

# PAMIs for cholera elimination

## Module 3



GLOBAL TASK FORCE ON  
**CHOLERA CONTROL**



# PAMIs for cholera elimination

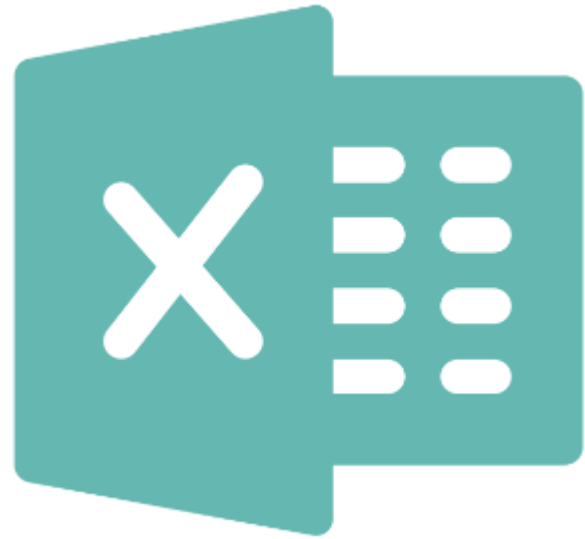
**PAMI**  
**Excel tool**



# What will you learn?

- **Structure and main functions** of the PAMI Excel tool
- **How to upload data** in the PAMI Excel tool
- **How to process calculations** in the PAMI Excel tool
- **How to interpret the outputs** generated by the PAMI Excel tool

# PAMI Excel tool



- ➔ **Automatizes all calculations** for the identification of PAMIs
- ➔ **Generates summary outputs** for discussion at the **stakeholder validation**

# Getting ready

## Get ready to manipulate the PAMI Excel tool

### ► Make sure to use Windows

- The PAMI Excel tool operates under **Windows operating system**

#### 1. Get the PAMI Excel Tool



Identification Tool



#### 2. Get a dataset to manipulate



Training dataset



#### 3. Have the user guide on hand



User Guide



<https://tinyurl.com/PAMIElimination>





Explore the  
PAMI Excel tool



# Overview of the PAMI Excel tool

## Sheet Information

### “Read me”

- Provides access to reference documents
- Provides **tips** for using the tool



Information

—> Data input table

—> Factor selection

R.1| Vulnera. index calculation

R.2| Vulnera. index summary

R.3| Missing data overview

R.4| Table PAMIs export

# Overview of the PAMI Excel tool

## Sheet Data input table

This is **where to upload your data**

### Reminder from Module 2

Data should be formatted in accordance with the data model template before upload



Information	—> Data input table	—> Factor selection	R.1  Vulnera. index calculation	R.2  Vulnera. index summary	R.3  Missing data overview	R.4  Table PAMIs export
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# Overview of the PAMI Excel tool

## Sheet Factor selection

This is **where to set the parameters for the calculations**



Information	—> Data input table	—> Factor selection	R.1  Vulnera. index calculation	R.2  Vulnera. index summary	R.3  Missing data overview	R.4  Table PAMIs export
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# Overview of the PAMI Excel tool

## Sheet R.1 | Vulnera. index calculation

This is **where all calculations are performed**



Information	—> Data input table	—> Factor selection	R.1  Vulnera. index calculation	R.2  Vulnera. index summary	R.3  Missing data overview	R.4  Table PAMIs export
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# Overview of the PAMI Excel tool

## Sheets R.2 to R.4


This is **where to find the outputs**

- Each sheet displays different outputs to:
  - interpret calculations
  - inform decision-making on PAMIs



Information	—> Data input table	—> Factor selection	R.1  Vulnera. index calculation	R.2  Vulnera. index summary	R.3  Missing data overview	R.4  Table PAMIs export
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A man in a white lab coat is seated at a desk in a clinical or office environment, working on a computer. He is looking towards the camera with a slight smile. The computer monitor displays a spreadsheet application with a yellow header row. In the background, another person is visible working at a desk, and there are framed pictures on the wall. The scene is dimly lit, with the primary light source being the computer monitor.

