

# CRVS Monitoring Application User Guide

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## Table of Contents

Getting Started.....	3
Application Structure.....	3
Creating Your First Indicators Lists for Export.....	5
Step 1: Navigate to Selection card.....	5
Step 2: Use Filters to Narrow Your Selection.....	5
Step 3: Select Your Items.....	6
Step 4: Configuring your export.....	6
Step 5: Export Descriptions (Optional).....	7
Step 6: Finalizing Your Export.....	7
Understanding the Exported Excel Template (Data collection tool).....	8
Importing Your Data.....	9
Step 1: Upload Your Excel File.....	9
Step 2: Review Import Preview.....	9
Step 3: Execute the Import.....	9
Step 4: View Imported Data.....	9
Using the Dashboard.....	10
Tips for Effective Use.....	14
Troubleshooting.....	15

## Getting Started

Welcome to the CRVS Monitoring Application v1.1.

When you first launch the application, you'll see a welcome screen asking you to select your country from a searchable list of 200+ countries. Once you've made your selection and clicked "Start Application," you're ready to begin. This Application accompanies the *"Guidance for Civil Registration and Vital Statistics Performance Measurement and Data Quality Monitoring: A Framework for Effective Implementation"*. It helps country teams to:

- **Select** appropriate monitoring indicators
- **Generate** data-collection forms
- **Visualize** results in clear, shareable reports

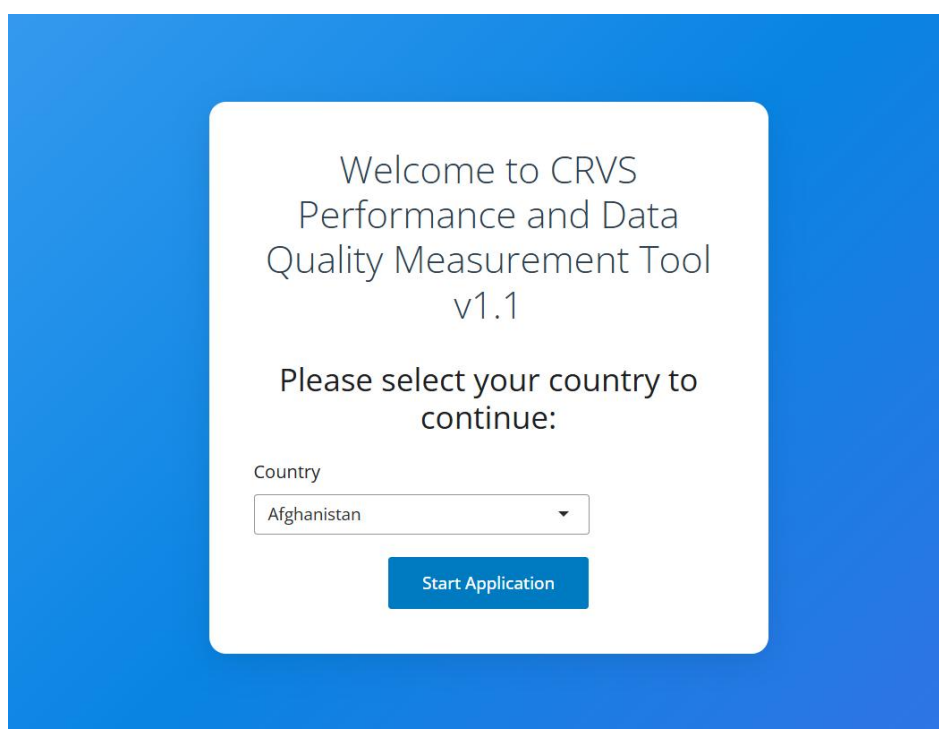


Figure 1 Country selection

## Application Structure

The application has two main functions accessible from the main menu:

### 1. Select CRVS monitoring indicators - Create the list of CRVS indicators

Use this section to select and export indicator templates for data entry. This is where you choose which indicators or milestones to include in your data collection.

