

Multisectoral training on Epidemiology, preparedness and response during cholera epidemics.



Introduction to the Course

30 min



The Training Team



Logistic/Admin facilitator - XXXXX

Presenters

Name 1, Expertise, Institution
Name 2, Expertise, Institution
Name 3, Expertise, Institution
Name 4, Expertise, Institution
....

Facilitators

Name 1, Expertise, Institution
Name 2, Expertise, Institution
Name 3, Expertise, Institution
Name 4, Expertise, Institution
....

This Session.....

Welcome and introduction of participants

**Review workshop objectives, methodology
and the learning journey**

**Review participants' expectations and
concerns**

Establish schedule and ground rules

Getting to know each other... **Virtually**

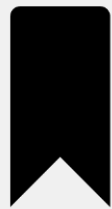


1/2



When the facilitator calls your name,

1. Please introduce yourselves by name, function, country, and



2. The name of your most favourite person in history and in the world: the person could be a man or a woman, dead or alive, hero, artist or thinker....



unicef



Getting to know each other

2/2

In plenary:

- What did we learn about each other?
- What are the persons in common that we admire?
- What does that mean?

Overall Objective of this course

To build the capacity of Health, WASH and RCCE professionals to enable them effectively understand, prepare and respond to cholera epidemics in a multisectoral and integrated manner, in line with the Global Task Force on Cholera Control (GTFCC) roadmap.

Specific Objectives

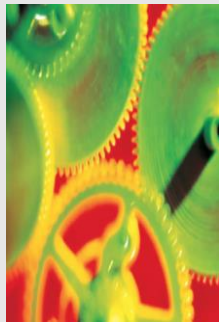
At the end of the course, participants will be able to:



1. Have a better understanding of the GFTCC cholera road map



3. Interpret the available data coming from Health, WASH and RCCE sectors and know how to use them for decision making

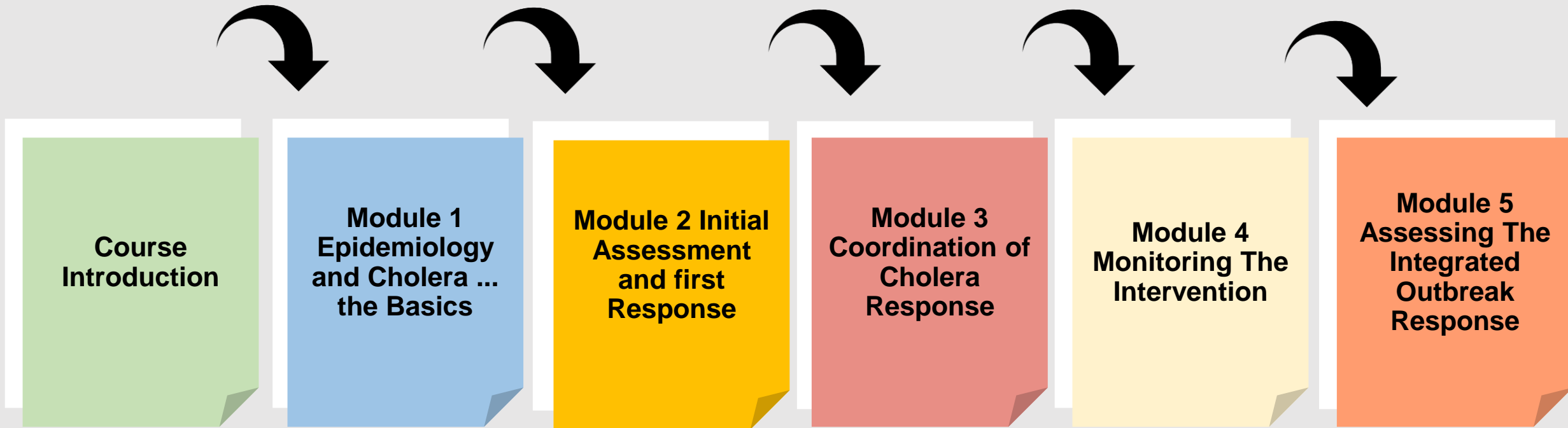


2. Know how to coordinate internally and how to act in an integrated manner



4. React promptly and adequately over the different pillars if an outbreak occurs

The Learning Journey



Methodology

The methodology followed in this course will be as participatory and interactive as the virtual world permits, using various techniques:



**Case studies and
Scenarios from the
region**



**Small group
discussions using
“breakout rooms”**



**Polls to get
participants
feedback on the
session or the day**



Role Plays



Quizzes

Our “Net-iquette”

- Minimize distractions:
Quiet place, phone off...



- Participate either by speaking or writing your question or comment in the chat



- Raise your hand



- Have patience especially when you post your questions in the chat



- Keep us in the loop (when you have to step away)



- Be on time for each session



Expectations & Concerns

Using the CHAT box, please write:

- One or two expectations you have from this course**
- And one concern you may have about it**

enjoy

your course

!!



unicef

Epidemiology and cholera : The basics



Global cholera road map
of the Global Task Force for Cholera Control

Basics (?) on cholera

Quiz

Q # 1 Which pathogen can cause cholera ?

- A. a bacterium, gram negative rod, called vibrio cholerae
- B. a virus surviving in the water when the weather is warm
- C. a parasite present in stagnant water in most of tropical areas

Q # 1

Which pathogen can cause cholera ?



- A. a bacterium, gram negative rod, called vibrio cholerae
- B. a virus surviving in the water when the weather is warm
- C. a parasite present in stagnant water in most of tropical areas

Q # 2

To date, we have faced 7 cholera pandemics in the world, 6 of which have been most likely due to **the classical biotype** and the current one, started in 1961 in Indonesia, resulted from **the El Tor biotype**.

What are the main differences between the both ?

- A. El tor biotype survives well on zooplankton and other aqueous flora and fauna
- A. El Tor has less durable natural immunity after infection
- C. El Tor has a higher proportion of asymptomatic cases

Q # 2

To date, we have faced 7 cholera pandemics in the world, 6 of which have been most likely due to **the classical biotype** and the current one, started in 1961 in Indonesia, resulted from **the El Tor biotype**.
What are the main differences between the both ?



The three options are true

- A. El tor biotype survives well on zooplankton and other aqueous flora and fauna
- B. El Tor has less durable natural immunity after infection
- C. El Tor has a higher proportion of asymptomatic cases

Q # 3

What is the incubation period within humans ?