Upload data  
in the PAMI  
Excel tool



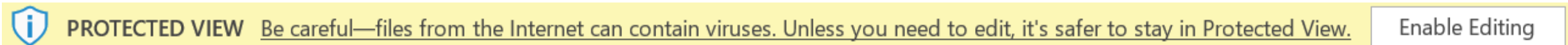
# Prepare for the upload

- ➡ Make sure your data is formatted in accordance with the **PAMI data model template**

 **Learn about the data model template in Module 2**

- ➡ Save a **local copy** of the PAMI Excel tool

- ➡ If there is a "Protected View" banner, click **"Enable Editing"**



## Upload the data

## 1 Copy your dataset

► In your **dataset file**

- Select the entire data range (ctrl +A)
- Copy it (ctrl + C)

[illegible]

## 2 Paste your dataset in the tool

➡ In the **PAMI Excel tool**

- 1 In the sheet Data input table
- 2 In the grey Cell A1
- 3 Paste the data as values only

The screenshot shows an Excel spreadsheet with columns A through E and rows 1 through 27. Cell A1 contains the text "Paste data here (as values only)". A red circle with the number "1" is placed over the bottom-left area of the spreadsheet. A red circle with the number "2" is placed over the top-right area of the spreadsheet. A red circle with the number "3" is placed over the "Paste" menu options. The "Paste" menu is open, showing options like "Paste", "Paste Values", and "Paste Special...". The "Paste Values" option is highlighted.



# Set parameters for the calculations

## Sheet Factor selection

### 3 Define measurable indicators

- Record the definition of:
  - Measurable vulnerability indicators
  - Additional vulnerability factors (if applicable)

### 4 Select the vulnerability factors to be included

- If any generic vulnerability factor is not relevant, **exclude it**
- If any additional vulnerability factor is considered, **include it**

### 5 Optionnally, set weights

- If justified in the country-specific context, adjust the weights

# Include all geo units

## 6 Include all geo units in the calculations

- ➡ Check the number of rows with data in the sheet **Data input table**
- ➡ In the sheet **R.1| Vulnera. index calculation** **select the data in the first row**
- ➡ **Drag down the selection** until the number of rows with data in the sheet R.1 is the same as the number of rows with data in the Data input table

