bite of a vector can cause life-threatening diseases like:

- Malaria
- Lyme disease
- Japanese encephalitis
- Chikungunya
- Leishmaniasis
- Dengue
- Crimean-Congo haemorrhagic fever
- Zika

Prevention



Get vaccinated against yellow fever and Japanese encephalitis



Install window screens at home and office



Wear light-coloured and long-sleeved T-shirts and trousers to avoid vector bites



Use insect repellent



Sleep under an insecticide-treated bed net



Get rid of stagnant water from places where mosquitoes breed, such as old containers, flowerpots and used tyres



Reduce vector breeding in your area by spraying insecticides

Actions to take in case of symptoms:

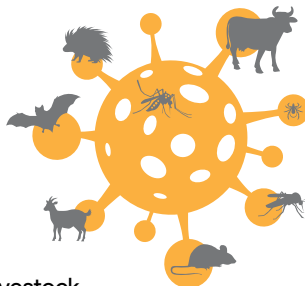


In case of exposure to vectors and if experiencing any symptoms, see your doctor and follow medical advice.



14. Viral haemorrhagic fevers

- Viral haemorrhagic fevers are infectious diseases that can cause severe, life-threatening illness.
- They spread through infected animals, including rodents, vectors and consumption of materials contaminated by them.
- They also spread through consumption of meat and unpasteurized milk of infected livestock.
- There is no cure for viral haemorrhagic fevers. There are vaccines for only a few types. Until additional vaccines are developed, the best approach is prevention.
- There are no effective and proven treatment options, apart from supportive care.
- In the Eastern Mediterranean Region, the main viral haemorrhagic fevers are yellow fever, Rift Valley fever, dengue fever, Crimean–Congo haemorrhagic fever and Ebola virus disease.
- Improved food sanitation, vector control and vaccination reduce transmission.



Communication materials on viral haemorrhagic fevers

No	Audience	Focus
1	General public	Measures to control viral haemorrhagic fevers
2	Health workers	Measures to control viral haemorrhagic fevers
3	Farmers	Measures to control viral haemorrhagic fevers



What you can do to control haemorrhagic fevers

- Share the posters with communities, health workers and farmers in areas where human-to-animal and human-to-vector exposure is high.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share with farmers associations, people living near jungles and in areas where exposure to bats, porcupines, rodents, cattle and vectors is likely.

For the general public

Viral haemorrhagic fevers

Information for the general public

Sources of infection

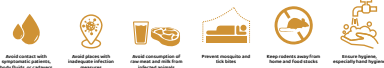
Both vector borne and zoonotic. Viral haemorrhagic fever is transmitted by vectors and insects such as mosquitoes, ticks, sandflies and animals like bats, porcupines, rats and cattle like goat, sheep and cows.



Types of exposure & prevention

Viral haemorrhagic fevers are infectious life-threatening diseases spread by contact with infected animals, people or insects. They include a range of diseases like Crimean-Congo haemorrhagic fever, dengue, Ebola, Lassa, Marburg, yellow fever and Rift Valley Fever. There is only a vaccine for yellow fever. Taking precautions is the only way to prevent infection.

Prevention:



Symptoms

Viral haemorrhagic fevers include a spectrum of relatively mild to severe life-threatening diseases characterized by:



Actions to take in case of symptoms:



Take precautions and seek medical advice immediately in case of any symptoms.



For farmers

Viral haemorrhagic fevers

Information for farmers

Sources of infection

Both vector borne and zoonotic. Viral haemorrhagic fever is transmitted by vectors and insects such as mosquitoes, ticks, sandflies and animals like bats, porcupines, rats and cattle like goat, sheep and cows.



Types of exposure & prevention

Viral haemorrhagic fevers are infectious life-threatening diseases spread by contact with infected animals, people or insects. They include a range of diseases like Crimean-Congo haemorrhagic fever, dengue, Ebola, Lassa, Marburg, yellow fever and Rift Valley Fever. There is only a vaccine for yellow fever. Taking precautions is the only way to prevent infection.

Prevention:

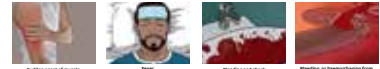


Viral haemorrhagic fevers are spread by contact with these infected animals or insects:

Disease	Primary vector/insect	Reservoir animal
Crimean-Congo haemorrhagic fever	Ticks	Cattle, sheep, goats
Dengue	Mosquitoes	Humans
Yellow fever	Mosquitoes	Humans, monkeys
Marburg	Bats	Humans
Rift Valley fever	Ticks	Cattle, sheep, goats

Symptoms

Viral haemorrhagic fevers include a spectrum of relatively mild to severe life-threatening diseases characterized by:



Actions to take in case of symptoms:



In case of symptoms, seek medical advice from your doctor.