- A. 12 hours to 5 days
- B. 1- 4 hours
- C. From 3 days to 10 days

Q # 3

What is the incubation period within humans ?



- A. 12 hours to 5 days
- B. 1- 4 hours
- C. From 3 days to 10 days

Q # 4

What is the bacterial survival period in the environment ?

- A. Few hours on dry surfaces
- A. 1-14 days at room temperature
- C. 5-24 days in wells

Q # 4

What is the bacterial survival period in the environment ?



All of them

- A. Few hours on dry surfaces
- B. 1-14 days at room temperature
- C. 5-24 days in wells

Q #5

What is the proportion of asymptomatic people among those infected?

A. 25%

A. 50%

C. 75%

Q #5

What is the proportion of asymptomatic people among those infected?



A. 25%

A. 50%

C. 75%

Q # 6

What are the main symptoms of cholera ?

- A. Sudden profuse watery diarrhoea (“rice water stools”)
- B. Vomiting
- C. Dehydration

Q # 6 What are the main symptoms of cholera ?



All of them

- A. Sudden profuse watery diarrhoea (“rice water stools”)
- B. Vomiting
- C. Dehydration

Q # 7

Of the symptomatic cases, which proportion will develop a severe disease requiring hospital care ?

A. 5%

B. 20%

C. 50%

Q # 7 **Of the symptomatic cases**, which proportion will develop a severe disease requiring hospital care ?



A. 5%

B. 20%

C. 50%

**20 % of
symptomatic
infected persons,
or 5% of all
infected cases**

Q # 8

What is the duration of the disease in one individual ?

A. From one day, up to one week with the usual duration being 3 days

B. From three days to 10 days, with the usual duration being 5 days

Q # 8

What is the duration of the disease in one individual ?



A. From one day, up to one week with the usual duration being 3 days

B. From three days to 10 days, with the usual duration being 5 days

Q # 9

Who are the most vulnerable age groups ?

- A. In endemic areas, adults possess a level of acquired immunity that can protect them, children are therefore the most vulnerable to symptomatic infection and severe illness during outbreaks
- B. In epidemic areas, children and adults are equally susceptible to the disease and the consequences of the infection if an outbreak occurs
- C. In endemic and epidemic countries, the children pay the largest price in terms of morbidity and deaths

Q # 9

Who are the most vulnerable age groups ?



The two first points are true

- A. In endemic areas, adults possess a level of acquired immunity that can protect them, children are therefore the most vulnerable to symptomatic infection and severe illness during outbreaks

- B. In epidemic areas, children and adults are equally susceptible to the disease and the consequences of the infection if an outbreak occurs

- C. In endemic and epidemic countries, the children pay the largest price in terms of morbidity and deaths

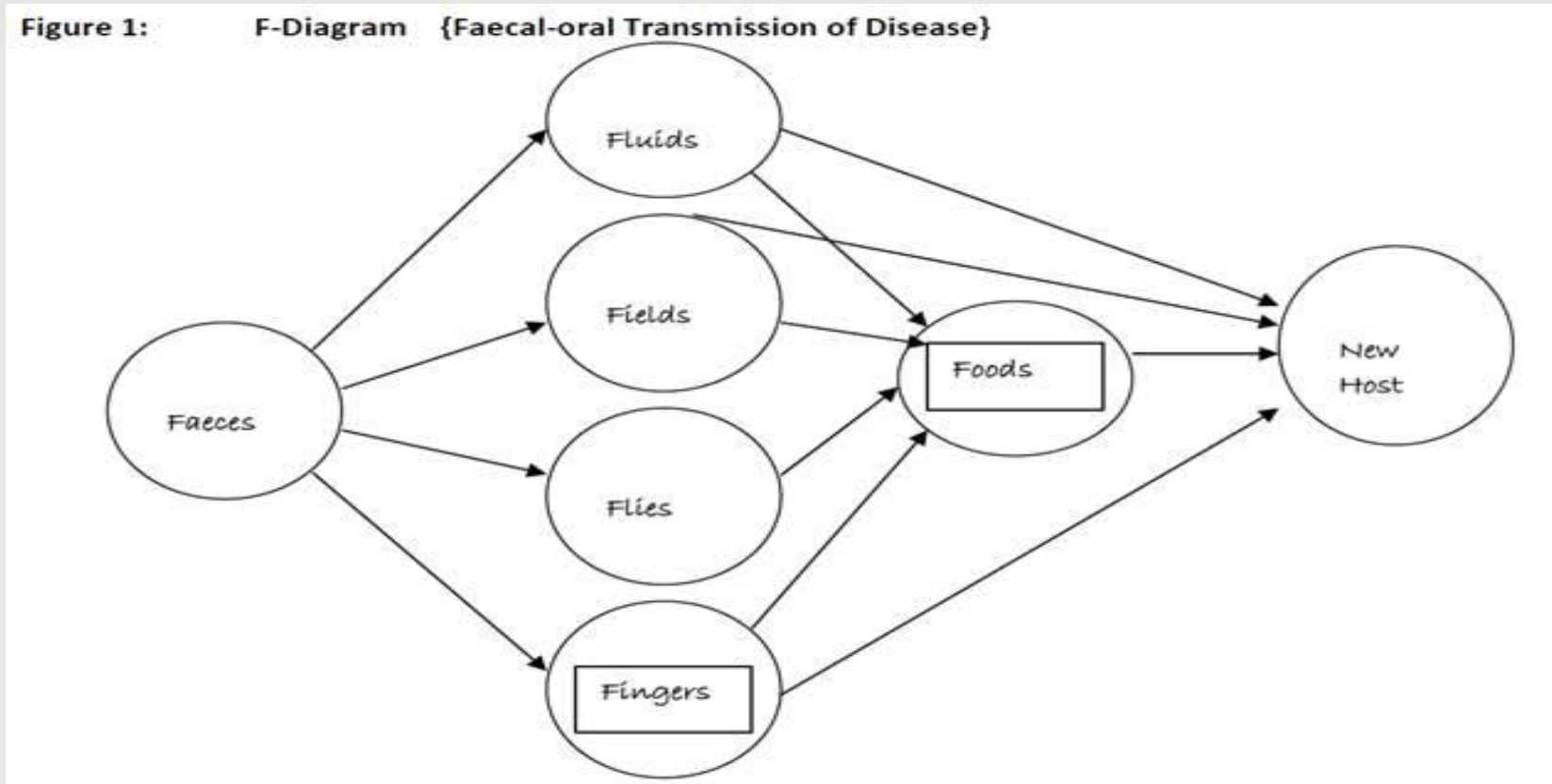
Q # 10

Could you write in the chat box what 5F diagram

Q # 10 Could you write in the chat box what 5F diagram



5F - for Faeces / Fluid (water) / Field / Flies / Fingers



Q # 11

What is the most important Principle for preventing cholera transmission ?

