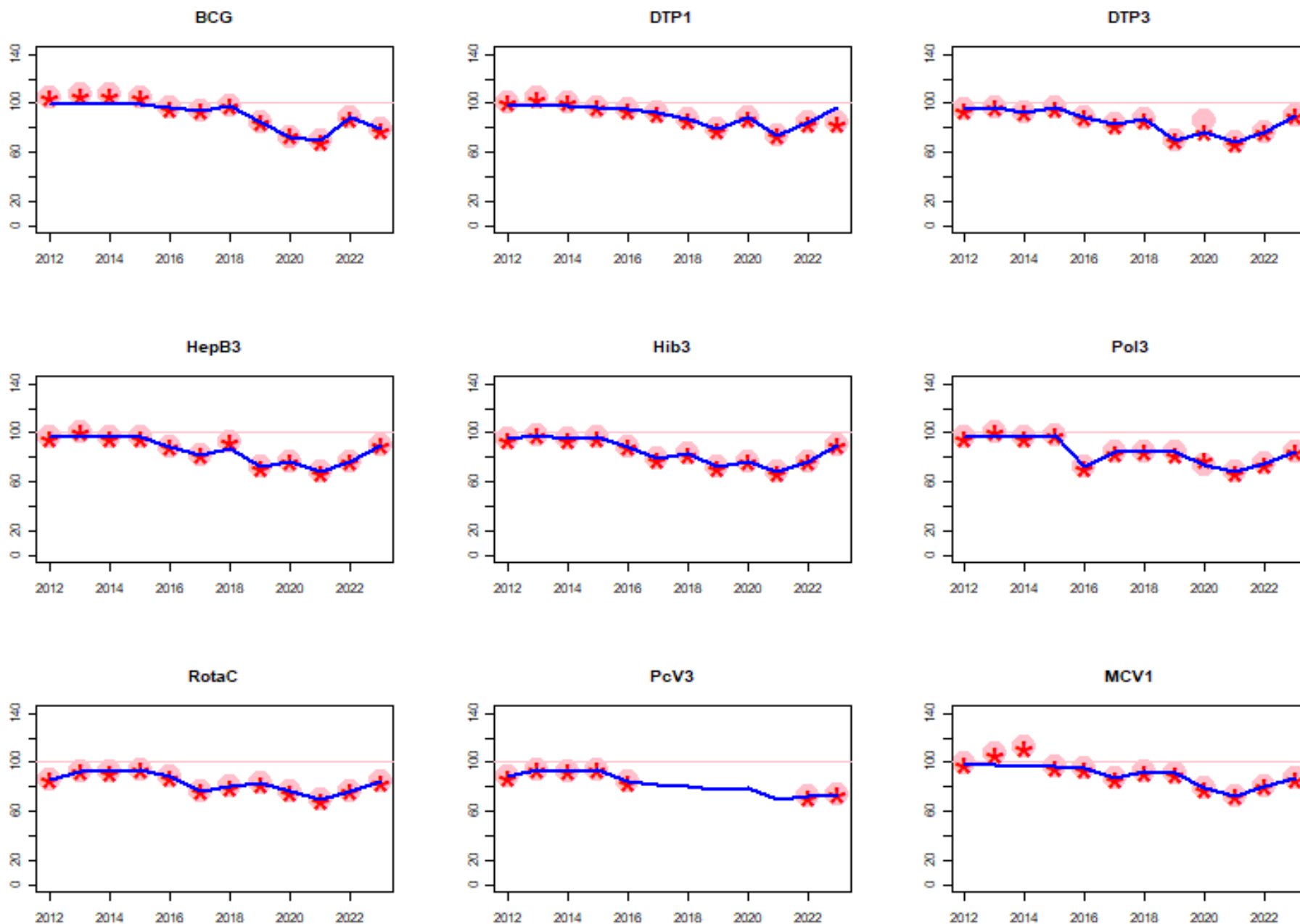




BACKGROUND NOTE: Each year WHO and UNICEF jointly review reports submitted by Member States regarding national immunization coverage, finalized survey reports as well as data from published and grey literature. Based on these data, with due consideration to potential biases and the views of local experts, WHO and UNICEF attempt to distinguish between situations where available empirical data accurately reflect immunization system performance and those where the data are likely compromised and present a misleading view of coverage.