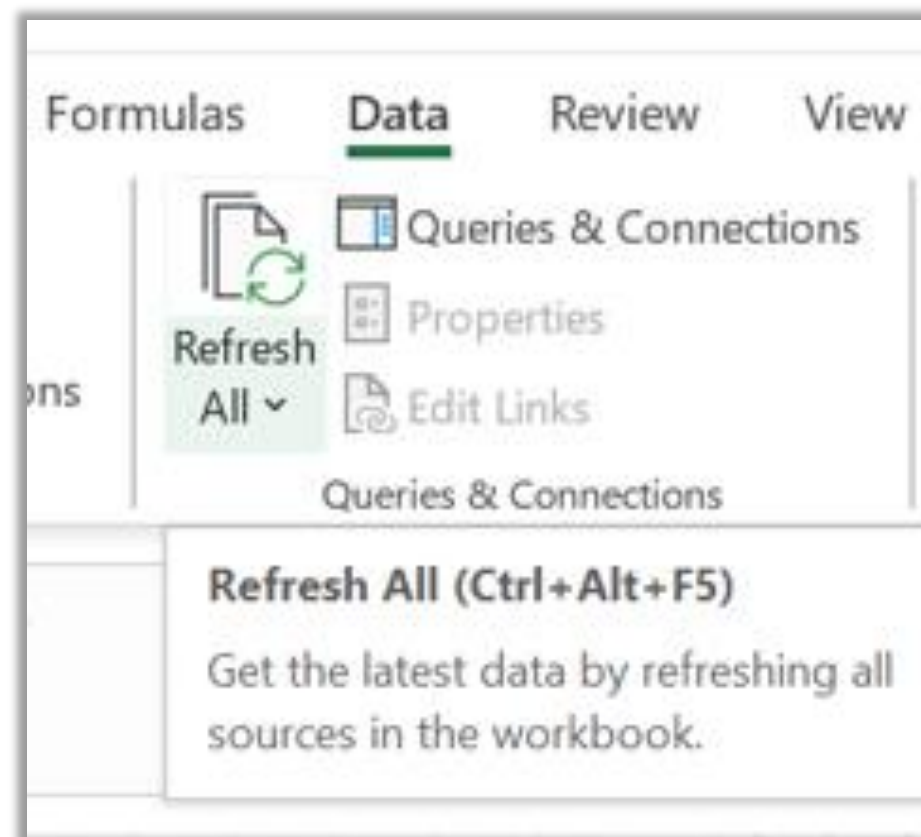




# Process the calculations

## 7 « Refresh » to launch the calculations

- ➡ Go to the Excel **Data** tab and click **Refresh All**



Go through  
the outputs

# What is in sheet R.1?

## Calculation sheet

All indicators to identify PAMIs are calculated in this sheet

### ► For each row (=each geo unit)

- Whether it is an **initial PAMI** due to the occurrence of cholera outbreaks
- Number of vulnerability factors with **missing value**
- **Vulnerability index**

	unique_id	admin_1	admin_2	pop	VF_01_chol_otbk	VF_02_chol_import	VF_03_chol_proximity	VF_04_mov_pathw	VF_05_pop_gathering	VF_06_overcrowded_set	VF_07_high_risk_pop	VF_08_hard_to_acc_risk_pop	VF_09_ocv	VF_10_climate_event	VF_11_comp_humanit_emerg	VF_12_unimprov_water	VF_13_unimprov_sanitat	VF_14_limited_hygien	VF_15_add_factor_1	VF_16_add_factor_2	VF_17_add_factor_3	VF_18_add_factor_4	Number_of_missing_v
id_005	admin_1_01	admin_2_005	64393	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Not_included	Not_included	Not_included	Not_included	0	0
id_013	admin_1_02	admin_2_013	121255	Yes	Yes	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No lot_included	lot_included	lot_included	lot_included	0	Initial PAMI
id_014	admin_1_02	admin_2_014	37086	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No lot_included	lot_included	lot_included	lot_included	0	0
id_015	admin_1_02	admin_2_015	164440	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No lot_included	lot_included	lot_included	lot_included	0	2
id_022	admin_1_02	admin_2_022	290397	No	No	Missing_value	No	No	No	No	No	No	No	No	No	No	Yes	lot_included	lot_included	lot_included	lot_included	1	1
id_025	admin_1_02	admin_2_025	253927	Yes	No	No	Yes	No	No	No	No	No	No	Yes	No	No	No	No lot_included	lot_included	lot_included	lot_included	0	Initial PAMI



# How to use Sheet R.1?

## ► Do not manipulate nor modify the sheet R.1

- Calculations in the sheet R1 are used as the source of data for calculating all outputs (sheets R2 to R4)
- Manipulations in the sheet R.1 may **interfere with the outputs**

## ► Use the sheet R.4 instead

- Sheet R.4 shows the same variables as sheet R.1
- To sort/manipulate/explore the variables displayed in the sheet R1, use the sheet R4