Q # 11 What is the most important Principle for preventing cholera transmission ?



The single most important principle for preventing cholera transmission

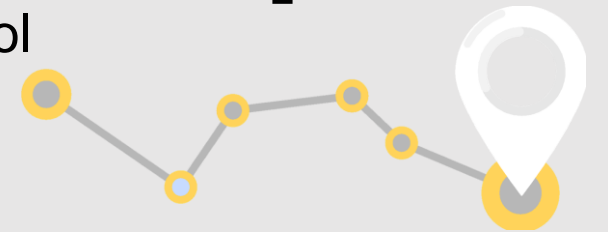
Keep faecal matter away from water and food and kill cholera bacteria that have contaminated food or water prior to consumption.

- People have access to and use safe water supply for drinking
- Household, communities, institutions practice safe food hygiene
- Infants are exclusively breastfed and if needed given safe fluids and food
- The environment is free from excreta because people dispose of it safely
- People wash their hands with soap and water at critical times
- Environmental hygiene is adhered to in markets and other public places



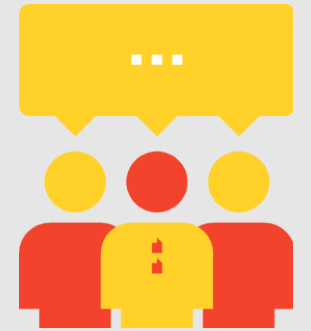
Global cholera road map

of the Global Task Force for Cholera Control



Buzz Groups:

- Please write in the CHAT box one or two organizations you think would be part of the Global Cholera Network



Organizations involved

- The Global Task Force on Cholera Control (GTFCC); global network of organizations
- All partners involved in the fight against cholera all sectors,
- Offering an effective country-driven platform that promotes a multi-sectoral, well-coordinated approach.



The Global Task Force on Cholera Control (GTFCC)

Created in 1992, the GTFCC became inactive after the elimination of cholera in the Americas.

The 2011 World Health Assembly resolution 64.15 “Cholera mechanisms for control and prevention” requested that the WHO Director-General revitalise the GTFCC.

2013 Creation of a OCV stockpile and long term funding support from GAVI – the vaccine alliance

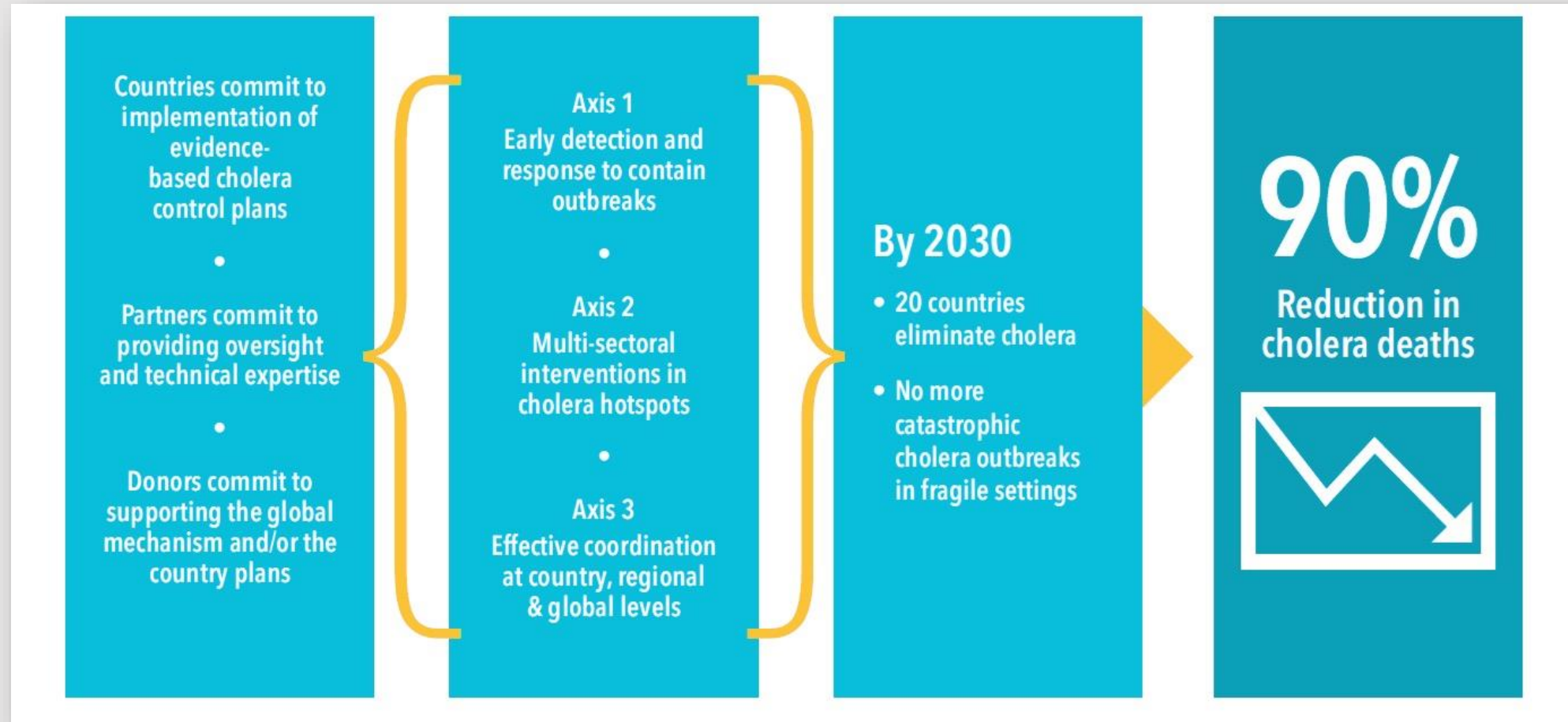
2014: Revitalisation of the GTFCC; new energy around cholera control played a critical role in coordinating multi-sector partners and activities.

