WHO and UNICEF Estimates of National Infant Immunization Coverage

User Reference

Country Reports

01 May 2024

Prepared by the WHO and UNICEF working group for monitoring immunization coverage.
About the WUENIC estimates

Since 2001, WHO and UNICEF have jointly produced and published annual estimates of national vaccination coverage (WUENIC) based on country-reported data. In addition to serving as a measure of an immunization programme’s ability to effectively deliver immunization services and protect against vaccine-preventable diseases, WUENIC are used to monitor progress towards global and regional initiatives such as Immunization Agenda 2030 and Sustainable Development Goal (SDG) Indicator 3.b.1 related to monitoring the proportion of the target population covered by all vaccines included in a national programme.

WUENIC User reference

This guide uses an example country report to illustrate how the rules that govern the WUENIC process are applied to country-reported data in order to inform WUENIC coverage estimates using a four-phased approach. This guide may also be useful when reading country-specific WUENIC time-series graphs online.

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Phase 1

Administrative reports

WHO/UNICEF estimates of national infant routine vaccination coverage are based in part on coverage data derived from administrative data systems and reported through the WHO/UNICEF Joint Reporting Form on Immunization (JRF).

Administrative coverage data for an antigen are displayed as red stars (*) by year for the reporting period (x-axis). Coverage is presented as the percentage of a target population that has been vaccinated (y-axis). For example, administrative coverage for the third dose of DTP is calculated by dividing the number of children receiving the third dose of DTP vaccine by the number of children who survived to their first birthday.
Phase 2
Official government estimates

National authorities are also asked to provide an official government estimate of vaccination coverage through the WHO/UNICEF JRF. Officially reported data are displayed as red circles along with the administrative data (*) for the period. Since administrative vaccination coverage can be biased or inaccurate, national authorities are given an opportunity to provide estimates of the most likely coverage — taking into account the administrative data, survey data (for example, in those instances where a programme does not have a well-functioning administrative monitoring system), and any other information on factors that may have affected vaccination coverage (for example, private or NGO sector delivery of vaccination, incomplete reporting or challenges with demographic data). WHO and UNICEF recommend that any adjustments to officially reported coverage data be documented and reported with the estimates.

Countries are encouraged to explain the factors that might account for such differences in open text.
Phase 3

Survey reports

WHO and UNICEF also consider vaccination coverage estimates derived from high-quality surveys that can estimate coverage in the absence of accurate target population estimates (denominators) or from sectors not included in administrative reporting (for example, private or NGO contributions). Survey results appear as vertical red bars, and survey values considered in producing WUENIC estimates are marked by a green diamond. Survey bars without a green diamond are not considered (because of small sample size, inconsistencies in results across vaccine doses recommended at the same age or non-standard presentation of results). Survey results are described on the final page of the country report.

Survey results report on annual cohort(s) of children (for example, 12 to 23 months) and reflect the birth year of the cohort for infant vaccinations. Because surveys only provide information on previous birth cohorts, they may not provide timely information on programme interventions.

Coverage estimates can be biased, particularly for multi-dose antigens and in countries where home-based record distribution, retention and use are limited. Survey results marked with a green diamond for multi-dose antigens (for example, DTP3) may reflect a recall bias adjustment if survey information is available to compute an adjustment.
Phase 4

**WUENIC estimated coverage**

After considering all of the coverage data submitted by national authorities—administrative coverage, official government estimate and survey data—as well as contextual information (for example, stockouts, conflicts or natural disasters that might disrupt service delivery), WHO and UNICEF estimate the most likely coverage level for each country, vaccine and year. The **WUENIC estimate is displayed as a solid blue line**.

Additional information on the methods that guide the WHO and UNICEF estimation process can be found in the Resources section of this guide.
The WHO and UNICEF estimates of national immunization coverage (WUENIC) are based on data and information from a variety of sources, including government estimate, administrative data, survey results, and, as applicable, dose combination for which estimates have been made.

Legend describing the four potential data series that may appear in the chart.

Survey data based on documented evidence (for example, home-based record card) or recall of vaccination history.

Time series data table of the values in the chart by data source, including the WHO/UNICEF estimate, official government estimate, administrative data, survey results, and the grade of confidence.

Grade of confidence classifications (*, **, ****) based on the level of supporting evidence available.

Text description that provides contextual information that informed the WUENIC estimate.

Version information, including data-as-of date and date of next revision. Please reference the version when citing WUENIC estimates.

How to read the WUENIC

Country Reports

1. Country name.
2. Antigen and, as applicable, dose combination for which estimates have been made.
3. Legend describing the four potential data series that may appear in the chart.
4. Survey data based on documented evidence (for example, home-based record card) or recall of vaccination history.
5. Time series data table of the values in the chart by data source, including the WHO/UNICEF estimate, official government estimate, administrative data, survey results, and the grade of confidence.
6. Grade of confidence classifications (*, **, ****) based on the level of supporting evidence available.
7. Text description that provides contextual information that informed the WUENIC estimate.
8. Version information, including data-as-of date and date of next revision. Please reference the version when citing WUENIC estimates.
Understanding WUENIC

Resources

The following provide additional information on the WUENIC methods and process.

“

We must ensure that more children...are protected from vaccine-preventable diseases, allowing them to live happier, healthier lives.”

Tedros Adhanom Ghebreyesus

**2024**

**WEBSITE & DATABASE**

WHO/UNICEF estimates of national immunization coverage.

**2021**

**GUIDELINES**


**2013**

**GRADE OF CONFIDENCE**


**2012**

**METHODS & PROCESS**


**2011**

**METHODS & PROCESS**


**2009**

**SEMINAL PUBLICATION**


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**Immunization Analysis and Insights**

WHO/UNICEF estimates of national immunization coverage.