WHO and UNICEF estimates are country-specific; that is to say, each country's data are reviewed individually, and data are not borrowed from other countries in the absence of data. Estimates are not based on ad hoc adjustments to reported data; in some instances empirical data are available from a single source, usually the nationally reported coverage data. In cases where no data are available for a given country/vaccine/year combination, data are considered from earlier and later years and interpolated to estimate coverage for the missing year(s). In cases where data sources are mixed and show large variation, an attempt is made to identify the most likely estimate with consideration of the possible biases in available data. For methods see:

*Burton et al. 2009. Bull World Health Organ.

*Burton et al. 2012. PLoS One.

*Danovaro-Holliday et al. 2021. Gates Open Res.

DATA SOURCES.

ADMINISTRATIVE coverage: Reported by national authorities and based on aggregated administrative reports from health service providers on the number of vaccinations administered during a given period (numerator data) and reported target population data (denominator data). May be biased by inaccurate numerator and/or denominator data.

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.

SURVEY coverage: Based on estimated coverage from population-based household surveys among children aged 12-23 or 24-35 months following a review of survey methods and results. Information is based on the combination of vaccination history from documented evidence or caregiver recall. Survey results are considered for the appropriate birth cohort based on data collection period.

ABBREVIATIONS

BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.

DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.

Pol3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age. For countries utilizing IPV containing vaccine only, i.e., no recommended dose of OPV, WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (Pol3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated Pol3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated Pol3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

IPV2: percentage of surviving infants who received a 2nd dose of inactivated polio vaccine. IPV2 coverage estimates produced for OPV using countries.

MCV1: percentage of surviving infants who received the 1st dose of measles containing vaccine. In countries where the national schedule recommends the 1st dose of MCV at 12 months or later based on the epidemiology of disease in the country, coverage estimates reflect the percentage of children who received the 1st dose of MCV as recommended.

MCV2: percentage of children who received the 2nd dose of measles containing vaccine according to the nationally recommended schedule.

RCV1: percentage of surviving infants who received the 1st dose of rubella containing vaccine. Coverage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration nor are the data represented in the accompanying graph and data table.

HepBB: percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are produced only for countries with a universal birth dose policy. Estimates are not produced for countries that recommend a birth dose to infants born to HepB virus-infected mothers only or where there is insufficient information to determine whether vaccination is within 24 hours of birth.

HepB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.

Hib3: percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.

RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.

PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PcV prior to the 1st birthday.

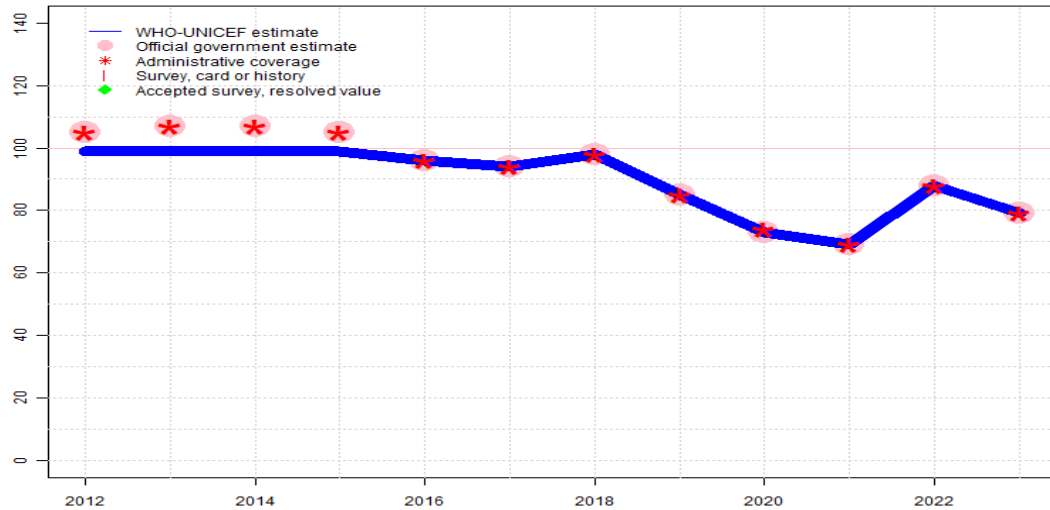
YFV: percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

MengA: percentage of children who received one dose of meningococcal A conjugate vaccine. MengA coverage estimates produced for countries in the meningitis belt of sub-Saharan Africa.