2017 : Ending cholera – global road map

Theory of change

GTFCC Global cholera Road Map

2017 : Ending cholera – global road map



From preparedness and response to prevention and control

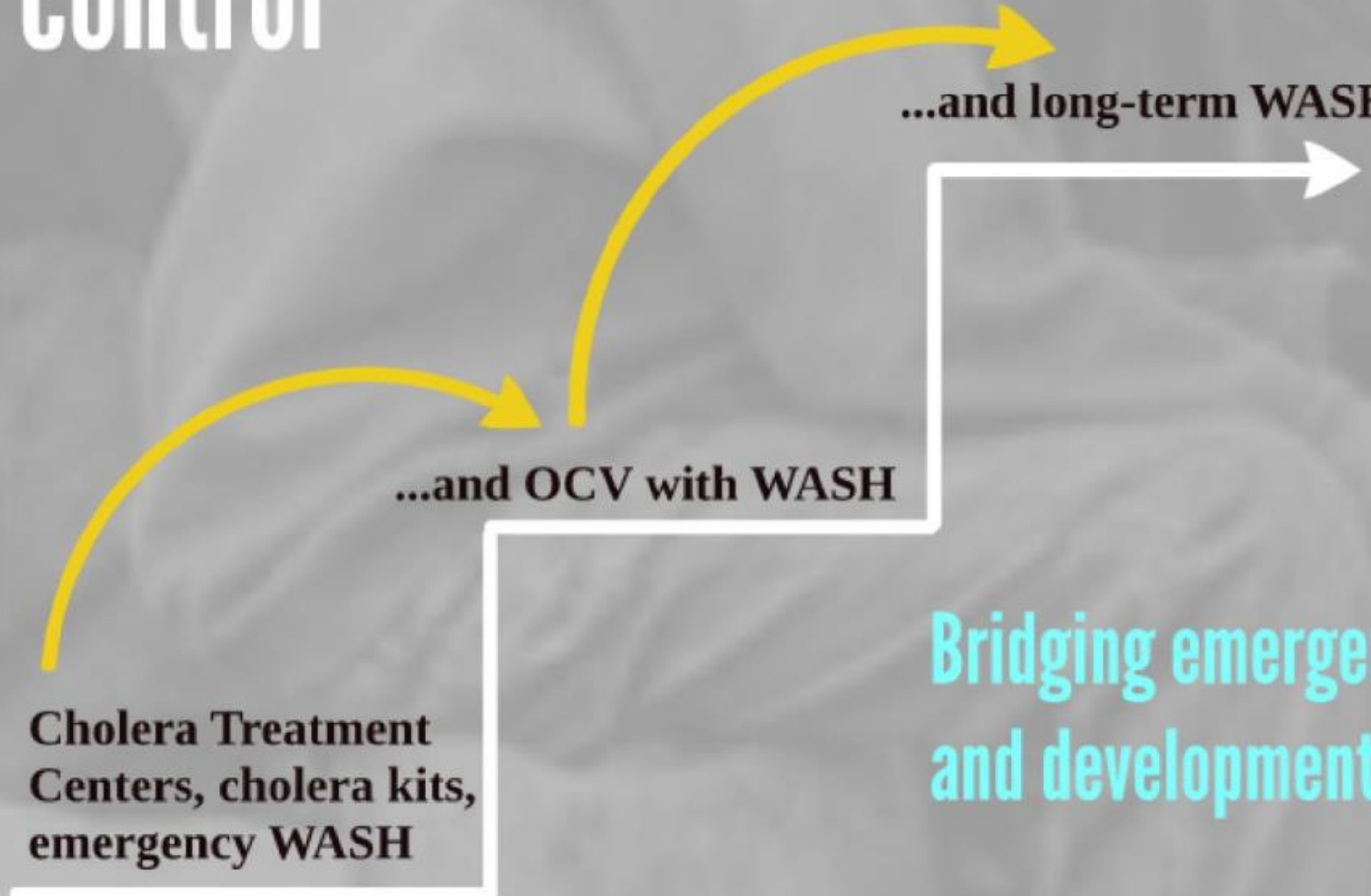
Treating patients alone has limited impact on transmission

Cholera Treatment Centers, cholera kits, emergency WASH

...and OCV with WASH

...and long-term WASH

Bridging emergency and development



Axis 1: Surveillance and preparedness

Initial outbreak response

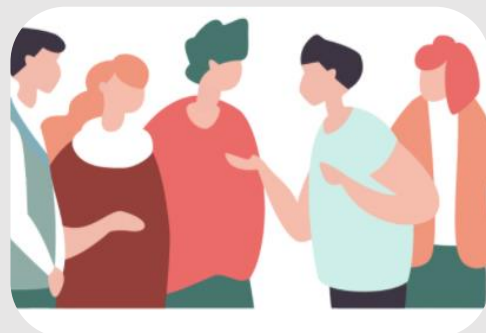


Preparedness of the health care system

- **Early warning surveillance system** at peripheral level
- **Pre-positioning** stocks of essential supplies
- **Improved health care facility infrastructure**
- **Set-up of dedicated health care facilities** (Cholera Treatment Centers (CTCs) and Cholera Treatment Units (CTUs))
- **Training of health workers.**
- **WASH and IPC in health facilities**



Establishment of WASH, Health and RCCE Rapid Response Team



Community engagement and community based interventions



Maintenance of stocks of WASH supplies



Reactive large-scale mass vaccination with OCV (to initiate as soon as cases are confirmed)



