

Identification of PAMIs for cholera elimination

Transcript of online course

MODULE 1

GTFCC Method

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Welcome to Module 1 of the GTFCC online course on the identification of PAMIs for cholera elimination.

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In this module, we will walk you through the GTFCC method to identify PAMIs for cholera elimination.

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After completing this module, you will be able to:

- Understand how the vulnerability index is calculated;
- Understand how the vulnerability index guides the decision-making on PAMIs;
- Explain how the final list of PAMIs is determined at the stakeholder validation;
- Describe the next steps following the stakeholder validation.

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The identification of PAMIs for cholera elimination is for countries where in recent years there has been no to low cholera transmission.

As a guiding principle, these are countries where less than 5% of the geographic units reported cholera over the past five years.

In these countries, the identification of PAMIs is to effectively guide the spatial targeting of an NCP to eliminate cholera.

Countries with no to low cholera transmission remain at risk for cholera reemergence if vulnerabilities for cholera persist. Therefore, implementing an NCP for cholera elimination is essential to eliminate cholera as a threat to public health in a sustainable manner.

Other countries, meaning countries where more than 5% of the geographic units reported cholera over the past five years, should instead identify PAMIs for cholera control in order to guide the spatial targeting of an NCP to control cholera. If this corresponds to your country's situation, we encourage you to go to the dedicated GTFCC online course.

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In a nutshell, identifying PAMIs for cholera elimination is about identifying geographic units that are the most vulnerable to the reemergence of cholera outbreaks..

There are two main phases to identify PAMIs for cholera elimination.

The first phase is driven by the data. At this phase, all geographic units of the country are scored according to a numeric vulnerability index.

Calculating this index aims to guide objective decision-making in order to ensure that PAMIs for cholera elimination are indeed the geographic units which are most vulnerable to cholera reemergence.

The second phase is the actual decision-making on PAMIs.

Decision making on the list of PAMIs is achieved by consensus among country stakeholders representing various sectors, different levels and multiple organizations.

These stakeholders decide together, by consensus, on a threshold for the vulnerability index calculated at the first phase.

All geographic units where cholera outbreaks were reported in recent years as well as those with a vulnerability index above this threshold are then PAMIs for elimination.

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Let's dive in the data driven phase leading to the calculation of the vulnerability index.

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The vulnerability to cholera reemergence is assessed taking into account two dimensions, the occurrence of confirmed cholera outbreaks in recent years, considering at least the past 5 years, and the presence of vulnerability factors associated with an increased risk of cholera outbreaks.

Vulnerability to cholera reemergence is assessed for each geographic unit of a country.

The geographic level of this assessment is the geographic level at which multisectoral interventions against cholera will be implemented in the NCP. The corresponding level is country specific. This means that each country determines the most appropriate geographic level to coordinate the implementation of targeted multisectoral interventions against cholera.

Most often, countries consider administrative level 2 or administrative level 3, however different geographic levels may also be considered.

Let's see how the list of PAMIs for cholera elimination is established taking into account these two dimensions of vulnerability.

By default, all geographic units where confirmed cholera outbreaks were reported in the past 5 years are PAMIs for elimination. In countries meeting the conditions to identify PAMIs for elimination, only a few geographic units will be PAMIs based on this criterion.

Therefore, in addition, all geographic units that have a vulnerability index above a country-specific threshold are also PAMIs for elimination.

Other geographic units are not PAMIs.

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By default, geographic units where a confirmed cholera outbreak was reported in recent years are PAMIs for elimination. This is because de facto the recent occurrence of a confirmed cholera outbreak demonstrates high vulnerability to cholera.

There has been a confirmed cholera outbreak in a geographic unit if there has been at least one locally acquired confirmed cholera case reported in this geographic unit.

A locally acquired cholera case is a case who was infected in the geographic unit considered. This is by opposition to an imported cholera case who was infected outside of the geographic unit considered.

To identify PAMIs for elimination, the occurrence of confirmed outbreaks is assessed in each geographic unit for at least the past 5 years, using retrospective surveillance data.

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To achieve sustainable cholera elimination, geographic units where confirmed cholera outbreaks were not reported in recent years but which are assessed as highly vulnerable to cholera are also PAMIs for elimination.

Vulnerability to cholera is captured through the number of vulnerability factors present in a geographic unit, as reflected in the vulnerability index.

A vulnerability factor is a factor which may increase the risk of introduction of cholera, or onset of a cholera outbreak, or spread of a cholera outbreak.

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To identify vulnerability factors to be considered in the PAMI analysis, countries are invited to consider the indicative list of generic vulnerability factors developed by the GTFCC.

