

2024

USER MANUAL

IMMUNIZATION
DASHBOARD

Europe & Central
Asia Region



UNICEF ECARO



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1. Dashboard Overview

Immunization is central to protecting children's health and well-being, allowing them to live free of many forms of disability and illness. The Europe and Central Asia region has developed an immunization dashboard that helps to get vaccination statistics from all the countries in Europe and Central Asia in one place and see them visually. The immunization dashboard gives compiled information for immunization coverage, vaccine-preventable disease outbreaks, new vaccine introduction, immunization supply chain, and vaccine demand status in Europe and Central Asia (ECA) region. The data reflected on the dashboard combines information from various data sources to create a one-stop dashboard that can be used for making meaningful decisions.

Purpose: This dashboard will provide a quick, easy-to-understand country-focused data overview of the immunization rates in Europe and Central Asia region. This will allow for more data-driven reporting and advocacy for strengthened immunization as a key public health intervention in the ECA region.

Key Objectives:

To provide program managers with a one-stop solution that derives data from various sources and collates them through interactive data visualizations. The program managers can use this data for

- Tracking key immunization indicators.
- Holding national and sub-national level review meetings based on the estimates.
- Showcase good performance by countries/districts by tracking relevant indicators.

Key Outputs:

- Analyzed data available for key immunization indicators:
 - Regional
 - Country
 - Local
- Country profiles can be downloaded in:
 - PowerPoint presentation - meetings
 - PDF files – advocacy, key messages
 - Excel – analyze the data

Using Country Reports:

- For **monitoring progress** and **evaluating the effectiveness** of immunization programs.
- Informing **policy decisions** and strategies to address gaps in immunization coverage.
- To **engage with stakeholders**- government officials, donors, and other stakeholders, providing evidence-based insights
- **Planning and designing** targeted interventions to improve immunization rates and address specific challenges.

Intended audience: EPI Managers in countries of Europe & Central Asia, UNICEF and WHO Country Office in Europe & Central Asia, Public health experts, Ministries of Health in Europe and Central Asia, UNICEF and WHO regional office, Gavi, reporters.

2. Dashboard Layout

The UNICEF Immunization Dashboard provides a comprehensive and interactive way to visualize immunization data across Europe and Central Asia. Here's a brief overview of its layout:

1. **Region-Specific Data (Pages 1-3):** These pages offer detailed information for the region, including
 - Regional Overview (Page 1): This page provides a high-level view of immunization data across the region.
 - Heatmap (Page 2): This page gives a comparative overview of key antigen indicators (DTP1, DTP3, MCV1, and MCV2) coverage across the countries over a decade period.
 - Scorecard (Page 3): This page provides a country's performance based on the composite score of eight indicators.
2. **Country-Specific Data (Pages 4-12):** These pages offer detailed information for each country, including:
 - Immunization Coverage (Page 4): National-level immunization coverage data.
 - Sub-National Coverage (Pages 5-6): Data on immunization coverage at sub-national levels.
 - Vaccine-Preventable Disease Outbreaks (Page 7): Information on outbreaks of diseases like Diphtheria, Measles, Rubella and Pertussis.
 - Immunization Equity Indicators (Pages 8-9): Indicators related to equity in immunization.
 - Immunization Supply Chain Data (Page 10): Data on the supply chain for immunization.
 - Financial Expenditure (Page 11): Information on financial expenditure on routine immunization vaccines.
 - Vaccine Demand Indicators (Page 12): Indicators related to vaccine demand.
3. **Data Sources (Page 13):** This page describes data sources that are used to develop the dashboard and calculation of the indicators.

The dashboard allows users to navigate different pages and select specific countries or years to view detailed data. It's a powerful tool for monitoring improvements and identifying gaps in immunization programs. The data can be visualized for the specific year by selecting the year from the drop-down on the extreme top right of the page.