# What is in sheet R.2?

## Proxy on the feasibility of interventions in PAMIs

### 1 ➡ Initial PAMIs

- Due to the occurrence of cholera outbreaks in recent years

### ➡ PAMIs depending on vulnerability index

#### 2 Geo units

- # and % of geo units that are PAMIs

#### 3 Population

- # and % of population in geo units that are PAMIs

Vulnerability index value	Number of geographic units	Cum. number of geographic units	Rel. % of the num. of geographic units	Cum. % of the num. of geographic units	Total population	Rel. % of total population	Cum. % of total population
Initial PAMI	20	20	20.0%	20.0%	5,439,221	22.7%	22.7%
8	3	23	3.0%	23.0%	933,355	3.9%	26.6%
7	1	24	1.0%	24.0%	194,610	0.8%	27.4%
6	3	27	3.0%	27.0%	619,740	2.6%	30.0%
5	5	32	5.0%	32.0%	1,016,472	4.2%	34.2%
4	7	39	7.0%	39.0%	1,708,930	7.1%	41.3%
3	14	53	14.0%	53.0%	3,421,821	14.3%	55.6%
2	12	65	12.0%	65.0%	2,949,457	12.3%	67.9%
1	13	78	13.0%	78.0%	3,046,057	12.7%	80.6%
0	22	100	22.0%	100.0%	4,662,895	19.4%	100.0%
Grand Total	100		100.0%		23,992,558	100.00%	

# How to read sheet R.2?

## Illustration

Vulnerability index value	Number of geographic units	Cum. number of geographic units	Rel. % of the num. of geographic units	Cum. % of the num. of geographic units	Total population	Rel. % of total population	Cum. % of total population
Initial PAMI	20	20	20.0%	20.0%	5,439,221	22.7%	22.7%
8	3	23	3.0%	23.0%	933,355	3.9%	26.6%
7	1	24	1.0%	24.0%	194,610	0.8%	27.4%
6	3	27	3.0%	27.0%	619,740	2.6%	30.0%
5	5	32	5.0%	32.0%	1,016,472	4.2%	34.2%
4	7	39	7.0%	39.0%	1,708,930	7.1%	41.3%
3	14	53	14.0%	53.0%	3,421,821	14.3%	55.6%
2	12	65	12.0%	65.0%	2,949,457	12.3%	67.9%
1	13	78	13.0%	78.0%	3,046,057	12.7%	80.6%
0	22	100	22.0%	100.0%	4,662,895	19.4%	100.0%
Grand Total	100		100.0%		23,992,558	100.00%	

If the vulnerability index threshold is set to  $\geq 6$

- ➡ 27 geo units are PAMIs (accounting for 27% of the geo units)
- ➡ Population in PAMIs: 619,740 (30% of the population)



# How to use Sheet R.2?

Figures in the sheet R.2 are used to set the **vulnerability index threshold**

- ➡ **Explore and discuss** different threshold scenario at the stakeholder validation for setting the vulnerability index threshold
- ➡ Determine the **best balance** between feasibility and impact
- ➡ **Document** how the vulnerability index was selected in the report on PAMI identification

# What is in sheet R.3?

## Extent of missing data for each vulnerability factor

Vulnerability factors	# of geo units with missing data								
	Num. of observations				Relative percentage				
	Missing values	"No"	"Yes"	Total	Missing values	"No"	"Yes"	Total	
Confirmed cholera outbreak(s) over the analysis period	<div><div></div></div>	1	79	20	100	1.0%	79.0%	20.0%	100.0%
Confirmed cholera imported case(s) in the NCP operational geographic unit considered	<div><div></div></div>	0	68	32	100	0.0%	68.0%	32.0%	100.0%
Cross-border areas adjacent to frequently cholera-affected areas or identified PAMIs in neighbouring country(ies)	<div><div></div></div>	7	73	20	100	7.0%	73.0%	20.0%	100.0%
Location along major travel routes with transportation hubs	<div><div></div></div>	0	80	20	100	0.0%	80.0%	20.0%	100.0%
Major population gatherings	<div><div></div></div>	2	66	32	100	2.0%	66.0%	32.0%	100.0%
High population density locations or overcrowded settings	<div><div></div></div>	0	84	16	100	0.0%	84.0%	16.0%	100.0%
High-risk populations	<div><div></div></div>	2	66	32	100	2.0%	66.0%	32.0%	100.0%
Hard-to-access populations	<div><div></div></div>	1	3	6	100	1.0%	93.0%	6.0%	100.0%
Population that received oral cholera vaccine (OCV) more than three years ago	<div><div></div></div>	2	75	23	100	2.0%	75.0%	23.0%	100.0%
High-risk for extreme climate and weather conditions	<div><div></div></div>	4	83	13	100	4.0%	83.0%	13.0%	100.0%
Complex humanitarian emergency	<div><div></div></div>	0	73	27	100	0.0%	73.0%	27.0%	100.0%
Unimproved water	<div><div></div></div>	0	75	25	100	0.0%	75.0%	25.0%	100.0%
Unimproved sanitation	<div><div></div></div>	3	79	18	100	3.0%	79.0%	18.0%	100.0%
Limited access to hygiene	<div><div></div></div>	2	70	28	100	2.0%	70.0%	28.0%	100.0%
Additionnal country-specific cholera vulnerability factor (1)	<div><div></div></div>	0	0	0	0	.	.	.	.
Additionnal country-specific cholera vulnerability factor (2)	<div><div></div></div>	0	0	0	0	.	.	.	.
Additionnal country-specific cholera vulnerability factor (3)	<div><div></div></div>	0	0	0	0	.	.	.	.
Additionnal country-specific cholera vulnerability factor (4)	<div><div></div></div>	0	0	0	0	.	.	.	.