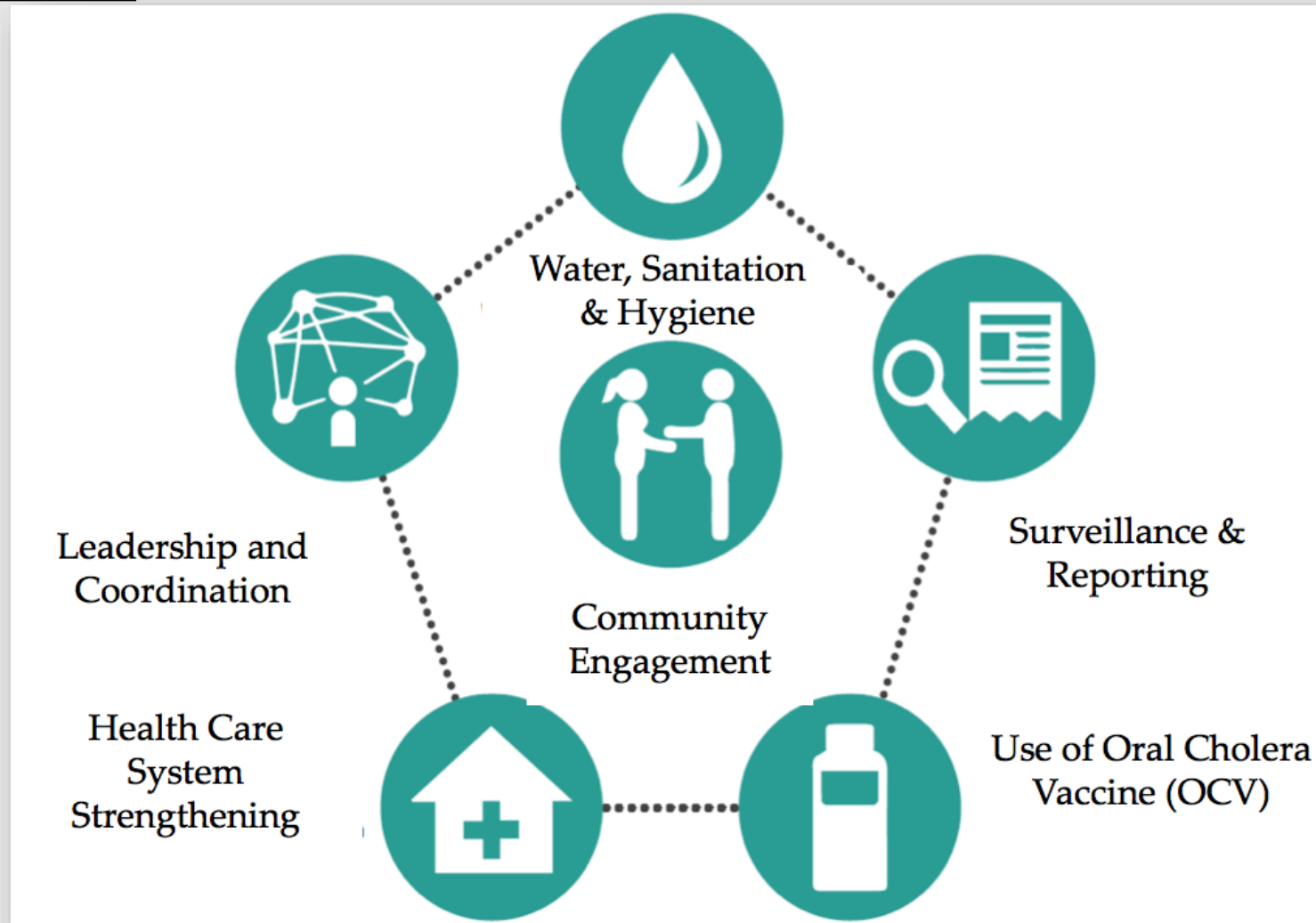
Specific WASH interventions to prevent disease spread (use of safe water, effective water treatment at point of use)



Contingency agreement for effective supply management

Axis 2 : Reduction/ Elimination of disease occurrence

In cholera priority areas

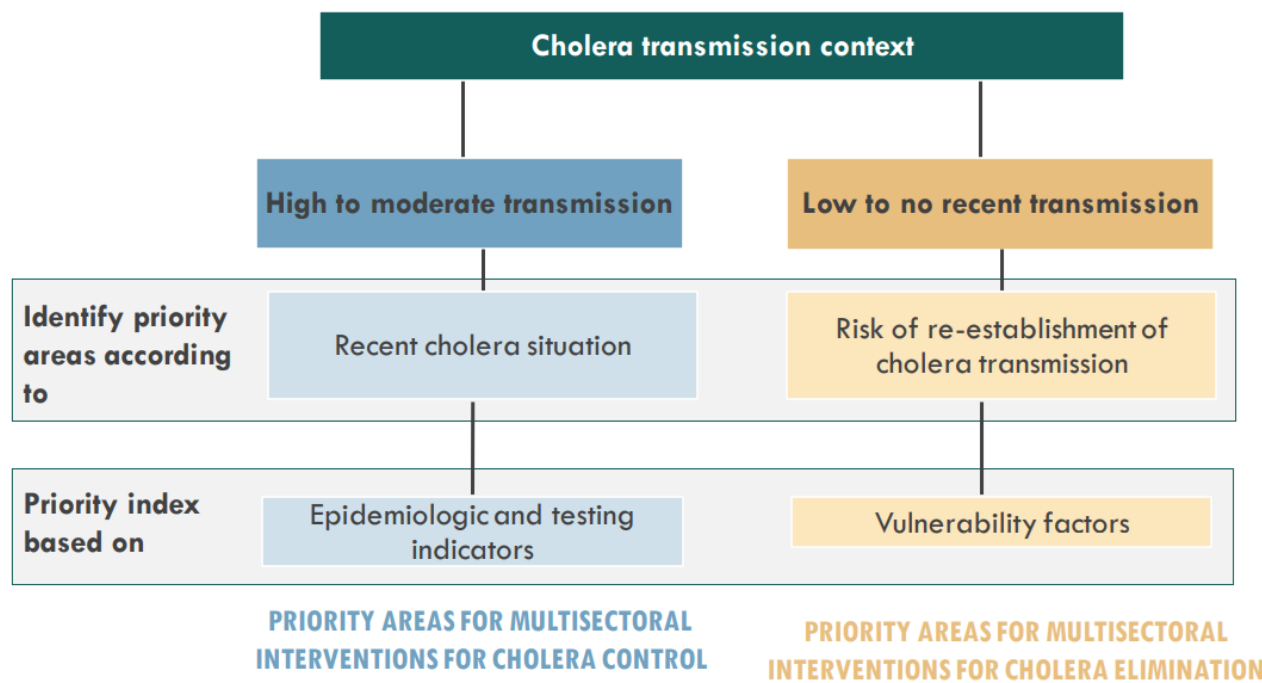


Axis 3 – Effective mechanism of **coordination** at local, regional and global level

- **Global - GTFCC**
- **Local – National Cholera Task Force**
- **National Country platform**

Identification of Priority areas for multi- sectorial intervention (PAMI)

DIFFERENT APPROACHES FOR DIFFERENT TRANSMISSION CONTEXTS



- The priority index should be based on retrospective data collected over the last **five to fifteen years**.
- PAMI analysis should be updated when a new version of an National Cholera Plan is developed (typically every **five years**)
- **Calculation of a Priority index = incidence score + mortality score + persistence score + cholera test positivity score (if applicable)**
- PAMI are selected based a priority index value above a (country-specific) priority index threshold,
- **On exceptional basis**, those with lack of reliability of the priority index and presence of context-specific vulnerability factors.
- **Tools** : GTFCC Excel-based tool: data overview, epidemiologic indicators score thresholds, assessment of representativeness of testing
- **Priority index summary** of the GTFCC Excel-based tool: summary table of key parameters stratified by priority index value