3. Data Sources

Different data sources have been used to develop the immunization dashboard. Source of data for each page of the dashboard is given below:

Data	Source
Page 1 (Regional Overview)	
Immunization Coverage	Data presented are WHO/UNICEF estimates of national immunization coverage (WUENIC) except for Kosovo, where WUENIC is unavailable, and administrative coverage has been used.
Target Birth	For the countries in the ECA region, data is from the WHO/UNICEF Joint Reporting Form on Immunization (JRF); for the remaining countries, data is taken from the United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition.
Regional Immunization Coverage	Regional immunization coverage figures are calculated using the target births to get a weighted average.
Zero Dose Children	Zero-dose children are calculated by subtracting the proportion of births immunized with DTP1 from the total target births.
Unimmunized Children	Unimmunized children for DTP3, MCV1, and MCV2 are calculated by subtracting the proportion of births immunized with the vaccine from the total target births.
Vaccine-Preventable Diseases	Country data reported vaccine-preventable diseases are reported annually through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).
New Vaccine Status	Country data on new vaccine introduction is reported annually through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).
Page 2 (Heatmap)	
Immunization Coverage	Data presented are WHO/UNICEF estimates of national immunization coverage (WUENIC) except for Kosovo, where WUENIC is unavailable, and administrative coverage has been used.
Page 3 (Scorecard)	
Immunization Coverage	Data presented are WHO/UNICEF estimates of national immunization coverage (WUENIC) except for Kosovo, where WUENIC is unavailable, and administrative coverage has been used.
Zero Dose Children	Zero-dose children are calculated by subtracting the proportion of births immunized with DTP1 from the total target births.
Vaccine-Preventable Diseases	Country data for vaccine-preventable diseases is reported annually through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).

New Vaccine Status	Country data for new vaccines is reported annually through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).
Vaccine Management	Country data for vaccine stock-outs is reported annually through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).
Page 4 (National Overview)	
Immunization Coverage	Data presented are WHO/UNICEF estimates of national immunization coverage (WUENIC) except for Kosovo, where WUENIC is unavailable, and administrative coverage has been used.
Page 5-6 (Sub-national Overview)	
Sub-national Immunization Coverage	Subnational target births and immunization coverage are reported through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).
Zero Dose Children	Zero-dose children are calculated by subtracting the proportion of births immunized with DTP1 from the total target births.
Page 7 (Vaccine Preventable Disease Cases)	
Vaccine-Preventable Disease	Country data for vaccine-preventable diseases is reported annually through the WHO/UNICEF Joint Reporting Form on Immunization (JRF). The
Page 8-9 (Equity & Vulnerable Population)	
DTP3 and all basic vaccine coverage	Demographic Health Survey (DHS) or Multiple Indicator Cluster Survey (MICS) reports are available.
Page 10 (Supply Chain)	
Effective Vaccine Management (EVM)	EVM assessment data was collated from the official EVM Reports.
Supply Chain Indicators	Data was provided by the UNICEF Country Offices who in turn collected the data from the Ministry of Health. For West European countries and select East European Countries (Belarus, Georgia, Romania, and Türkiye) data is WHO/UNICEF Joint Reporting Forms.
Page 11 (Finance)	
Expenditures	Data for government financing on vaccines and routine immunization were taken from the WHO/UNICEF Joint Reporting Forms
Page 12 (Demand)	
Demand Indicators	Data is WHO/UNICEF Joint Reporting Forms and for ECA countries additional indicators data collected from UNICEF CO.

4. Data Visualization

Different visual elements have been used in the dashboard, such as charts, graphs, tables, and maps.

On page 1 (regional overview), a snapshot of regional coverage for DTP1, DTP3, MCV1, and MCV2 is given along with zero-dose and unimmunized children. Additionally, a quick snapshot of VPD (Diphtheria, Measles, and Polio) cases is also given. Country-wise summary of immunization coverage for DTP1, DTP3, MCV1, and MCV2 is also provided in tabular form with zero-dose children of each country. This synopsis helps to understand the current situation in the region and gives a quick overview of the progress made in the region.