### 2. Create data visualizations of the CRVS indicators - import data

After you've filled in your exported templates with actual data, use this section to import them back into the system. With this data you will be able to create dashboards and export them as a pdf.

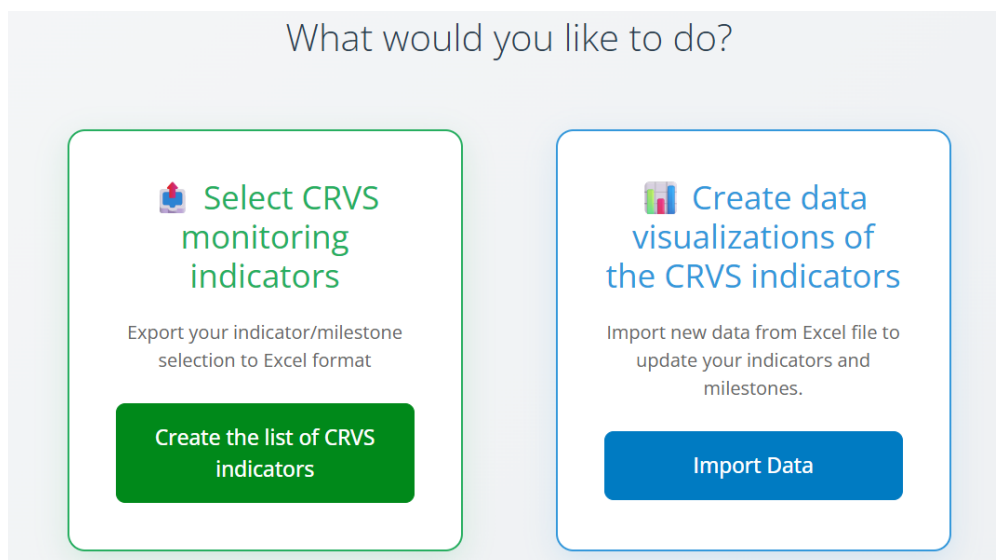


Figure 2 Initial task selection

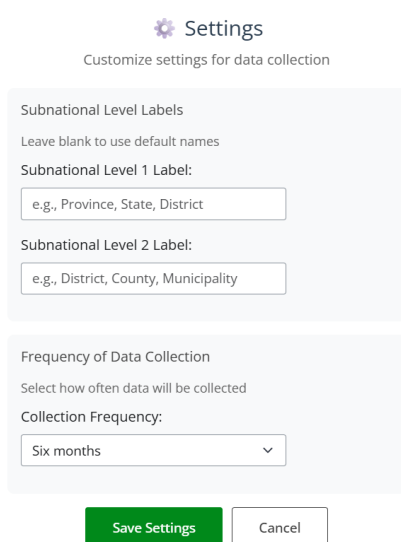


Figure 3 Settings country wide

In this page at the top right, you will also see the settings button where you can specify a few things that will be applied to the country you have selected. One of them is giving a label to your subnational level 1 (the one right below your national level) and the subnational level 2. Whether you call them Districts and Counties or States and Municipalities, you can specify it here.

Also, you can specify the frequency of your data collection, if you are not interested in only collecting data once a year (annually) but twice a year, you can select it here and it will apply to all indicators for your data collection.

## Creating Your First Indicators Lists for Export

Let's walk through selection of indicators and exporting them into templates, the most common starting point.

### Step 1: Navigate to Selection card

From the main menu, click on the "Select CRVS monitoring indicators" card.