The National Cholera Plan (NCP)

The different steps

1 INCEPTION

Preparatory Phases:

- Declare country commitment
- **Identify & prioritize PAMIs**
- Conduct situational analysis
- Define leadership & coordination mechanism
- Formulate goal

2 DEVELOPMENT

For Each of the 5 Pillars:

- Formulate & prioritize activities
- Develop operational plans & associated budget
- Develop a monitoring & evaluation framework including definition of indicators & milestones

3 IMPLEMENTATION

For Each of the 5 Pillars:

- Implement according to
 - Prioritized activities
 - Established timelines
 - Available budget

4 MONITORING & REPORTING

For Each of the 5 Pillars:

- Conduct quarterly monitoring of indicators across each pillar
- Provide an annual report of progress against targets and indicators
- Prioritize activities for next period

Oral Cholera Vaccine Procurement

ICG* Framework

- Managed by the ICG for **emergency situations (outbreak response / humanitarian crisis)**
- OCV shipped rapidly to specific situations
- In areas where the opportunity for other interventions is limited
- Countries and/or partners can submit requests
- **1 request -> 1 campaign** (in general)

GTFCC Framework

- Facilitated by the GTFCC OCV Working Group for long term vaccination plans in **non-emergency** time
- OCV should be part of national **cholera control plans** by the country
- Clear identification of priority areas
- Commitment to go beyond vaccination (integration with WASH interventions)
- Countries submit the request (but partners can facilitate)
- **1 request -> multiple campaigns** over a longer period of time



unicef

* International Coordinating Group (ICG) on Vaccine Provision

Technical guidance and progress



Technical Guidance ×

<p>TECHNICAL GUIDANCE ✓ job-aid</p> <p>Specimen packaging & domestic transportation for laboratory confirmation of <i>Vibrio cholerae</i></p> <p>Download</p>	<p>TECHNICAL GUIDANCE ✓ document</p> <p>Specimen packaging and domestic transportation for laboratory confirmation of <i>vibrio cholerae</i></p> <p>Download</p>	<p>TECHNICAL GUIDANCE ✓ job-aid</p> <p>Strain conditioning for international transportation of <i>Vibrio cholerae</i></p> <p>Download</p>	<p>TECHNICAL GUIDANCE ✓ document</p> <p>Framework for decision-making: implementation of mass vaccination campaigns in the context of COVID-19</p> <p>Download</p>
<p>TECHNICAL GUIDANCE ✓ all</p> <p>GT FCC Cholera Outbreak Response Field Manual</p> <p>Download</p>	<p>TECHNICAL GUIDANCE ✓ job-aid</p> <p>Treatment of children with cholera and severe acute malnutrition (SAM)</p> <p>Download</p>	<p>TECHNICAL GUIDANCE ✓ document</p> <p>Cholera Outbreak Manual</p> <p>View</p>	<p>TECHNICAL GUIDANCE ✓ tool</p> <p>Tool for identification of cholera hotspots</p> <p>Download</p>

NEWS


Discover the latest news from the GT FCC, its partners and countries engaged in the fight to end cholera.

INTERVENTION ▾

Home - News

<p>September 30, 2020 NEWS</p> <p>Ministries of Health continue to implement OCV campaigns during COVID-19</p>	<p>July 7, 2020 NEWS</p> <p>Participate in the prioritization of research questions</p>	<p>June 26, 2020 NEWS</p> <p>Emergency OCV campaigns during COVID-19</p>	<p>April 30, 2020 NEWS</p> <p>Statement by the Steering Committee of the Global Task Force on Cholera Control (GT FCC)</p>
--	---	--	--

<https://www.gtfcc.org/cholera-app/>



Download Today

GET IT ON Google Play | Download on the App Store

Developed in partnership with adappt.co.uk



Epidemiology QUIZ

Q # 1

The focus of epidemiologic studies is on:

A: Individuals

B: Populations

C: Skin

Q # 1

The focus of epidemiological studies is on:

A: Individuals

B: Populations

C: Skin



Q # 2

The occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy is a/an:

A: Pandemic

B: Endemic

C: Epidemic

Q # 2



The occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy is a/an:

A: Pandemic

B: Endemic

C: Epidemic

Q # 3

Any factor that brings about change in a health condition or other defined characteristic is a/an:

A: Determinant

B: Quantification

C: Outcome

Q # 3

Any factor that brings about change in a health condition or other defined characteristic is a/an:



A: Determinant

B: Quantification

C: Outcome

Q # 4

Epidemiologic studies that are concerned with characterizing the amount and distribution of health and disease within a population are called:

A: Analytic

B: Descriptive

C: Observational

Q # 4

Epidemiologic studies that are concerned with characterizing the amount and distribution of health and disease within a population are called:



A: Analytic

B: Descriptive

C: Observational

Q # 5

The probability that an event will occur, e.g., that an individual will become ill or die within a stated period of time or by a certain age is:

A: Epidemiologic Transition

B: Risk

C: Hypothesis

Q # 5

The probability that an event will occur, e.g., that an individual will become ill or die within a stated period of time or by a certain age is:



A: Epidemiologic Transition

B: Risk

C: Hypothesis

Q # 6

Incidence refers to:

A: The number of existing cases of a disease or health condition, or deaths in a population at some designated time

B: The occurrence of new disease episode within a defined period of observation in a specific population

C: A summary rate based on the actual number of events in a population over a given time period

Q # 6

Incidence refers to:



A: The number of existing cases of a disease or health condition, or deaths in a population at some designated time

B: The occurrence of new disease episode within a defined period of observation in a specific population

C: A summary rate based on the actual number of events in a population over a given time period

Q # 7 The term that refers to the number of deaths due to a disease that occur among persons who are afflicted with that disease is the:

A: Crude Death Rate

B: Case-Fatality Rate

C: Proportional mortality ratio

Q # 7

The term that refers to the number of deaths due to a disease that occur among persons who are afflicted with that disease is the:

A: Crude Death Rate

B: Case-Fatality Rate

C: Proportional mortality ratio



Q # 8

This classifies the occurrence of disease according to the variables of person, place, and time:

A: Descriptive Epidemiology

B: Analytic Epidemiology

C: Environmental Epidemiology

Q # 8 This classifies the occurrence of disease according to the variables of person, place, and time:



A: Descriptive Epidemiology

B: Analytic Epidemiology

C: Environmental Epidemiology

Q # 9

Using symptoms-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response is:

A: Data Analysis

B: Public health surveillance

C: Syndromic Surveillance

Q # 9

Using symptoms-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response is:



A: Data Analysis

B: Public health surveillance

C: Syndromic Surveillance

Q # 10

Which of the following terms explain the time interval between invasion by an infectious agent and the appearance of the first signs or symptoms?