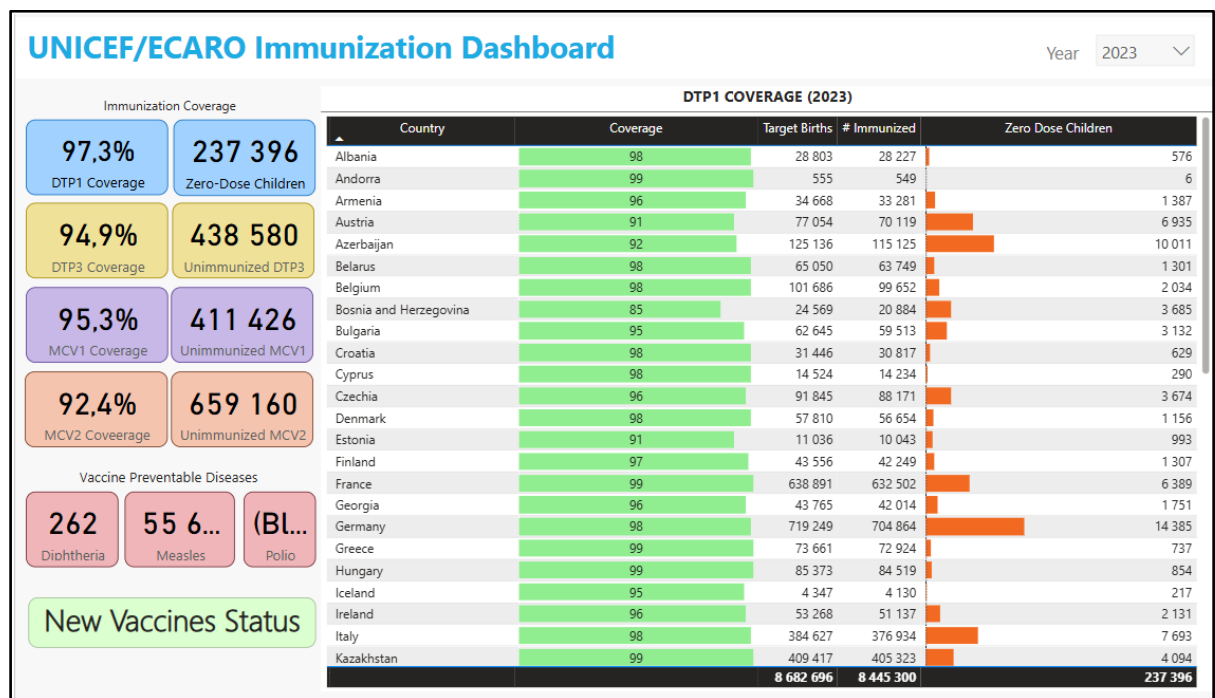


Figure 1: Regional Overview-Page 1 of the dashboard.

On page 2, heatmaps are displayed for DTP1, DTP3, MCV1, and MCV2 giving an overview of immunization coverage for respective antigens over ten years. By clicking on a specific antigen, the user can visualize a heatmap for each antigen and can easily compare the immunization coverage for each country over ten years with other countries. The user can also select specific country/countries of their choice.

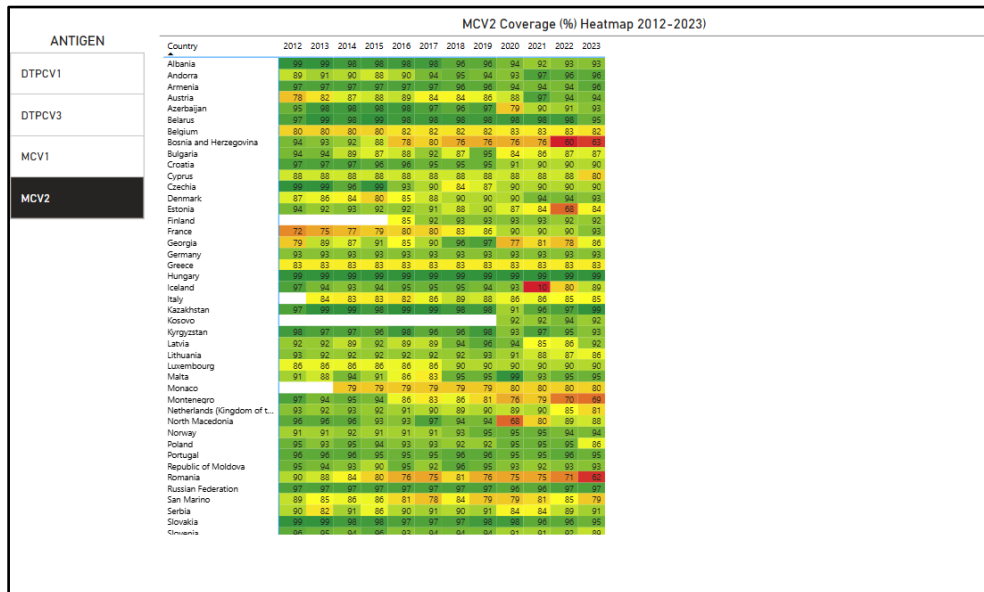


Figure 2: Heatmaps-Page 2 of the dashboard.