You'll see a table showing all available indicators and milestones with their metadata:

- **Type:** Indicates whether it's an Indicator or Milestone
- **Name:** The full question or indicator name
- **Numerator:** The numerator element
- **Denominator:** The denominator element
- **Category:** Birth, Death, cause of death, Marriage, Not elsewhere classified.
- **CRVS Milestone:** The milestone category
- **Indicator Type:** Performance monitoring, data quality assurance
- **Sources:** Indicator source
- **Priority:** Recommended priority tagged as Core or Supplemental

Type	Name	Numerator	Denominator	Category	CRVS Milestone	Indicator Type	Sources	Priority	
<input type="checkbox"/>	Indicator	Percentage of deaths notified to Civil Registration within the time limit prescribed under the law during reference time period	Number of death notified within time limit prescribed by law, during reference time period	Total number of death notifications to Civil Registration, during reference time period	Death	Notification/declaration	Performance monitoring and improvement	CRVS-APAL Vital Strategies	Core
<input type="checkbox"/>	Indicator	Percentage of births notified to Civil Registration within the time limit prescribed under the law during reference time period	Number of birth notified within time limit prescribed by law, during reference time period	Total number of birth notifications to Civil Registration, during reference time period	Birth	Notification/declaration	Performance monitoring and improvement	CRVS-APAL Vital Strategies	Core
<input type="checkbox"/>	Indicator	Percentage of marriages notified within the time limit prescribed under the law during reference time period	Number of marriage notified within time limit prescribed by law, during reference time period	Total number of marriage notifications to CR, during reference time period	Marriage (Divorce)	Notification/declaration	Performance monitoring and improvement	CRVS-APAL	Core
<input type="checkbox"/>	Indicator	Percentage of deaths notified to Civil Registration out of the expected number of death in a calendar year	Number of deaths notified to Civil registration in a calendar year	Estimated number of deaths	Death	Notification/declaration	Performance monitoring and improvement	SwissTPH Vital Strategies	Supplemental
<input type="checkbox"/>	Indicator	Percentage of birth notified to Civil Registration out of the expected number of birth in a calendar year	Number of birth notified to Civil registration in a calendar year	Estimated number of births	Birth	Notification/declaration	Performance monitoring and improvement	SwissTPH, WHO, Vital Strategies	Supplemental
<input type="checkbox"/>	Indicator	Percent of death occurring in the health sector, notified to Civil Registration during reference time period	Number of deaths notified by health sector in hospitals, health facilities, etc. to the Civil Registration	Total number of deaths recorded by health sector during reference time period	Death	Notification/declaration	Performance monitoring and improvement	DHS Vital Strategies	Core
<input type="checkbox"/>	Indicator	Percent of birth occurring in health sector notified to Civil Registration during reference time period	Number of health facility birth notified to Civil Registration	Total number of births recorded by health sector during reference time period	Birth	Notification/declaration	Performance monitoring and improvement	DHS Vital Strategies	Core
<input type="checkbox"/>	Indicator	Percent of birth occurring in health facilities notified to Civil Registration within time limit prescribed by law during reference time period	Number of health facility birth notified to Civil Registration within time limit prescribed by law during reference time period	Total number of births recorded by health sector during reference time period	Birth	Notification/declaration	Performance monitoring and improvement	Vital Strategies	Supplemental
<input type="checkbox"/>	Indicator	Percent of deaths recorded by the Medical Legal Death Investigation system, notified to Civil Registration during reference time period	Number of MLDI deaths notified to Civil Registration	Total number of deaths subject to MLDI during reference time period	Death	Notification/declaration	Performance monitoring and improvement	Vital Strategies	Core
<input type="checkbox"/>	Indicator	Average number of days between death and notification during reference time period	Sum of days between death occurrence and notification for all death	Total number of death notifications during reference time period	Death	Notification/declaration	Performance monitoring and improvement	SwissTPH	Supplemental

Figure 4 Indicator / Milestone list selection

### Step 2: Use Filters to Narrow Your Selection

Click "Toggle Filters" to expand the filter panel. The filters let you quickly find indicators based on:

- **Categories** (Birth, Death, cause of death, Marriage, Not elsewhere classified)
- **Level of Results** (Input, Output, Process, Strategic outcome)
- **CRVS Milestone** (Medical Certification, Notification/declaration, Registration)
- **Indicator Type** (Data quality assurance, Performance monitoring)
- **Perspective** (Demand/Supply)
- **Priority** (Core, Supplemental)

Click on any filter tag to toggle it on or off. Selected filters are highlighted in blue. You can apply multiple filters at once.

