PAMIs for cholera elimination

Module 1

GLOBAL TASK FORCE ON
CHOLERA CONTROL

What will you learn?

- How the **vulnerability index is calculated**

- How the **vulnerability index guides decision-making**

- How the final list of PAMIs is determined at the **stakeholder validation**

- **Next steps** following the stakeholder validation
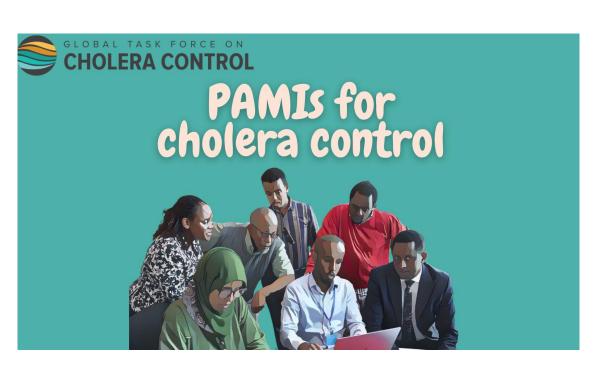
PAMIs for cholera elimination

■ **Identification of PAMIs for cholera elimination**

- For countries with **no to low** cholera transmission

Countries where < 5% of the geographic units reported cholera in the past 5 years

- To target spatially an NCP to **eliminate cholera in a sustainable manner**

- **Other countries**
  - ○ Identify **PAMIs for cholera control**
  - ○ Develop an NCP to control cholera

PAMIs for cholera elimination – Overview

PAMIs for elimination are the geographic units **most vulnerable** to cholera

Data-driven phase

- All geographic units are scored according to a **vulnerability index**

- Guides **objective decision making** to prioritize most vulnerable geographic units

Decision-making phase

- Stakeholders from:
  - Multiple sectors
  - Multiple levels
  - Multiple organizations

- Decide based on **consensus** on a vulnerability index **threshold**

- **All geographic units with cholera outbreaks in recent years and those with a vulnerability index ≥ threshold are PAMIs**

Data driven phase
Calculation of the vulnerability index

Photo adapted from: WHO
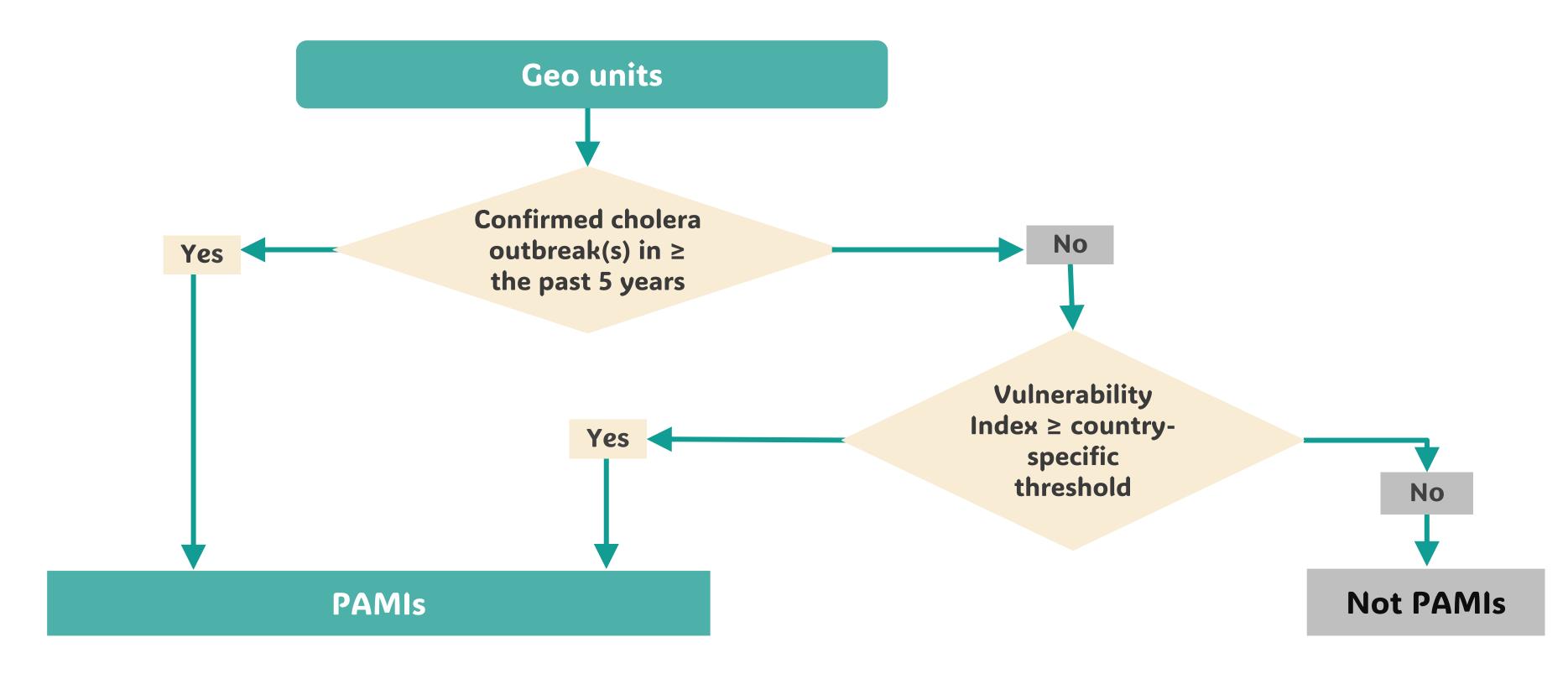
Assessment of vulnerability