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Brazil - BCG

BRA - BCG



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	99	99	99	99	96	94	98	85	73	69	88	79
Estimate GoC	•	•	•	•	••	••	••	••	••	••	••	••
Official	105	107	107	105	96	94	98	85	73	69	88	79
Administrative	105	107	107	105	96	94	98	85	74	69	88	79
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

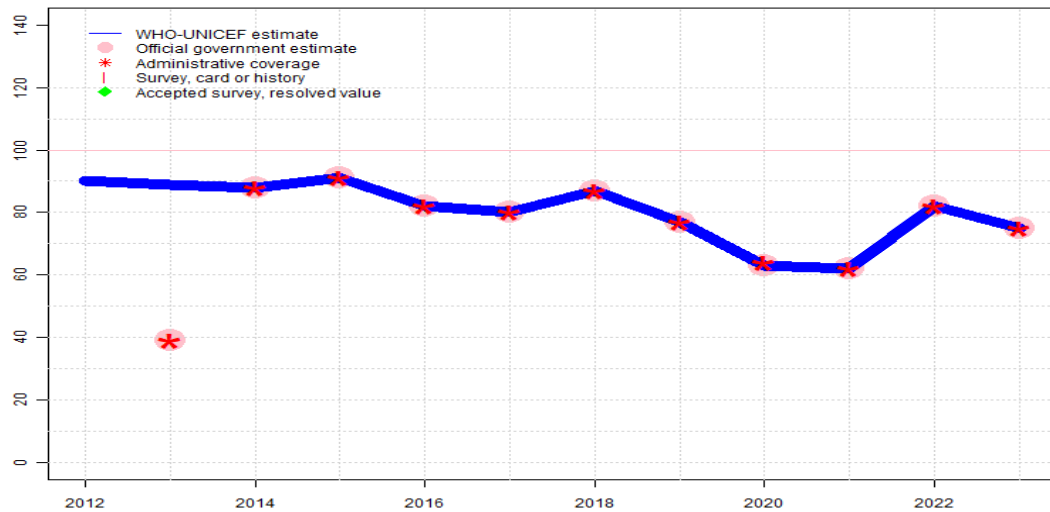
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage.. GoC=R+ D+
- 2022: Estimate informed by reported data. . GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. . GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Programme reports 10 month vaccine stockout. GoC=R+ D+
- 2016: Estimate informed by reported coverage. Programme reports a 1-month vaccine stockout. GoC=R+ D+
- 2015: Estimate of 99 percent assigned by working group. . Reported data excluded because 105 percent greater than 100 percent. Programme reports one month stockout. Estimate challenged by: R-
- 2014: Reported data calibrated to 1997 and 2015 levels. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: R-
- 2013: Reported data calibrated to 1997 and 2015 levels. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: R-
- 2012: Reported data calibrated to 1997 and 2015 levels. Reported data excluded because 105 percent greater than 100 percent. Estimate challenged by: R-

Brazil - HepBB

BRA - HepBB



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	90	89	88	91	82	80	87	77	63	62	82	75
Estimate GoC	•	•	••	••	••	••	••	••	••	••	••	••
Official	NA	39	88	91	82	80	87	77	63	62	82	75
Administrative	NA	39	88	91	82	80	87	77	64	62	82	75
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