On page 3, the immunization scorecard is displayed for the country that displays a composite score for each country based on eight indicators. The following criteria are used to get the final score for each country-

S.No	Variable	Score	
1	Proportion of zero-dose children (4)	≤5%	4
		6-10%	3
		11-20%	2
		>20%	1
2	DTP3 coverage (4)	≥ 95%	4
		90-94%	3
		80-89%	2
		<80%	1
3	MCV1 coverage (4)	≥ 95%	4
		90-94%	3
		80-89%	2
		<80%	1
4	MCV2 coverage (4)	≥ 95%	4
		90-94%	3
		80-89%	2
		<80%	1
5	Sub-national coverage (4)	Districts present with DTP3/Penta3 coverage ≤80%- Yes	1
		Districts present with DTP3/Penta3 coverage ≥80%- No	2
		Districts present with MCV1 coverage ≤80%- Yes	1
		Districts present with MCV1 coverage ≥80%- No	2
6	New vaccine introduction (4)	PCV available-Yes	1
		PCV available- No	0
		Rotavirus vaccine available-Yes	1
		Rotavirus vaccine available- No	0
		HPV for females available- Yes	1
		HPV for females available- No	0
		HPV for males available- Yes	1
		HPV for males available- No	0
7	VPD cases (4)	Measles cases -Yes	0
		Measles cases -No	1
		Pertussis cases-Yes	0
		Pertussis cases-No	1
		Diphtheria cases- Yes	0
		Diphtheria cases- No	1
		Rubella cases- Yes	0
		Rubella cases- No	1
8	Vaccine Management (4)	Vaccine stock out reported in current year-Yes	2
		Vaccine stock out reported in current year- No	4

Total score for each country will be – Total Variable score/Number of variables.

Based on this highest score will be – 32/8= 4

UNICEF/ECARO Immunization Dashboard

Year 2023

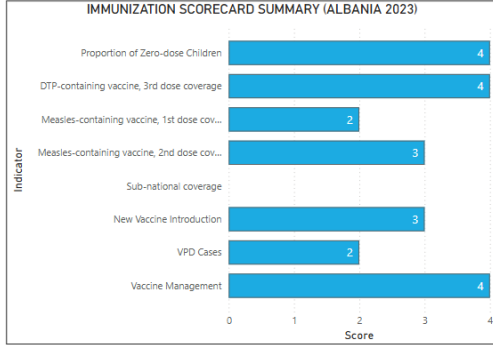
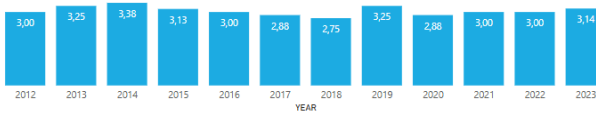
Country

- Albania
- Andorra
- Armenia
- Austria
- Azerbaijan
- Belarus
- Belgium
- Bosnia and Herzegovina

SCORE (ALBANIA 2023)

3,14

ANNUAL SCORE (ALBANIA 2012-2023)



No	Indicator	Value	Score
1	Proportion of zero-dose children	2	4
2	DTP-containing vaccine, 3rd dose	97	4
3	Measles-containing vaccine, 1st dose	83	2
4	Measles-containing vaccine, 2nd dose coverage	93	3
5	DTP3 districts less than 80%	ND	ND
5	MCV1 districts less than 80%	ND	ND
6	HPV available for females	Yes	1
6	HPV available for males	No	0
6	Pneumococcal vaccine available	Yes	1
6	Rotavirus vaccine available	Yes	1
7	Diphtheria	0	1
7	Measles	13	0
7	Pertussis	1	0
7	Rubella		1
8	Vaccine stock-outs in current year?	No	4

Figure 3: Scorecard-Page 3 of the dashboard.

On page 4, two infographics are displayed giving an overview of the antigen-wise coverage for the last ten years for the vaccines- BCG, Hep B birth dose, DTP1, DTP3, Pol3, HepB3, MCV1, and MCV2. On the bottom right side of the page, there is an infographic showing HPV vaccination coverage over the years. On the bottom left side of a page, there is an infographic giving a comparison for the vaccine coverage over the past four years. By moving the cursor, the user can visualize coverage for each year and can easily compare if there has been any change in immunization coverage.