Vulnerability to cholera is assessed with:

- **Occurrence of confirmed cholera outbreaks in recent years (≥ past 5 years)**
- **Presence of vulnerability factors increasing the risk of cholera outbreaks**

▶Geographic scale of the assessement

- Most appropriate geographic level to implement the NCP
- Country-specific
- Typically, administrative level 2 or administrative level 3

List of PAMIs

Geo units

Confirmed cholera outbreak(s) in ≥ the past 5 years

Yes

No

Vulnerability Index ≥ country-specific threshold

Yes

No

PAMIs

Not PAMIs

Occurrence of cholera outbreaks

If a confirmed **cholera outbreak** was reported in a geo unit in recent years, this geo unit is vulnerable to cholera: **it is a PAMI for elimination**

▶ **Definitions**

- **Confirmed cholera outbreak**
  At least one locally acquired confirmed cholera case reported in the geo unit

- **Locally acquired cholera case**
  Infection acquired in the geo unit considered

▶ **Assessment of the occurrence of outbreaks**

- Performed for **at least the past 5 years** with retrospective surveillance data

Vulnerability to cholera

Geo units where confirmed cholera outbreaks were NOT reported in recent years but which are **highly vulnerable** to cholera **are are also PAMIs**

▶Vulnerability to cholera

- Assessed with number of vulnerability factors present
- Captured in **vulnerability index**

▶Vulnerability factors

- Associated with a risk of
    - **Introduction** of cholera
    - **Onset** of a cholera outbreak
    - **Spread** of a cholera outbreak

Generic vulnerability factors

To help countries identify vulnerability factors, there is an
GTFCC indicative list of generic vulnerability factors

▶ **These indicators are generic as they are expected to be relevant in most countries**

- Recommended to consider all of these factors

- Except if duly justified in the country-specific context

▶ **This list is indicative as it can be complemented with additional factors**

- As relevant in country-specific context

Generic vulnerability factors

Photo adapted from: WHO

- **Imported cholera case(s) in recent years**

- **Location adjacent to frequently affected areas or PAMIs in neighbouring countries**

- **Location along major travel routes with transportation hubs**

- **Major population gatherings**
  For example: religious or pilgrimage gatherings, nomadic or pastoralist population gatherings

- **High population density or overcrowded settings**
  For example: urban slums, refugees or Internal Displaced People (IDPs) camps