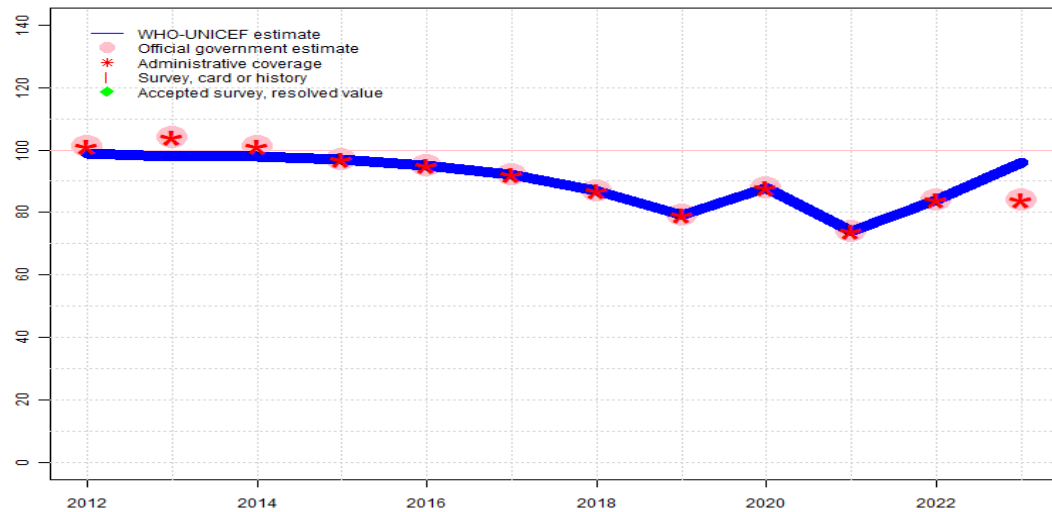
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate informed by reported data. . GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. Programme reports a 3-month vaccine stockout of HepB vaccine, not clear if combination or single antigen. GoC=R+ D+
- 2015: Estimate informed by reported data. Programme reports two months stockout of monovalent HepB vaccine. GoC=R+ D+
- 2014: Estimate informed by reported data. Recovery in reported coverage level reflects successful revisions in the information system. GoC=R+ D+
- 2013: Estimate informed by interpolation between reported data. Reported data excluded. Reported coverage level is an artefact of reporting. The HepB birth dose data field was changed in the information system during 2013. Estimate challenged by: D-
- 2012: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Brazil - DTP1

BRA - DTP1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	99	98	98	97	95	92	87	79	88	74	84	96
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	•
Official	101	104	101	97	95	92	87	79	88	74	84	84
Administrative	101	104	101	97	95	92	87	79	88	74	84	84
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2023: DTP1 coverage estimated based on DTP3 coverage of 90. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. Increased in reported coverage reflects intensification activities documented in PAHO newsletter on May 2024 (<https://campaigns.paho.org/t/y-e-mpiydl-dtnkkldjr-0/>). Estimate challenged by: D-R-

2022: Estimate informed by reported data. GoC=R+ D+

2021: Estimate informed by reported data. . GoC=R+ D+

2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Increase in reported coverage is unexplained but may reflect recovery from vaccine stockouts reported for 2019. GoC=R+ D+

2019: Estimate informed by reported data. Programme reports a one-month (February) followed by a four-month (July-Oct) vaccine stockout at the national level. GoC=R+ D+

2018: Estimate informed by reported data. Consistency across vaccines. GoC=R+ D+

2017: Estimate informed by reported data. Programme reports two months vaccine stockout. GoC=R+ D+

2016: Estimate informed by reported data. Programme reports a 2-month vaccine stockout. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