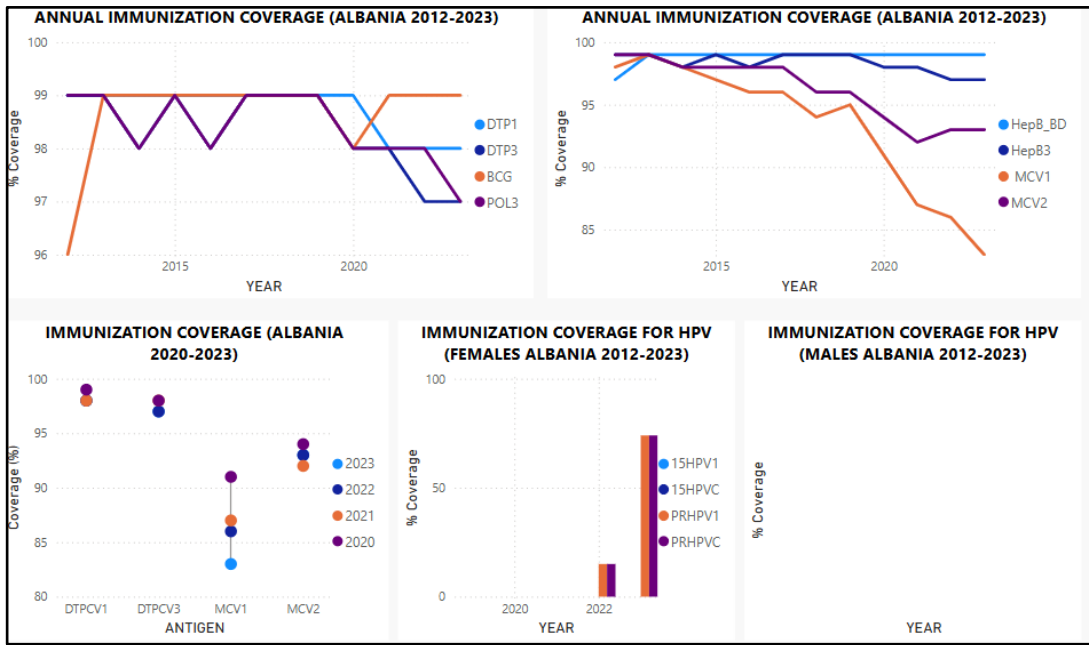


Figure 4: National Overview- Page 4 of the dashboard

On page 5, a map of the country is given which is color-coded as per the DTP3 coverage of the districts (or 2nd sub-national unit). The visualization of data in the map aids in understanding the geographical variation in DTP3 coverage in the country. Further, an infographic is given which displays the DTP3 coverage for each district of the country in a bar graph. This page is useful in understanding any variation in the sub-national coverage and identifying the districts that need to improve the coverage.

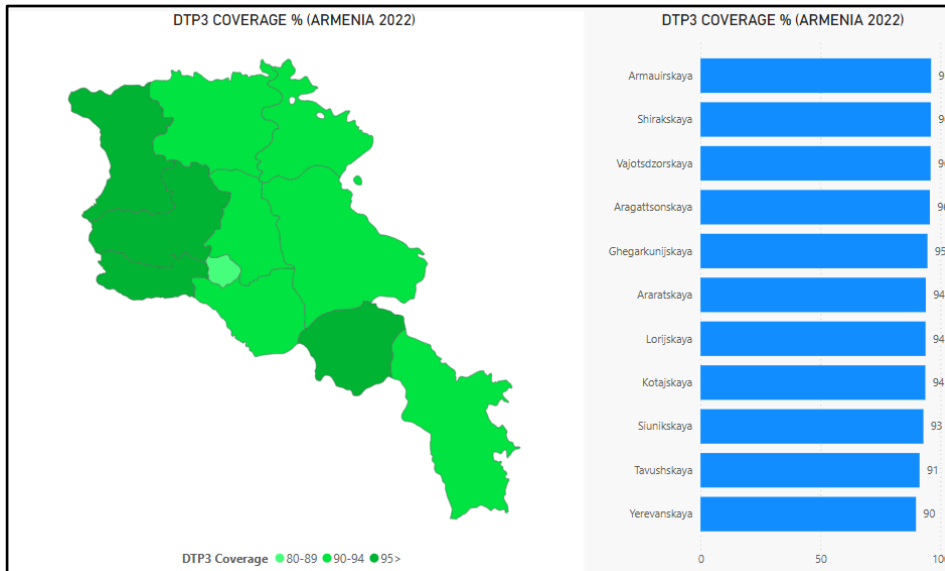


Figure 5: Sub-national Immunization Coverage-Page 5 of the immunization dashboard.

On page 6, three infographics are giving an insight into the sub-national immunization coverage of the country. Two bar graphs show information on country-specific data on the number of districts (or 2nd subnational unit) per coverage range achieved for DTP3 and MCV1. Additionally, users can take a glance at the number of zero-dose children per district in the tree graph. By using the year drop-down, the user can see variations in sub-national coverage in each year.