Generic vulnerability factors

Photo adapted from: WHO/Eduardo Soteras Jalil

- **High-risk populations**
  For example: seasonal workers, fishermen, miners in informal settlements

- **Hard-to-access populations**

- **Oral cholera vaccine (OCV) more than three years ago**
  Especially in the absence of concomitant improvement in WASH

- **Risk for extreme climate and weather conditions**
  For example: droughts, floods

- **Complex humanitarian emergencies**

Generic vulnerability factors

Photo adapted from: WHO/Mulugeta Ayene

- **Unimproved water**

  Population using unimproved water source or surface water

- **Unimproved sanitation**

  Population using unimproved sanitation facilities or practicing open defecation

- **Limited access to hygiene**

  Population with no handwashing facility on premises

Additional vulnerability factors

**Countries consolidate the list of relevant vulnerability factors
with criteria for assessing their presence/absence**

▶Additional vulnerability factor(s)

- Factors associated with an increased risk of introduction of cholera, onset, or spread of a cholera outbreak in the **country-specific context**
- Scoping review, expert consultations

▶Assessment of the presence/absence of each vulnerability factor

- Vulnerability indicators: **measurable** and associated with **a data source**

▶Time period

- **Epidemiological** indicators (e.g., imported cases) assessed for the past **5 years**
- **Other** indicators assessed with the most **up-to-date** data sources available

Measurable vulnerability indicators

Vulnerability factors	Measurable vulnerability indicators
High population density	Number of inhabitants >1,000 per km²
At risk populations	Percentage of IDPs ≥ 5% of the population
Unimproved water	> 30% of the population using unimproved service level or surface water, or > 15% of the population using surface water

Scoring of vulnerability indicators

Using measurable vulnerability indicators, the **presence of each vulnerability factor** is assessed and **scored** in each geo unit

1	0
Present	**Absent**
Score: **1 point**	Score: **0 point**

Calculation of vulnerability index

The vulnerability index is the **sum of the scores** of all vulnerability factors

➡️**Weights**

- **By default**, all vulnerability factors have an **equal weight**

- Different weights may be considered if justified in the country-specific context

Calculation of vulnerability index

Example

➡ In a geo unit:

- No cholera outbreak was reported in the last 5 years

- The presence of vulnerability factors was assessed

  o Vulnerability factor A: **0 (absent)**

  o Vulnerability factor B : **1 (present)**

  o Vulnerability factor C : **1 (present)**

  o Vulnerability factor D : **1 (present)**

  o Vulnerability factor E: **0 (absent)**

Vulnerability index = 3

(3 vulnerability factors present)

PAMI Excel tool

A **PAMI Excel Tool** computes all calculations

Learn about:
- **How to prepare the data in Module 2**
- **How to use the PAMI Excel tool in Module 3**

Decision-making phase
Building consensus

Photo adapted from: WHO

Stakeholder validation

Consensus among multiple stakeholders on PAMIs taking into account:

- **Cholera outbreaks in recent years**
- **Vulnerability index**

➤**To determine the list of PAMIs, stakeholders**

- Fill all missing data

- Agree on a **vulnerability index threshold**

ⓘ Learn how to organize a PAMI stakeholder validation in Module 4

Vulnerability index threshold

▶ The vulnerability index guides **objective decision-making on PAMIs**

- A vulnerability index **threshold** set by consensus

- All geo units with vulnerability index ≥ threshold are PAMIs in addition to geo units with confirmed cholera outbreaks in recent years

Threshold balances the feasibility and the impact of the NCP

Threshold set low

Threshold set high

▶ High number of PAMIs

⚠ **Feasibility of the NCP**

▶ Low number of PAMIs

⚠ **Impact of the NCP**

Next steps
Documentation
and review

Photo adapted from: WHO / Lindsay Mackenzie

Documentation

➡ PAMI identification is **documented in a report** to describe:

- Method and outcomes
- Decisions and justifications

> **To prepare a comprehensive report, follow the GTFCC template report**

ℹ **Learn how to prepare a report on PAMI identification in Module 5**

GLOBAL TASK FORCE ON
CHOLERA CONTROL

Template report on the identification of PAMIs for cholera elimination

I. Background

- Information on any previous identification of PAMIs (method, analysis period)
- Information on NCP status and targets (past, current, and future) in the country
- Concise description of the cholera epidemiological situation in the country and cholera control efforts in recent years (up to last 10 years)
- Concise description of cholera surveillance system
- Concise description of cholera testing strategy
- Justification for using the method "PAMIs for cholera elimination" (i.e., provide percentage of NCP operational geographic units with confirmed cholera outbreaks cumulatively over the past five years)

II. Methods

Supporting information

- Administrative level of NCP operational geographic units
- Duration of analysis period
- Description of vulnerability factors considered in the analysis
- Rationale for not selecting of any generic vulnerability factors (if applicable)
- Rationale for selecting of any additional country-specific vulnerability factors (if applicable)

Vulnerability index

- Data documentation table reporting the definition of each measurable indicator with concise description of the corresponding data sources
- Assessment of quality of the data
- Management of missing data

GTFCC PAMI reviews

▶ Independent technical reviews of PAMI identification for countries to receive:

- **Independent technical feedback**

- **Practical advice and recommendations**

Mandatory for countries planning to

- Request OCV for preventive use

- Submit their NCP for GTFCC endorsement

i **Learn about GTFCC PAMI reviews in Module 5**

Wrap up

➡ For countries where **< 5% of the geographic units reported cholera over the past 5 years**

Data driven phase

- Identify geographic units with reported **cholera outbreaks**
- Identify **vulnerability factors** and **measurable indicators**
- Capture the presence of vulnerability factors in the **vulnerability index**

Decision-making phase

- Stakeholders agree on a **vulnerability index threshold**
- PAMIs are geo units
  - With confirmed **cholera outbreaks** in recent years or
  - With a vulnerability index **above the selected threshold**

Quiz time

Question 1

▶ **Which geo units are always PAMIs for cholera elimination?**

a) Geographic units with Internally Displaced People (IDP)

b) Geographic units where a confirmed cholera outbreak was reported in recent years

c) Geographic units with high population growth

d) Geographic units with limited access to health care

Question 1 – Answer

➡ **Which geo units are always considered for cholera elimination?**

a) Geographic units with Internally Displaced People (IDP)

b) Geographic units where a confirmed cholera outbreak was reported in recent years

c) Geographic units with high population growth

d) Geographic units with limited access to health care

Question 2

How is vulnerability to cholera assessed to identify PAMIs for cholera elimination?

a) Presence of factors increasing the risk of onset of a cholera outbreak

b) Occurrence of confirmed cholera outbreak in recent years

c) Level of access to safely managed drinking water below the target of the sustainable development goals

d) Presence of factors increasing the risk of introduction of cholera, onset of a cholera outbreak, or spread of a cholera outbreak

Question 2 – Answer

➡ **How is vulnerability to cholera assessed to identify PAMIs for cholera elimination?**

a) Presence of factors increasing the risk of onset of a cholera outbreak

b) Occurrence of confirmed cholera outbreak in recent years

c) Level of access to safely managed drinking water below the target of the sustainable development goals

d) Presence of factors increasing the risk of introduction of cholera, onset of a cholera outbreak, or spread of a cholera outbreak

Question 3

What is the objective of the stakeholder validation for PAMI identification?

a) Stakeholder validation of the distribution of resources across all regions for eliminating cholera

b) Stakeholder decision on a threshold for the vulnerability index

c) Stakeholder validation of preparedness plans for all cholera prevention and control pillars

▶ **What is the objective of the stakeholder validation for PAMI identification?**

a) Stakeholders validation of the distribution of resources across all regions for eliminating cholera

b) **Stakeholders decision on a threshold for the vulnerability index**

c) Stakeholders validation of preparedness plans for all cholera prevention and control pillars