A: Generation Time

B: Incubation Period

C: Virulence

Q # 10 Which of the following terms explain the time interval between invasion by an infectious agent and the appearance of the first signs or symptoms?



A: Generation Time

B: Incubation Period

C: Virulence

Break – 10'

Surveillance and Outbreak investigation



What can account for an apparent increase in cases?

Change in reporting procedures / change in surveillance system

Change in case definition

Improvements in diagnostic procedures

Increased awareness

Increased access to health care

New physician, or clinic – may see more referred cases, may make diagnosis more often, or report more consistently

Laboratory or diagnostic error

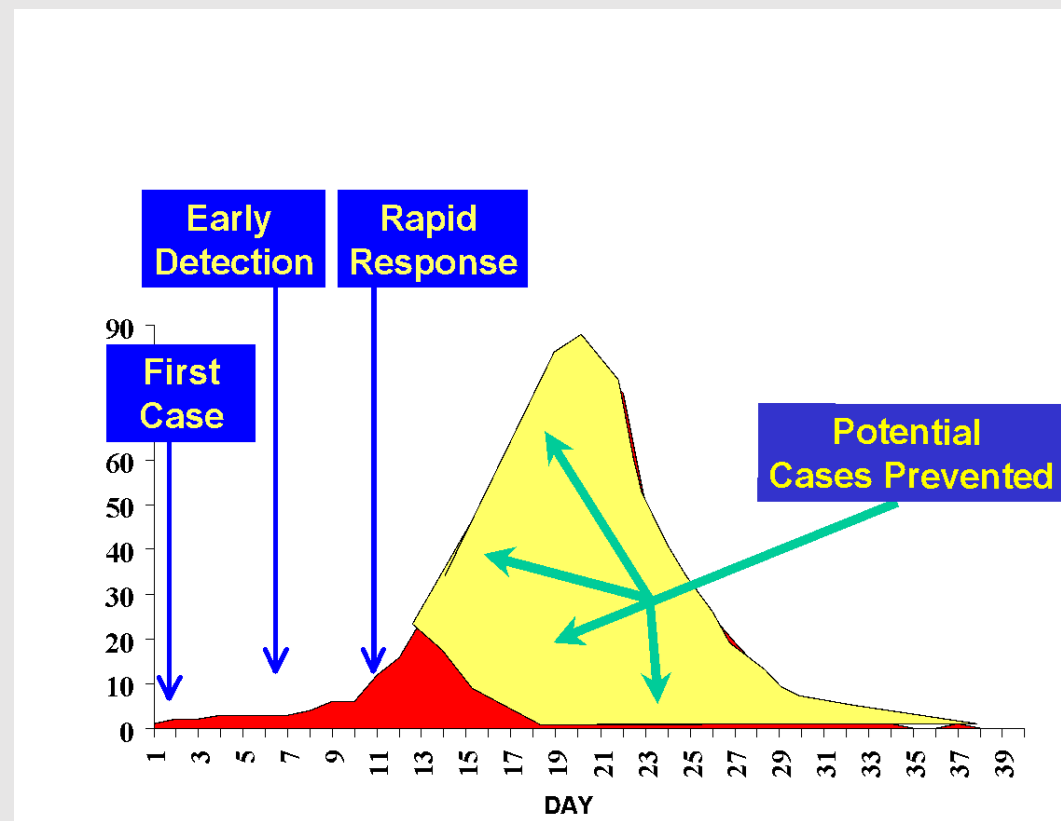
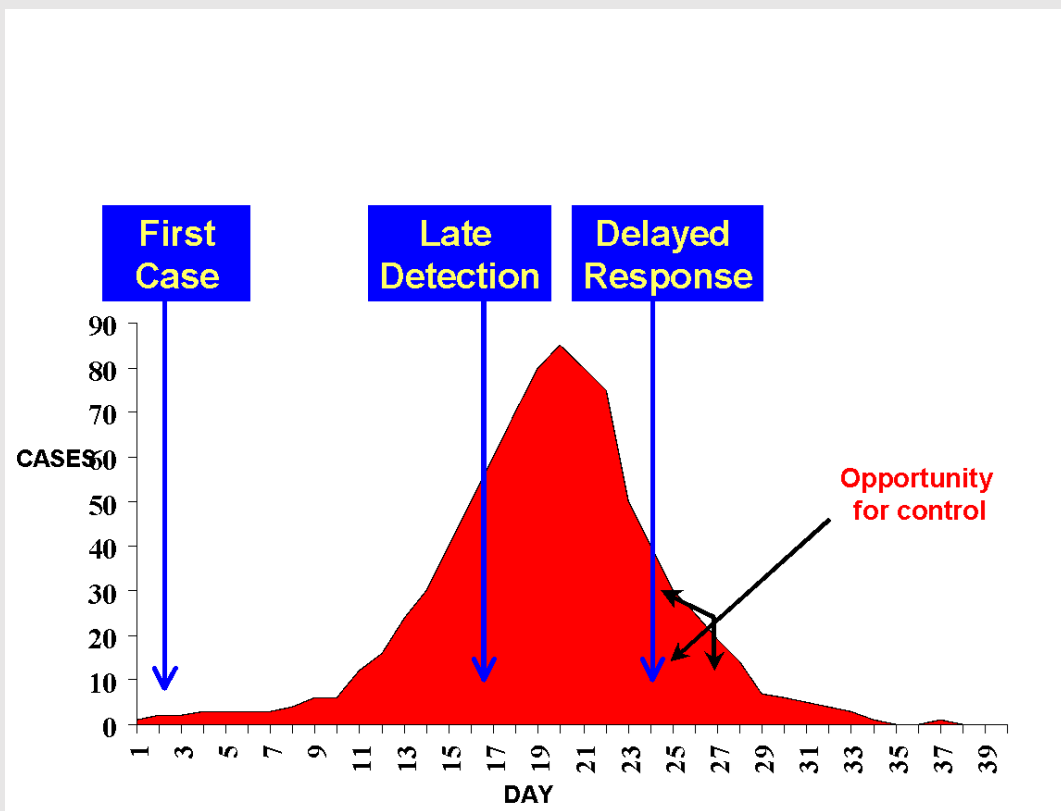
Change in denominator

True increase in incidence

Outbreak alert

Alert and epidemic threshold

Outbreak alert



What's a Cholera alert ?