These factors are considered generic because there are expected to be relevant in most countries. As a result, it is recommended to consider all the generic vulnerability factors to identify PAMIs for elimination, except if there are solid justifications to consider that any of these generic factors is not relevant in a country-specific context.

In addition, in some countries, additional vulnerability factors not included in the indicative list may also be associated with an increased risk of cholera outbreaks in the country-specific context. If so, they should also be considered in the PAMI analysis. As a result, the GTFCC indicative list can be customized and supplemented with additional vulnerability factors as relevant in the country-specific context.

We are now going to walk you through the generic vulnerability factors included in the GTFCC indicative list.

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Generic vulnerability factors include the occurrence of any imported cholera case in recent years. The presence of this factor demonstrates vulnerability to cholera introduction.

Then is being adjacent to frequently cholera-affected areas in a neighboring country or being adjacent to a PAMI in a neighboring country. This factor is associated with an increased risk of cholera introduction.

Next is being located along major travel routes with transportation hubs. This factor can increase both the risk of cholera introduction and the risk of spread of a cholera outbreak.

Hosting major population gatherings can also be associated with an increased risk of cholera introduction. For example, population gatherings might be religious or pilgrimage gatherings or nomadic or pastoralist population gatherings.

High population density or overcrowded settings such as for example urban slums, refugees camps or Internal Displaced People camps may be at higher risk of onset or spread of a cholera outbreak.

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Geographic units with high-risk populations, for example seasonal workers, fishermen or miners in informal settlements may be at higher risk of onset or spread of a cholera outbreak.

Hard-to-access populations live in an area which is not regularly accessible to health services and which have an increased risk of onset of an outbreak, including a cholera outbreak.

Geographic units where vaccination against cholera was implemented more than 3 years ago may remain at risk, especially if concomitant to OCV, there have not been significant WASH improvements.

Extreme climate and weather conditions, for example droughts or floods, may be associated with an increased risk of cholera transmission.

Complex humanitarian emergencies might hamper surveillance and response capacities which may result in an increased risk of outbreak, including a cholera outbreak.

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Lastly, suboptimal WASH levels are well known cholera vulnerability factors.

The use of unimproved water sources or of surface water; the use of unimproved sanitation facilities or open defecation; or the absence of handwashing facility on premises are associated with increased vulnerability to cholera.

We have now gone through all the generic vulnerability factors of the GTFCC indicative list.

Building on the indicative list of generic vulnerability factors, country stakeholders consolidate the list of vulnerability factors to be considered in their PAMI analysis, and identify criteria to assess the presence or absence of each factor at the geographic unit level.

In particular, stakeholders may assess whether in addition to the generic vulnerability factors of the indicative list, any additional vulnerability factor is of particular relevance in their local context.

This would be any factor associated in the country-specific context with an increased risk of introduction of cholera, onset of a cholera outbreak, or spread of a cholera outbreak. Additional vulnerability factors may be identified with a scoping review or expert consultations.

Once the list of vulnerability factors has been consolidated, it is necessary to define a measurable vulnerability indicator associated with a data source to assess the presence or absence of each factor.

Regarding the time period considered to assess vulnerability:

- Epidemiological indicators (for example the occurrence of imported cholera cases) are assessed for the past 5 years.
- All other indicators are assessed with the most up-to-date data source available.

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Let's illustrate the definition of measurable vulnerability indicators with a few examples. These are fictive examples; relevant measurable vulnerability indicators must be adapted in each country.

High population density is a vulnerability factor. However, if it is not better defined with a measurable vulnerability indicator, it is not possible to assess in an objective and reproductible manner whether there is high population density in a geographic unit. This is why an indicator that is measurable must be defined. For example, an indicator to measure high population density may be a number of inhabitants greater than 1 000 inhabitants per square kilometer. This is measurable, and can be assessed in an objective and reproductible manner.

Following a similar principle, to measure whether the vulnerability factor "at risk populations" is present in a geographic unit, the following indicator might be considered: percentage of internally displaced people (IDP) equal or above 5% of the population in a geographic unit.

As a last example, the vulnerability factor "unimproved water" might be measured as above 30% of the population of the geographic unit using unimproved service level or surface water or above 15% of the population of the geographic unit using surface water.

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Measurable vulnerability indicators are used to assess the presence or the absence of each vulnerability factor in each geographic unit, and to score it.

If a vulnerability factor is assessed as present in a geographic unit, the score is 1 point.

If a vulnerability factor is assessed as absent in a geographic unit, the score is 0.

Once the presence or absence of all vulnerability factors has been scored in all geographic units, the vulnerability index can be calculated.

The vulnerability index is the sum of the scores of all vulnerability factors. It is calculated for each geographic unit.