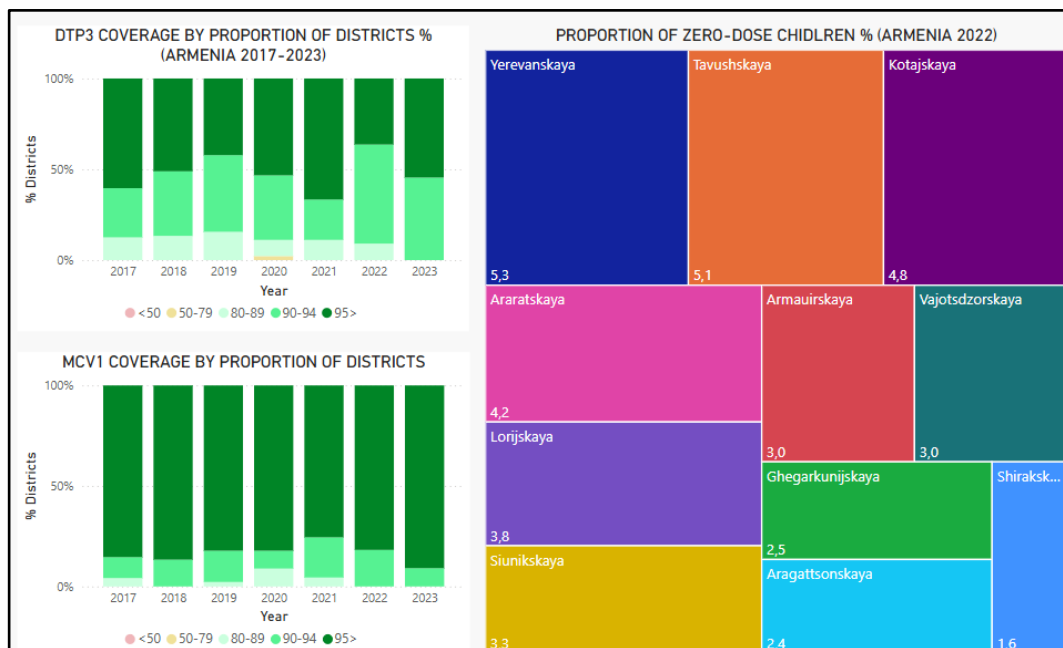


Figure 6: Sub-national Immunization Coverage-Page 6 of the immunization dashboard.

On page 7, VPD case information is given in the form of bar graph. A ten-year trend can be easily seen on this page. The information on this page can be co-related against the immunization coverage over the years and may help to see how the decline in immunization coverage led to an increase in VPD cases.

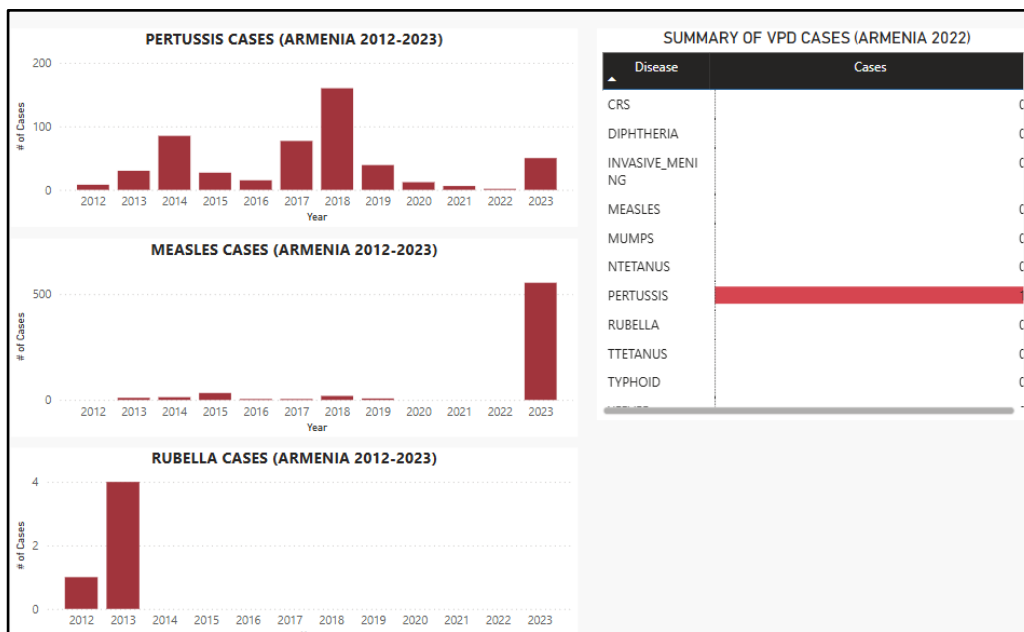


Figure 7: Vaccine Preventable Diseases Status-Page 7 of the immunization dashboard.