Acute watery diarrhea
Illness with **3 or more**
loose or watery (non
bloody) stools within **24**
hour period

3 scenarios:
At least one of
the following:

Two or more person aged 2 years or older
with acute watery diarrhea and severe
dehydration, **or dying from an acute**
watery diarrhea, from the same area,
within 1 week of one another

One death from severe acute
watery diarrhea in a person **aged**
5 years or older

One case of acute watery diarrhea testing
positive for cholera by rapid diagnostic
test (RDT) in an area that has not yet
detected a confirmed case of cholera
(including areas at risk for extension from a
current outbreak)



Why investigate an alert ?



Stopping the epidemic propagation

Avoiding new cases and related deaths

Having a better understanding of the situation

Monitoring the surveillance system

How to confirm a cholera case ?

Field manual 'cholera outbreak response', GTFCC May 2019

➤ 1

Collect stool samples from symptomatic individuals

➤ 2

Send to the reference lab for lab confirmation by culture and/or PCR and antimicrobial susceptibility testing

- If RDT available at health facility level : prioritize samples RDT positive for lab confirmation
- Stool samples from the 5 – 10 first cases
- **For each new geographical area** (district, province, region) affected by the outbreak, conduct lab confirmation of suspected cholera by culture or PCR

➤ 3

When to declare the outbreak ?

- **V cholerae O1 or O139** is confirmed by **culture or PCR**
- **Evidence of acquired infection** (exclude imported cases)



unicef

unicef 

What is RDT and how to use it ?

Rapid Diagnostic Test

- specificity low = false positive can occur

RDT are used **only** for early outbreak detection at peripheral health care

This is not a tool for individual diagnosis

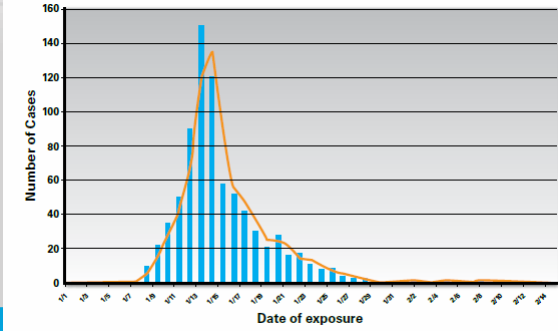
Use for triggering a cholera alert **but not to confirm the cholera outbreak**

Samples testing positive on a RDT should be prioritized for laboratory testing

A cholera outbreak can **only be** confirmed with culture or PCR

Description of cases for action

At which geographical level, is it useful ?



Health area level -- Health Facility catchment area District level

At each level, Describe the cases

Hypothesis
on the Transmission source

TIME

- Date of symptom onset

PLACE

- Place of residence (GPS point / neighborhood)

PERSON

Age group

Man/Woman

Occupation

IDP/local...

Ethnicity (for social norms)

BUT Also

Disease severity

Lab results

In the last 24h/last 5 days:

- Main water source use
- Unusual food source
- Mass gathering event (funeral, wedding, religious event..)

- Contact with a case (somebody having diarrhea)
- Visit a health facility Recent history of travel from a cholera epidemic/endemic areas

Factors favourable for introduction or re-emergence (1)

1/4

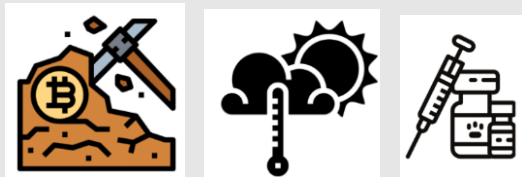
Vulnerability factors

- Remote areas and/or difficult to reach areas
 - Area with poor access to basic WASH
 - Areas affected by humanitarian emergencies, including man-made or natural disasters
- Areas with displaced population
- Areas with high poverty index
- Areas with high proportion of children with severe malnutrition
- Areas with high HIV prevalence
- Areas with special populations: prisoners, fishermen, military, etc.
- Areas with poor health systems
- Areas with poor preparedness and/or poor capacity for cholera response

Factors favourable for introduction or re-emergence (2)

2/4

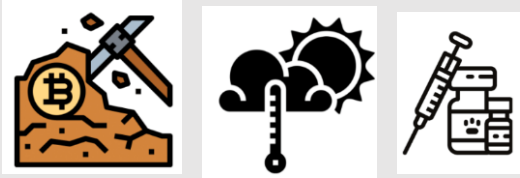
Factors related with transmission or/and amplification



- Areas with high population density: slums, refugee or IDP camps
- Areas located on trade routes with high transit of people or influx of travellers, big urban centres and transportation hubs
- Areas with mass gatherings, market places, other major industries (e.g. mining or other major industrial activities)
- Areas affected by extreme climate and weather conditions: heavy rains, flooding, droughts, periods of abnormally high temperature

Factors favourable for introduction or re-emergence (3)

3/4



Factors related with transmission or/and amplification

- Areas bordering with cholera affected countries with cross-border movements
- Areas adjacent to cholera hotspots
- Areas with low immunity of the population based on earlier exposure to cholera from previous outbreaks, from endemic situations or by vaccination

Factors favourable for introduction or re-emergence (4)

4/4

Cultural or behavioural factors

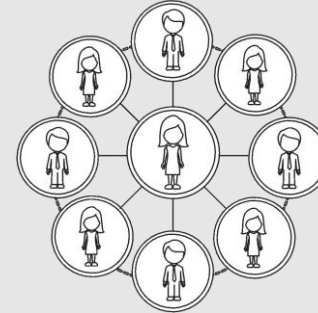
- Areas with unsafe burial practices
- Areas with high proportion of population reluctant to use health services
- Areas with low education level
- Areas with nomadic and mobile populations



Group Exercise Scenario 1

You will be divided into breakout rooms.

- The following link will be sent to you



Scenario One: Preparedness

https://docs.google.com/forms/d/e/1FAIpQLSdp_CqvPUZGINc88evr4IXgGQ4OAonrntKOLBpb-kPB7wiArg/viewform?usp=pp_url

Read the scenario, discuss the questions and be ready to report back

What we have learned in this session

- Each participant to write in the chat one new thing they have learned in this session