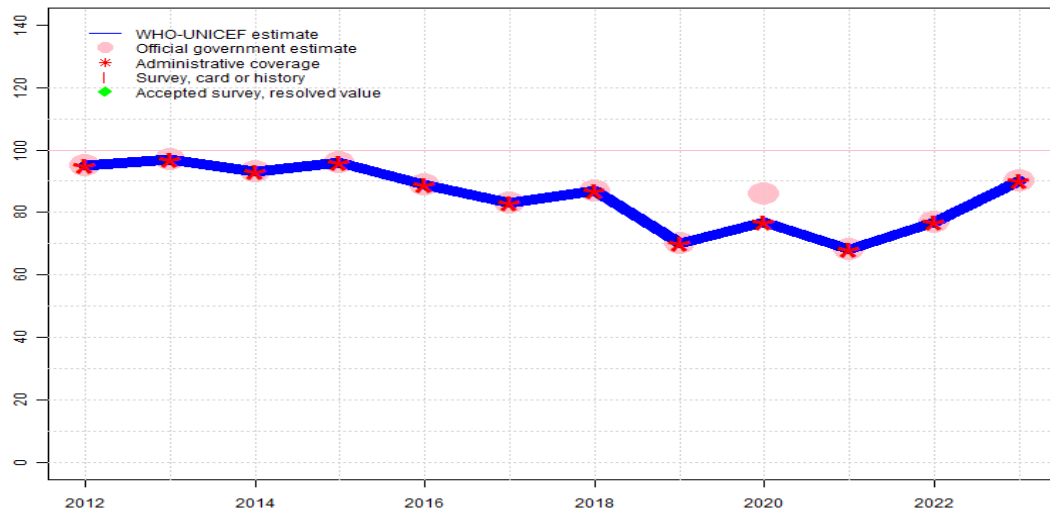
2014: Estimate informed by interpolation between reported data. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ D+

2013: Estimate informed by interpolation between reported data. Reported data excluded because 104 percent greater than 100 percent. GoC=R+ D+

2012: Estimate informed by interpolation between reported data. Reported data excluded because 101 percent greater than 100 percent. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. GoC=R+ D+

Brazil - DTP3

BRA - DTP3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	95	97	93	96	89	83	87	70	77	68	77	90
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●	●●	●●	●●
Official	95	97	93	96	89	83	87	70	86	68	77	90
Administrative	95	97	93	96	89	83	87	70	77	68	77	90
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

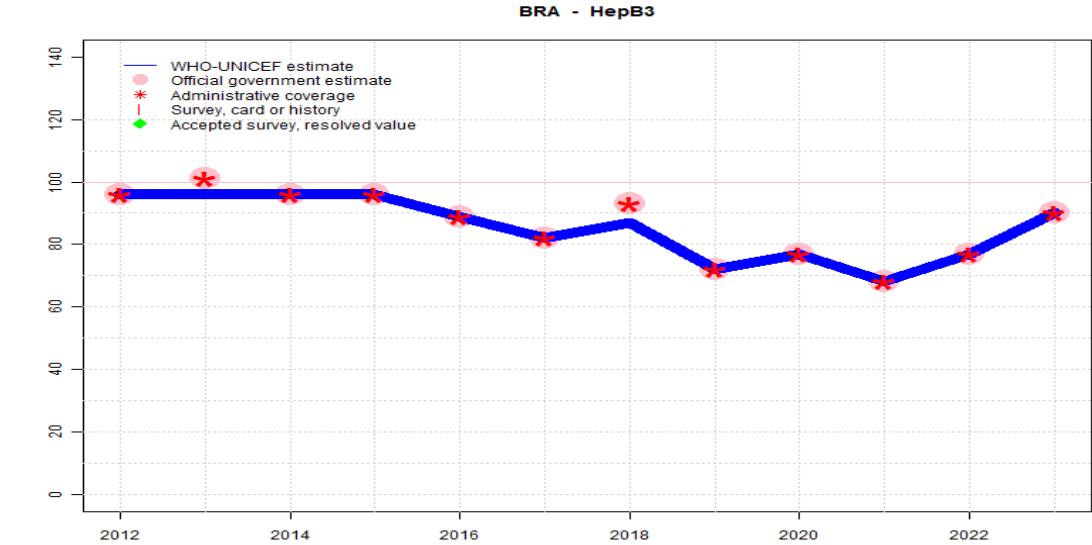
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. Increased in reported coverage reflects intensification activities documented in PAHO newsletter on May 2024 (<https://campaigns.paho.org/t/y-e-mpiycl-dtnkkldjr-0/>).. GoC=R+ D+
- 2022: Estimate informed by reported data. GoC=R+ D+
- 2021: Estimate informed by reported data. . GoC=R+ D+
- 2020: Estimate based on administrative report. Increase in reported coverage is unexplained but may reflect recovery from vaccine stockouts reported for 2019. Reported data excluded due to an increase from 70 percent to 86 percent with decrease 68 percent. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Estimate challenged by: R-
- 2019: Estimate informed by reported data. Programme reports a one-month (February) followed by a four-month (July-Oct) vaccine stockout at the national level.. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Programme reports two months vaccine stockout. GoC=R+ D+
- 2016: Estimate informed by reported data. Programme reports a 2-month vaccine stockout. GoC=R+ D+
- 2015: Estimate informed by reported data. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by reported data. GoC=R+ D+
- 2012: Estimate informed by reported data. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. GoC=R+ D+