On pages 8 and 9, additional information is displayed for the immunization coverage against various characteristics like household characteristics, area of residence, gender, mother's education, ethnicity, and wealth quintiles. A dedicated page (page 9) was developed to show the data for vulnerable populations in the country. The wealth quintile infographic offers a glance at variations in immunization coverage (if any) as per the economic status of the family. By moving the cursor, the user can also see the coverage for each wealth quintile. The semi-pie chart at the top right of the page helps in understanding any variation in immunization coverage as per gender, geography, and economic status. For some countries, additional data is available like the decision-making power of the mother, the frequency of using the internet and watching television, and the mother's earning type. These infographics (bar graph) help to take a deep dive into the role of gender in immunization coverage.

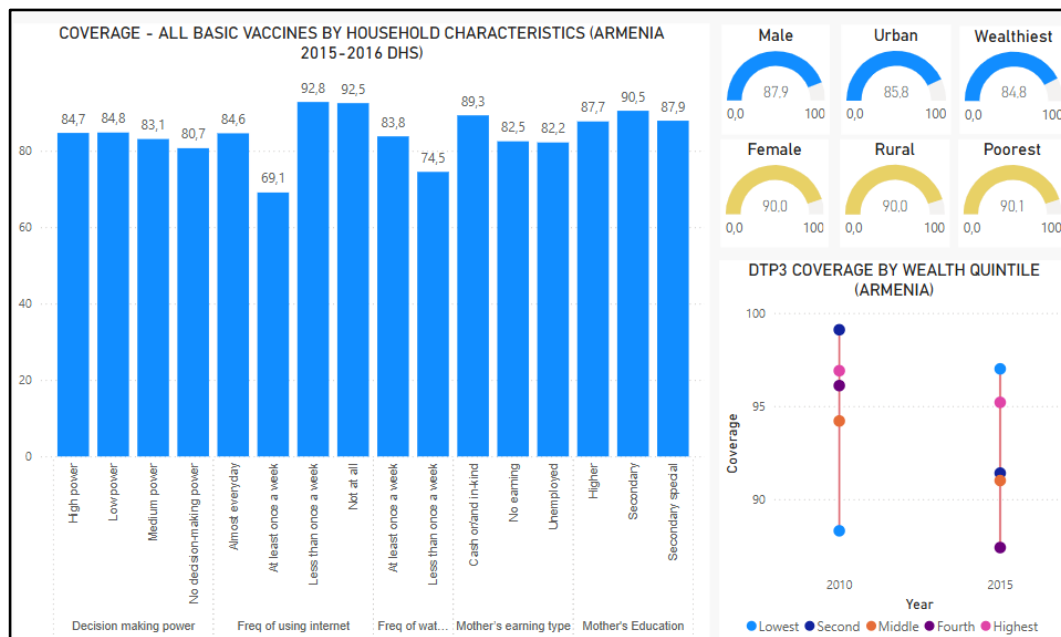


Figure 8: Equity- Page 8 of the immunization dashboard.

On page 10, EVM assessment and Continuous Improvement Plan (cIP) details are mentioned. Additionally, information is displayed for various supply chain indicators. The data for same was collected directly from the countries and offers more insight into the immunization supply chain status of the respective countries.

SUPPLY CHAIN INDICATORS 2023)	
INDICATOR	VALUE
1. Are there regular CCE assessment (at least one per 12 months) conducted to i...	Once a year
2. When was the last nationwide cold chain inventory performed?	2016
3. Is there a cold chain rehabilitation and expansion plan?	Not applicable
4. Is there a national cold chain equipment maintenance plan?	Not applicable
5. Establishment of continuous temperature monitoring system?	Yes (service delivery level, nationwide)
6. Country specific vaccine wastage data available ?	Yes
7. Application for Cold Chain Equipment Optimization Platform developed?	Not applicable
8. COVAX CCE application developed or submitted?	
9. Cold room temperature mapped at central level?	Yes
10. Has a waste management assessment been conducted?	Yes
11. Temperature Monitoring Study in route conducted?	Not applicable
12. Gap analysis on the cold chain inventory done?	Yes
13. Is eLMIS available in country for vaccines?	Yes
14. Is eLMIS available in country for cold chain equipment?	Yes
15. Has training been provided to cold chain and logistics personnel to ensure p...	Yes
16. Are there written standard operating procedures (SOPs) on vaccine storage, ...	Yes

2014
Year of the most recent EVM

EVM1
EVM Tool used

No
CIP

Figure 9: Supply Chain Management- Page 10 of the dashboard.