### Example

There is **1 geo unit** with missing value for **hard-to-access populations**

# How to use Sheet R.3?

Assess **data missingness** for each vulnerability factor

- ➡ Guide the discussions on missing data at the stakeholder validation
- ➡ **Remember:** all missing data should be filled



# What is in sheet R.4?

Content similar to Sheet R.1  
All indicators calculated to identify PAMIs

unique_id	admin_1	admin_2	pop	Vf_01_chol_otbk	Vf_02_chol_import	Vf_03_chol_proximity	Vf_04_mov_pathw	Vf_05_pop_gathering	Vf_06_overcrowded_set	Vf_07_high_risk_pop	Vf_08_hard_to_acc_risk_pop	Vf_09_ocv	Vf_10_climate_event	Vf_11_comp_humanit_emerg	Vf_12_unimprov_water	Vf_13_unimprov_sanitat	Vf_14_limited_hygien	Vf_15_add_factor_1	Vf_16_add_factor_2	Vf_17_add_factor_3	Vf_18_add_factor_4	number_of_missing_val
id_013	admin_1_02	admin_2_013	121255	Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_025	admin_1_02	admin_2_025	253927	Yes	No	No	Yes	No	No	No	No	No	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_038	admin_1_02	admin_2_038	283942	Yes	No	No	No	No	No	No	Yes	No	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_048	admin_1_03	admin_2_048	166885	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_067	admin_1_04	admin_2_067	122772	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_101	admin_1_06	admin_2_101	176034	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_153	admin_1_08	admin_2_153	294437	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_178	admin_1_11	admin_2_178	382985	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_181	admin_1_11	admin_2_181	199209	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_183	admin_1_11	admin_2_183	448663	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_190	admin_1_12	admin_2_190	156934	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_218	admin_1_14	admin_2_218	174623	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_224	admin_1_14	admin_2_224	206333	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_225	admin_1_14	admin_2_225	302607	Yes	Yes	No	No	Yes	No	Yes	No	No	No	No	Yes	missing_val	lot_include	lot_include	lot_include	lot_include	1	Initial PAMI
id_227	admin_1_14	admin_2_227	605105	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_250	admin_1_15	admin_2_250	161781	Yes	No	No	No	No	No	No	No	Yes	No	Yes	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_256	admin_1_15	admin_2_256	495540	Yes	Yes	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_277	admin_1_15	admin_2_277	200897	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_281	admin_1_17	admin_2_281	290025	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes	Yes	No	Yes	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_282	admin_1_17	admin_2_282	395267	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	Initial PAMI
id_051	admin_1_03	admin_2_051	369669	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	Yes	lot_include	lot_include	lot_include	lot_include	0	8
id_161	admin_1_09	admin_2_161	322114	No	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes	lot_include	lot_include	lot_include	lot_include	0	8
id_233	admin_1_14	admin_2_233	241572	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	lot_include	lot_include	lot_include	lot_include	0	8
id_155	admin_1_08	admin_2_155	194610	No	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	Yes	No	lot_include	lot_include	lot_include	lot_include	0	7
id_124	admin_1_07	admin_2_124	275489	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	missing_val	No	No	lot_include	lot_include	lot_include	lot_include	1	6
id_166	admin_1_09	admin_2_166	129388	No	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No	lot_include	lot_include	lot_include	lot_include	0	6
id_177	admin_1_11	admin_2_177	214863	No	No	No	No	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	lot_include	lot_include	lot_include	lot_include	0	6