Filters work in combination (AND logic between categories), so selecting "Death" under Category and "Core" under Priority shows only death-related indicators marked as core.

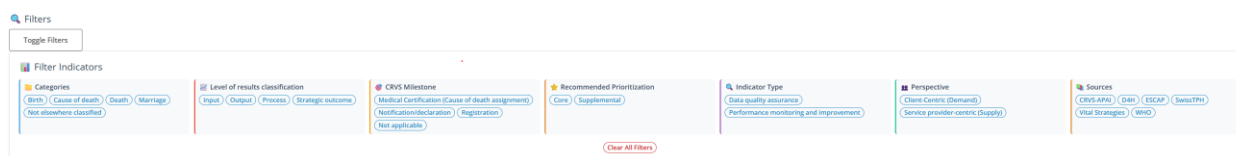


Figure 5 Filter options

### Step 3: Select Your Items

After filtering, you can:

- **Individual selection:** Click the checkbox next to each indicator you want
- **Select All:** Click the "Select All" button to select everything currently visible
- **Clear All:** Click "Clear All" to deselect everything
- **Save Selections:** Click "Save Selections" to keep your current picks while you continue filtering.

The selection counter at the top shows how many items you've selected out of the total filtered results.

**Important workflow note:** Select items, click "Save Selections," then continue filtering to narrow down further. Your saved selections persist even when you apply new filters. This lets you build your collection gradually.

### Step 4: Configuring your export

Once you're happy with your selection, click the blue "Continue Export" button at the bottom of the page. This takes you to the export confirmation screen where you'll configure your export.

The export confirmation page shows your selected items and allows you to customize several aspects of the exported file.

### Reviewing Your Selection

The confirmation page displays the same metadata columns as the selection table, giving you a final chance to review what will be exported.

**Export Confirmation**  
You have selected 5 items for export. Please review your selection below.

Type	Name	Numerator	Denominator	Category	CRVS Milestone	Indicator Type	Priority
Indicator	Percentage of deaths notified to Civil Registration within the time limit prescribed under the law during reference time period	Number of death notified within time limit prescribed by law, during reference time period	Total number of death notifications to Civil Registration, during reference time period	Death	Notification/declaration	Performance monitoring and improvement	Core
Indicator	Percentage of births notified to Civil Registration within the time limit prescribed under the law during reference time period	Number of birth notified within time limit prescribed by law, during reference time period	Total number of birth notifications to Civil Registration, during reference time period	Birth	Notification/declaration	Performance monitoring and improvement	Core
Indicator	Percentage of marriages notified within the time limit prescribed under the law, during reference time period	Number of marriage notified within time limit prescribed by law, during reference time period	Total number of marriage notifications to CR, during reference time period	Marriage /Divorce	Notification/declaration	Performance monitoring and improvement	Core
Indicator	Percentage of deaths notified to Civil Registration out of the expected number of death in a calendar year	Number of deaths notified to Civil registration in a calendar year	Estimated number of deaths	Death	Notification/declaration	Performance monitoring and improvement	Supplemental
Indicator	Percentage of birth notified to Civil Registration out of the expected number of birth in a calendar year	Number of birth notified to Civil registration in a calendar year	Estimated number of births	Birth	Notification/declaration	Performance monitoring and improvement	Supplemental

Figure 6 Export confirmation

### Configuring Disaggregation

Use the "Disaggregation by sex" option if you want your exported template to include separate columns for male, female, and other categories. This option will be seen if an indicator was selected that supports disaggregation by sex and will create additional numerator and denominator fields for each sex category.

### Setting Up Subnational Structure

You have three options for subnational disaggregation:

1. **No Subnational:** Export the national-level template
2. **Subnational level 1 only:** Disaggregate by one administrative level (provinces, regions, etc.)
3. **Subnational level 1 and Subnational level 2:** Disaggregate by two administrative levels (provinces and districts, etc.)