On page 11, an infographic is displayed that gives information about the percentage of the total expenditures on vaccines financed by the government funds.

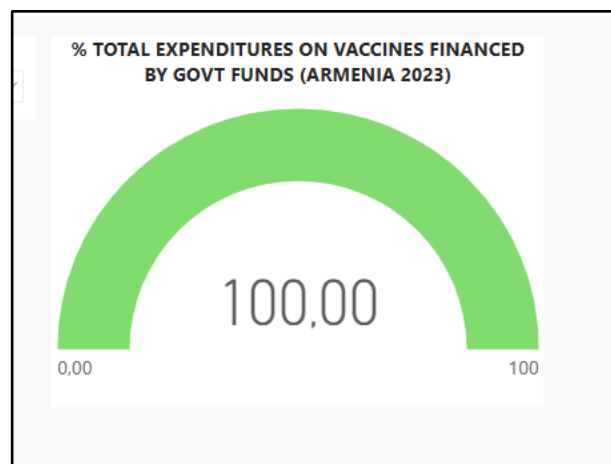


Figure 10: Supply Chain Management- Page 11 of the dashboard.

On page 12, vaccine demand-related indicators are displayed in tabular form. These indicators help to understand the steps taken by countries to increase demand for vaccines in their respective countries. The assessments and strategies tailored to each country are used to monitor the progress of immunization programs and identify the reasons for low vaccination rates. These assessments also serve as an indicator that countries are taking steps to strengthen evidence-based strategies to achieve widespread and fair immunization coverage.

VACCINE DEMAND INDICATORS (ARMENIA 2023)	
DESCRIPTION	VALUE
In 2023, did the country conduct any assessment of the demand-related reasons for under-vaccination? Yes/No	Yes
In 2023, does the country have a demand promotion strategy/plan currently valid and approved by the Ministry of Health? Yes/No	Yes
For countries that answered "Yes" in the previous question: Is the demand promotion strategy/plan costed? Yes/No	Yes

Figure 11: Vaccine Demand- Page 12 of the dashboard.

5. Navigating the dashboard

On page 1, click on antigen tabs on the left side of the page to view the information on country-wise vaccination coverage and click on the unimmunized tab to view the number of children that did not receive the specific vaccine in a given year. Click on vaccine-preventable diseases (Diphtheria, Measles, Rubella, and Pertussis) to view the vaccine-preventable disease (VPD) outbreak data. By clicking on new vaccine status, you can check the status of PCV, Rota, and HPV vaccine introduction status in the country in a given year.

Page 2 helps compare vaccination coverage across the countries over a 10-year period and page 3 helps get insights into the overall immunization programme performance of the country based on composite score. Page 4 describes the immunization coverage at the national level, pages 5 and 6 describe sub-national coverage data, page 7 gives information about the VPD outbreaks, pages 8 and 9 give an overview of various immunization equity indicators, page 10 describes immunization supply chain data of the country, page 11 gives an overview of financial expenditure on routine immunization vaccines and page 12 gives an update of the vaccine demand related indicators in the country. A video tutorial is also being developed for navigating the dashboard and will be available on the website.

5.1. How to filter data by country or year

On the right side at the top, select the year to view the data for a specific year. On pages 2 to 12 (except pages 4 and 10), select the country from the tab on the left side of the page at the top and view the country-specific data. You can move the cursor to the chart to view the specific data for each indicator.

6. Report Exporting

Select export to download the immunization data. The data can be downloaded in Excel, PDF, and PowerPoint and the user can select to download the data for the whole country or just the select page. Additionally, data can be filtered per year and downloaded.

However, the export feature is only available on the internal UNICEF SharePoint page and not available on the UNICEF Website. For the website, the user can select the “print screen” command and save the document as a PDF.

7. Contact Information

For additional information please contact Fatima Cengic (fcengic@unicef.org) or Alexei Ceban (aceban@unicef.org).