# How to use Sheet R.4?

## ➡ Manipulate the data in the sheet R.4

⚙ For example, filter or sort the data by vulnerability index value or filter missing values

## ➡ Export a copy of the sheet R.4

This export can be used for:



- Importation in a **statistical software**
- Importation in a **GIS software** to map PAMIs

# Wrap up

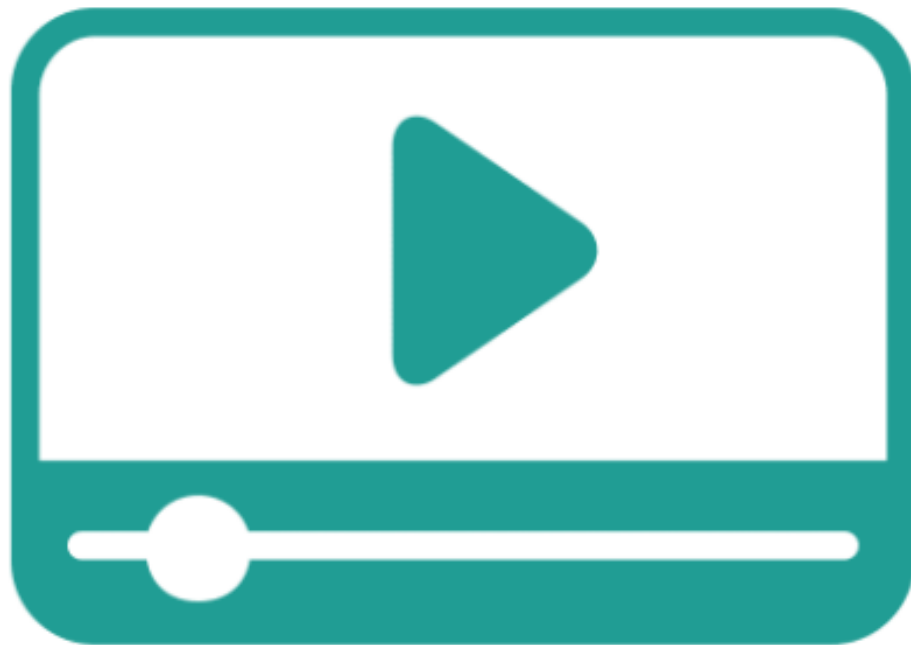
The PAMI Excel tool computes all calculations and generates the following outputs

- **Sheet R.2| Vulnera. index summary**
  - Summary figures on the geo units and population in PAMIs
  - Useful to set the vulnerability index threshold
- **Sheet R.3| Missing data overview**
  - Extent of missing values for each vulnerability factor
  - Useful to address missing data
  - All missing data must be filled before making any decision on PAMIs
- **Sheet R.4| Table PAMIs Export**
  - Summarizes all calculations
  - Useful for GIS mapping of PAMIs, additional analysis, etc



# Learn more

**Watch videos to see how to use the PAMI Excel tool**  
**<https://tinyurl.com/tutoexcelPAMIElimination>**



- **Get ready to use the PAMI Excel tool**
- **Upload data in the PAMI Excel tool**
- **Explore the outputs of the PAMI Excel tool**



# Practice

Practice using the PAMI Excel tool with an exercise

*Access the exercise*

<https://tinyurl.com/PAMleliminationPractice>



*Check your answers*

<https://tinyurl.com/PAMleliminationAnswers>



Takes about 15 minutes to complete

Together we can  
#Endcholera



GLOBAL TASK FORCE ON  
**CHOLERA CONTROL**