If you choose SN1 or SN1+SN2:


- **Input the number of areas** for each subnational level (e.g., "5" for 5 provinces)
- **Customize region names** by clicking the "  Customize Region Names" button to give meaningful names instead of generic placeholders like "Region\_1"

Figure 7 Region name customization

### Selecting Years

A row of year buttons (2015-2030) lets you choose which years to include in your export. The system will create rows for each selected year, for each indicator, for each region—perfect for comprehensive datasets.

- Click individual years to toggle them on or off
- Use "Select All Years" to include all available years
- Use "Clear All Years" to deselect everything
- Selected years are highlighted in blue

### Step 5: Export Descriptions (Optional)

Before final export, you can optionally export a separate documentation file:

- **Export Descriptions** button generates a Word or PDF document containing full definitions, methodologies, and metadata for your selected indicators and or milestones
- This provides detailed documentation for your selection

### Step 6: Finalizing Your Export

Click the green "Export Excel" button to generate and download your data collection file. The filename includes:

- Your country name
- Subnational structure (SN13SN2\_10)
- Year information

The file downloads automatically to your default downloads folder.

## Understanding the Exported Excel Template (Data collection tool)

When you open the exported Excel file, you'll see several sections:

### Header Information

The top rows contain metadata about your export configuration.

### Data Entry Area

The main section has columns for:

- Numerator Element and Denominator Element
- Their corresponding Value columns
- Disaggregation columns (if you selected sex disaggregation)
- Subnational columns, the actual subnational level 2 and to which subnational level 1 it belongs to

**Built-in formulas:** The Numerator Value and Denominator Value columns include automatic SUM formulas that calculate totals for each disaggregation category.

### How to Use the Template

1. **Fill in values:** Enter your actual data in the value columns
2. **For disaggregation:** Enter values for each sex category if applicable
3. **For subnational data:** Enter values for each administrative region
4. **Save and import:** Once complete, save the file and import it back using the Import Data section

## Importing Your Data

After filling in your exported template with actual data, return to the “Import Data” section.

### Step 1: Upload Your Excel File

Click "Choose Excel file" and select your completed template. The file must be an .xlsx or .xls format.

### Step 2: Review Import Preview

The system shows a preview of your data before importing. Check that:

- All rows loaded correctly
- Data types are correct
- No obvious errors are visible

If there are obvious errors in the file e.g. no year for a row or wrong milestone values apart from the accepted / expected ones, you will be prompted with this dialogue box where you will see the faulty row and where you can choose whether to still import it but the invalid rows will be rejected or you can abort the import, fix your file, and then import it.

#### Import Validation Issues (1 errors found)

The following rows have missing or invalid values:  
[CRVS\_Data]  
Row 11: 'Number of deaths registered with the civil registration authority in a calendar year' - Missing or invalid year  
Would you like to:

Abort and fix file

Import valid data only

Figure 8 Error handling

### Step 3: Execute the Import

Click "Import" to load your data into the database. You'll see a success notification with details about how many records were imported.

### Step 4: View Imported Data

After import, you'll see the imported data in a table below. This table includes Year and Value columns so you can see your actual collected data.

The screenshot shows the 'Import Data' dialog box with a 'Choose Excel File' section containing a 'Browse...' button and 'No file selected' text. Below it is a table titled 'Current Indicators & Milestones' with the following data:

Type	Name	Year	Value	Numerator Value	Denominator Value	Category	CRVS Milestone	Indicator Type	SubNational Level 1	SubNational Level 2
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	5000	nan	nan	Death	Registration	Performance monitoring and improvement	Basel	Basel-Stadt
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	1234	nan	nan	Death	Registration	Performance monitoring and improvement	Basel	Liestal
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	2543	nan	nan	Death	Registration	Performance monitoring and improvement	Basel	St. Gallen
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	6123	nan	nan	Death	Registration	Performance monitoring and improvement	Zurich	Andelfingen
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	965	nan	nan	Death	Registration	Performance monitoring and improvement	Zurich	Horgen
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	2343	nan	nan	Death	Registration	Performance monitoring and improvement	Zurich	Winterthur
Indicator	Number of deaths registered with the civil registration authority during reference time period	2023	6543	nan	nan	Death	Registration	Performance monitoring and improvement	Zurich	Zurich
Indicator	Number of deaths registered with the civil registration authority during reference time period	2024	9432	nan	nan	Death	Registration	Performance monitoring and improvement	Basel	Basel-Stadt

Figure 9 Import data page

## Using the Dashboard

Once you have imported data, the Dashboard section becomes available. This is where you can visualize your CRVS indicators and milestones.

### Navigating to Dashboard

From the Import Data page, click "  View Dashboard" to see your visualizations.

### Dashboard Controls

At the top of the dashboard, you'll find:

- **Year selector:** Filter charts to show specific years, if you have collected data on those years.
- **Sex disaggregation toggle:** Disaggregate based on the sex if available
- **Subnational disaggregation toggle:** Show subnational level 2 data if available
- **Export PDF:** Generate a PDF report of your dashboard

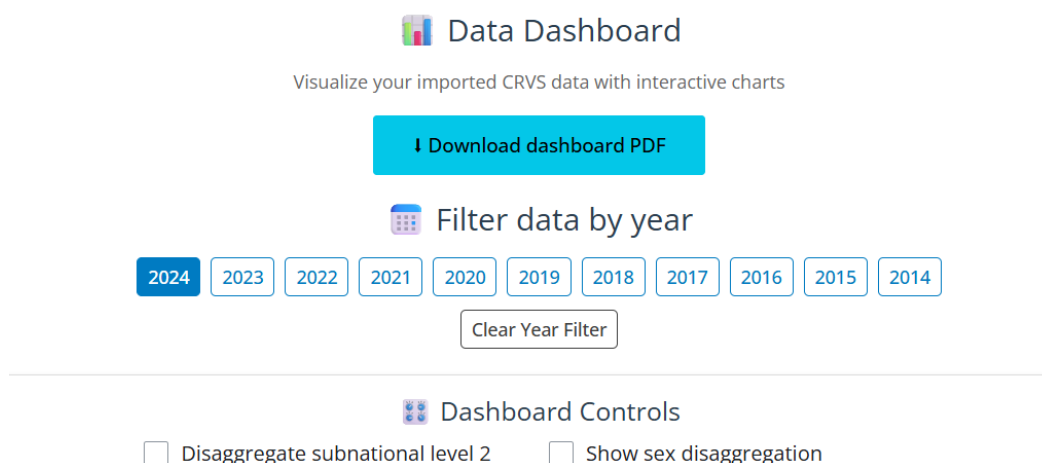


Figure 10 Dashboard controls

### Types of Visualizations

The dashboard automatically generates:

1. **Line charts** showing trends over time for each indicator
2. **Bar charts** comparing values across regions
3. **Pie charts** Showing percentage indicators if there is only one year of data collected or selected
4. **Milestone status charts** showing completion status with color coding or values if not categorised in the traffic lights categories (Yes, No, In progress / Partially)

Each chart is interactive where you can:

- Hover for detailed values
- Zoom and pan
- Toggle series on/off by clicking legend items
- Reset the chart by double clicking on it

Percentage of birth registered out of notified birth,during reference time period