By default, all vulnerability factors have the same weight in this sum. However, if justified in the countryspecific context, setting different weights may be considered.

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Here is an example to illustrate the calculation of the vulnerability index.

Let's imagine a geographic unit where no cholera outbreak was reported in the last 5 years.

In this geographic unit, two vulnerability factors were assessed as absent, and 3 vulnerability factors were assessed as present.

The vulnerability index is 3, this corresponds to the number of vulnerability factors present in this geographic unit.

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We have now gone through all the steps for the calculation of the vulnerability index.

It is important for you to understand how the vulnerability index is calculated, however, you will not have to actually perform these calculations yourself. They are all automatized in a GTFCC PAMI Excel tool.

You will learn more about this tool in the next modules of this course.

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This completes the PAMI data driven phase. We will now look into the decision-making phase.

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Decision making on PAMIs is achieved by consensus among multiple country stakeholders taking into account the cholera situation in recent years and the vulnerability index.

To determine the list of PAMIs, first if there are any missing data, stakeholders complement the assessment of the presence or absence of vulnerability factors. Then, they decide on a vulnerability index threshold.

You will learn more about how to organize a successful PAMI stakeholder validation in Module 4 of this course.

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The vulnerability index is critical to guide decision making on PAMIs. A vulnerability index threshold is determined by consensus, and all geographic units which have a vulnerability index above the selected

threshold are PAMIs. This is in addition to geographic units where cholera outbreaks were reported in recent years which by default are always PAMIs.

To decide on the vulnerability index threshold, stakeholders must balance both the feasibility and the impact of the NCP.

If the vulnerability index threshold is set low, many geographic units will be PAMIs. In that situation, the potential impact of the NCP may be high, however, the feasibility of implementing multisectoral interventions in PAMIs may be challenging.

On the other hand, if the vulnerability index threshold is set high, very few geographic units will be PAMIs. In that situation, the feasibility of the NCP may be high, however the potential impact of the NCP may be low.

Overall, setting a threshold for the index is about finding the right balance between feasibility and impact.

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Once country stakeholders have reached a consensus on the list of PAMIs, the next steps are to document PAMI identification and to go through an external review.

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PAMI identification should be documented in a report to describe the method used and the outcomes as well as the decisions made and their justification. This is essential to ensure the traceability of PAMI identification and for future reference.

To prepare a comprehensive report on PAMI identification, we encourage you to follow the GTFCC template report.

You will learn more about how to document PAMI identification in Module 5 of this course.

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The GTFCC performs independent technical reviews of PAMI identification.

These reviews represent an opportunity for countries to receive independent technical feedback and practical advice and recommendations as needed to help optimize the spatial targeting of their ncp.

GTFCC PAMI reviews are offered to all countries and are mandatory for countries which plan to request OCV for preventive use or to request a GTFCC endorsement of their NCP.

You will learn more about GTFCC PAMI reviews in Module 5 of this course.

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As we wrap up this module, here are the important points to remember.

The identification of PAMIs for cholera elimination is for countries where less than 5% of the geographic units reported cholera over the past 5 years.

At the first phase of PAMI identification, data on the occurrence of cholera outbreaks in recent years are compiled. Vulnerability factors which increase the risk of cholera introduction, onset of a cholera outbreak, or spread of a cholera outbreak in the country-specific context are identified. The presence or absence of each vulnerability factor in each geographic unit is then assessed with a measurable indicator and combined into a vulnerability index.

The second phase is to decide on the list of PAMIs, taking into account the occurrence of cholera outbreaks in recent years and the vulnerability index. Country stakeholders agree by consensus on a vulnerability index threshold balancing the feasibility and the potential impact of the NCP. By default, all geographic units where cholera outbreaks occurred in recent years are PAMIs for elimination. All geographic units that have a vulnerability index above the selected threshold are also PAMIs for elimination.

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Before moving on to the next module, we encourage you to take a short quiz. There are three questions in this quiz.

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Question 1. Which geographic units are always considered PAMIs for cholera elimination?

a) Geographic units with Internally Displaced People (IDPs).

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.

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The correct answer is b. By default, geographic units where a confirmed cholera outbreak was reported in recent years are always PAMIs for elimination regardless of their vulnerability index.

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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.

The correct answer is d. To identify PAMIs for cholera elimination, vulnerability to cholera is assessed with presence of factors increasing the risk of introduction of cholera, onset of a cholera outbreak, or spread of a cholera outbreak.

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Question 3. This is the last question. 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.

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The correct answer is b. At the stakeholder validation, stakeholders decide on a vulnerability index threshold.

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We have now completed this module.