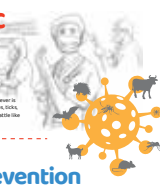
For health workers

Viral haemorrhagic fevers

Information for health workers

Sources of infection

Both vector borne and zoonotic. Viral haemorrhagic fever is transmitted by vectors and insects such as mosquitoes, ticks, sandflies and animals like bats, porcupines, rats and cattle like goat, sheep and cows.



Types of exposure & prevention

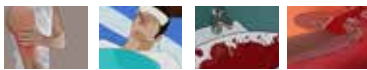
Viral haemorrhagic fevers are infectious life-threatening diseases spread by contact with infected animals, people or insects. They include a range of diseases like Crimean-Congo haemorrhagic fever, dengue, Ebola, Lassa, Marburg, yellow fever and Rift Valley Fever. There is only a vaccine for yellow fever. Taking precautions is the only way to prevent infection.

Prevention:



Symptoms

Viral haemorrhagic fevers include a spectrum of relatively mild to severe life-threatening diseases characterized by:



Actions to take in case of symptoms:

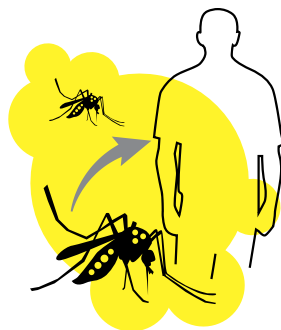


In case of symptoms, start treatment immediately and inform your supervisor. Rest and continue treatment until you fully recover.



15. Yellow fever

- Yellow fever virus is transmitted to people primarily through the bites of infected *Aedes aegypti* mosquitoes.
- Emergency mass vaccination and vector control are the two main ways to control outbreaks.
- Yellow fever vaccine is safe and provides lifelong immunity.
- Routine immunization for children is key to preventing outbreaks.
- Yellow fever is hard to distinguish from diseases with similar symptoms.
- Early clinical management improves survival.



Communication materials on yellow fever

No	Audience	Focus
1	General public	Measures to control yellow fever
2	Travellers	Measures to control yellow fever




What you can do to control yellow fever

- Share the posters with communities living in countries with yellow fever or travellers to those countries.
- These posters can be accessed at:
<https://www.emro.who.int/high-threat-pathogens-posters.html>
- Share with travel associations, major airports and flight operators to countries with yellow fever.

For the general public

Yellow fever

Information for the general public



Source of infection


Yellow fever is an acute viral haemorrhagic disease transmitted by mosquitoes, belonging to the *Aedes* and *Haemagogus* species.

Types of exposure & prevention

Yellow fever is transmitted through mosquito bites. Prevent it by:


- Getting vaccinated. Yellow fever vaccine gives lifelong immunity.
- Avoiding mosquito bites by using repellents.
- Sleeping under bed nets.
- Wearing long sleeved, light-coloured clothing outdoors, especially after sunset.
- Using window nets to prevent mosquitoes from entering.
- Reducing mosquito breeding by clearing bushes, leaving grass short.

Symptoms




Fever Yellow eyes Dark urine Vomiting blood Diarrhoea Slow pulse

Actions to take in case of symptoms:




If you experience symptoms, seek medical care immediately.

 World Health Organization
www.who.int/emergencies/yellowfever

For travellers

Yellow fever

Information for travellers



Source of infection


Yellow fever is an acute viral haemorrhagic disease transmitted by mosquitoes, belonging to the *Aedes* and *Haemagogus* species.

Types of exposure & prevention

Yellow fever is transmitted through mosquito bites. If you are planning to travel to a country with yellow fever, take the following precautions:


- Get vaccinated.
- Keep the yellow-fever vaccination card with you.
- Use a bed net.
- Keep your own mosquito repellents.

Symptoms




Fever Yellow eyes Dark urine Vomiting blood Diarrhoea Slow pulse

Actions to take in case of symptoms:



Avoid travel to areas experiencing an outbreak. If you experience symptoms, seek medical care immediately.

 World Health Organization
www.who.int/emergencies/yellowfever



Egypt - World Health Organization
Regional Office for the Eastern Mediterranean
Monazamet El Seha El Alamia Str,
Extension of Abdel Razak El Sanhoury Street
P.O. Box 7608, Nasr City
Cairo 11371, Egypt