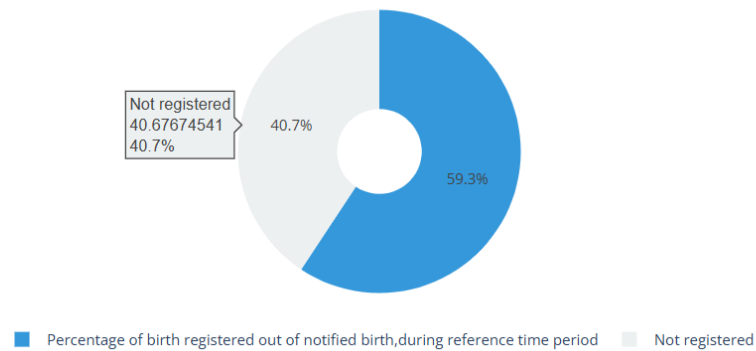


Figure 11 Pie chart

Hovering the pie chart section will give show you the value and the label again, you can also click on one of the legend squares if you want to not have that particular selection in your chart. This could be useful when disaggregating by gender:

Percentage of birth registered out of notified birth,during reference time period

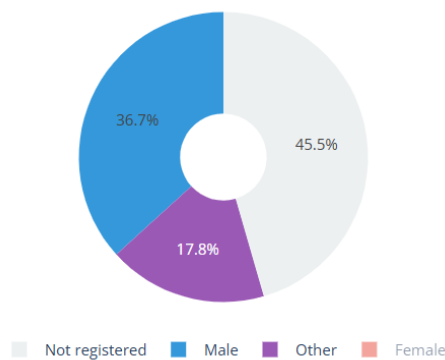


Figure 12 Pie chart with gender disaggregation

Here the Female option is disabled so that you see only the other three.

If you have more than one year of data selected for your percentage indicator, you will not be presented a pie chart but a line chart instead

Percentage of death registered within one year of occurrence out of the expected number of death

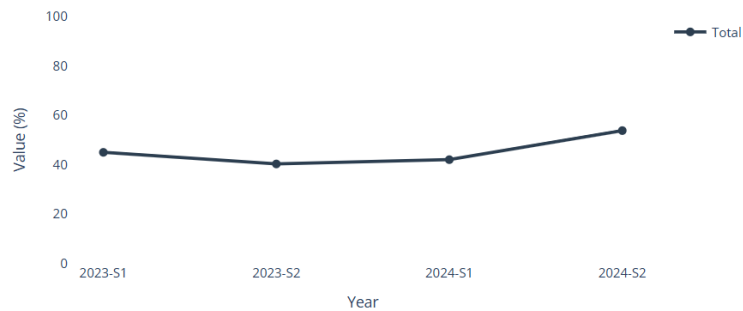


Figure 13 Percentage indicator with semester data

Here you can zoom in, if you have a lot of data by clicking on your dashboard and dragging it to your timeframe of choice. This will zoom in, in that window and the rest will be hidden. To go back to the overview dashboard, you can double click inside of the graph and it will reset.

Percentage of death registered within one year of occurrence out of the expected number of death

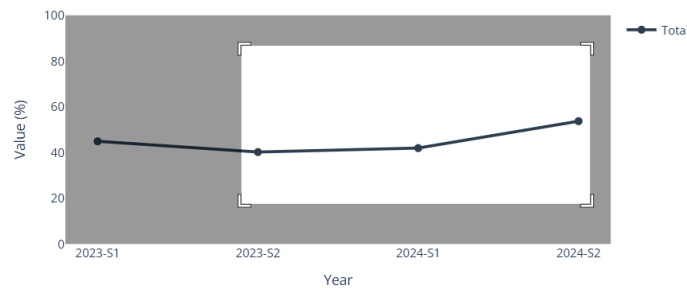


Figure 14 Zooming in a graph

You can also disaggregate by Subnational level, where you will be presented with a bar chart with the different Subnational level 1 and Subnational level 2. Like before you can deselect one subnational level if you want to focus on the other(s).

Percentage of death registered within one year of occurrence out of the expected number of death -

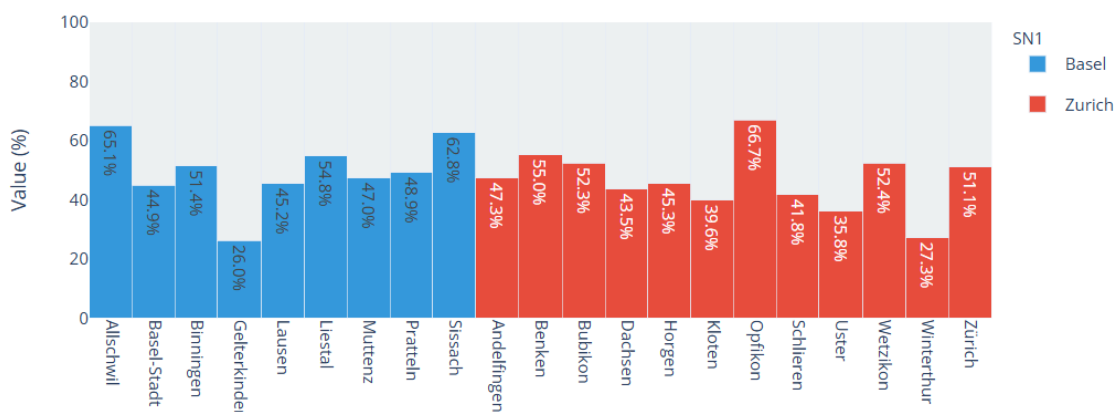


Figure 15 Disaggregation on Subnational level

Lastly you will have the visualization of your Milestones. There are three types of tables for your milestones:

- Traffic lights milestones only at national level
- Traffic lights milestones at subnational level
- Milestones with other choices / open / numeric values as a table

✔ Milestones (Yes/No) - Subnational Level 2

Milestone ID	Year	Basel-Stadt	Basel	Liestal	Sissach	Andelfingen
PM012	2024	Yes		No	In progress	No

Figure 16 Milestones with traffic lights

The traffic lights will highlight “Yes” in green, “No” in red and “Partially” or “In progress” in yellow.

And the last table you will see is the one with the remaining values

📊 Milestones (Other Values)

Milestone ID	Year	Basel-Stadt	Basel	Liestal	Sissach
PM041	2024	Meconium aspiration syndrome		Twin-to-twin transfusion syndrome	Maternal conditions (preeclampsia, diabetes, hypertension)

### Exporting Your Dashboard

Click "Export PDF" to generate a comprehensive PDF report including all charts visible in your page

## Tips for Effective Use

### Organizing Your Workflow

5. **Start broad:** Export all indicators, then filter by category later
6. **Batch processing:** You can export multiple templates for different categories (e.g., one for death registration, another for birth registration)

### Data Quality Best Practices

7. **Complete all required fields:** Indicators need both numerator and denominator data
8. **Consistent region naming:** Use the same region names across years for proper tracking
9. **Validate before import:** Check your Excel file for errors or missing values

### Working with Milestones

Milestones are different from indicators:

- They typically have Yes/No/In progress values rather than numerical measurements
- They don't support disaggregation by sex
- They focus on process completion rather than quantitative metrics
- The dashboard color-codes milestone status: green for Yes, red for No, yellow for In progress (or Partially)

## Troubleshooting

### Export Issues

**Problem:** Exported file is empty or missing data

**Solution:** Make sure you clicked "Save Selections" before continuing to export, and verify your filters aren't hiding all items

### Import Issues

**Problem:** Disaggregation data isn't showing correctly

**Solution:** Verify your Excel formulas are intact, and that you used the correct column names (e.g., `numerator_sex_male`)

### Dashboard Issues

**Problem:** No charts are appearing

**Solution:** Make sure you've imported data, not just templates. Charts require actual values.

**Problem:** Year filter isn't working

**Solution:** Navigate away and back to the dashboard

### General Issues

**Problem:** App isn't saving my data

**Solution:** Check that the app has write permissions in the AppData folder. The database is stored at `%LOCALAPPDATA%\CRVSAApp\crvs_data.db`

**Problem:** Can't find my country in the list

**Solution:** Use the search function in the country dropdown—type the first few letters of your country name