Brazil - HepB3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	96	96	96	96	89	82	87	72	77	68	77	90
Estimate GoC	●●	●●	●●	●●	●●	●●	●	●●	●●	●●	●●	●●
Official	96	101	96	96	89	82	93	72	77	68	77	90
Administrative	96	101	96	96	89	82	93	72	77	68	77	90
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

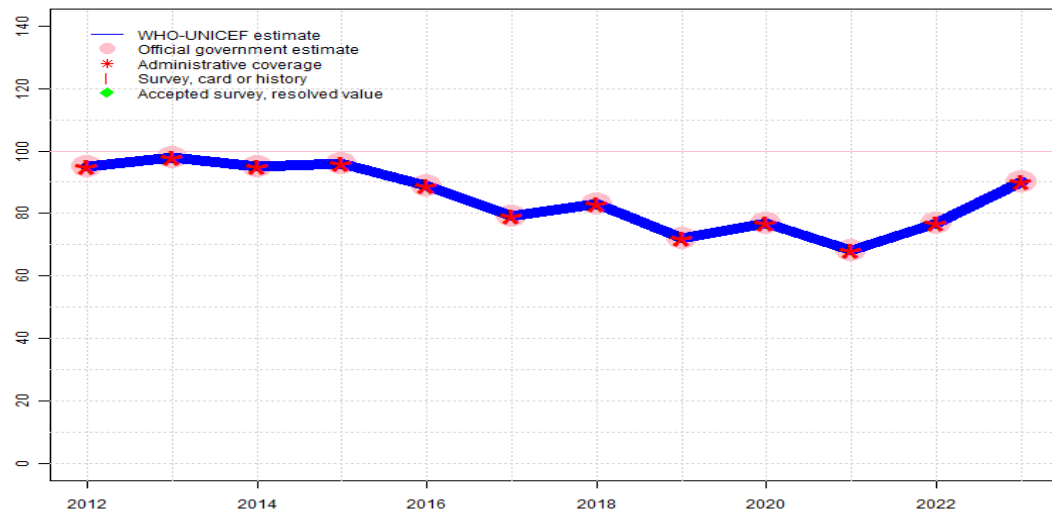
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage.. GoC=R+ D+
- 2022: Estimate informed by reported data. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Increase in reported coverage is unexplained but may reflect recovery from vaccine stockouts reported for 2019. GoC=R+ D+
- 2019: Estimate informed by reported data. Programme reports a one-month (February) followed by a four-month (July-Oct) vaccine stockout at the national level.. GoC=R+ D+
- 2018: Estimate informed by estimated DTP3 coverage level. No available explanation for difference in reported coverage levels for HepB3 and DTP3. Reported data excluded due to an increase from 82 percent to 93 percent with decrease 72 percent. Estimate challenged by: R-
- 2017: Estimate informed by reported data. Programme reports two months vaccine stockout. GoC=R+ D+
- 2016: Estimate informed by reported data. Programme reports a 3-month vaccine stockout of HepB vaccine, not clear if combination or single antigen. GoC=R+ D+
- 2015: Estimate informed by reported data. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by interpolation between reported data. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ D+
- 2012: Estimate informed by reported data. GoC=R+ D+

Brazil - Hib3

BRA - Hib3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	95	98	95	96	89	79	83	72	77	68	77	90
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	95	98	95	96	89	79	83	72	77	68	77	90
Administrative	95	98	95	96	89	79	83	72	77	68	77	90
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

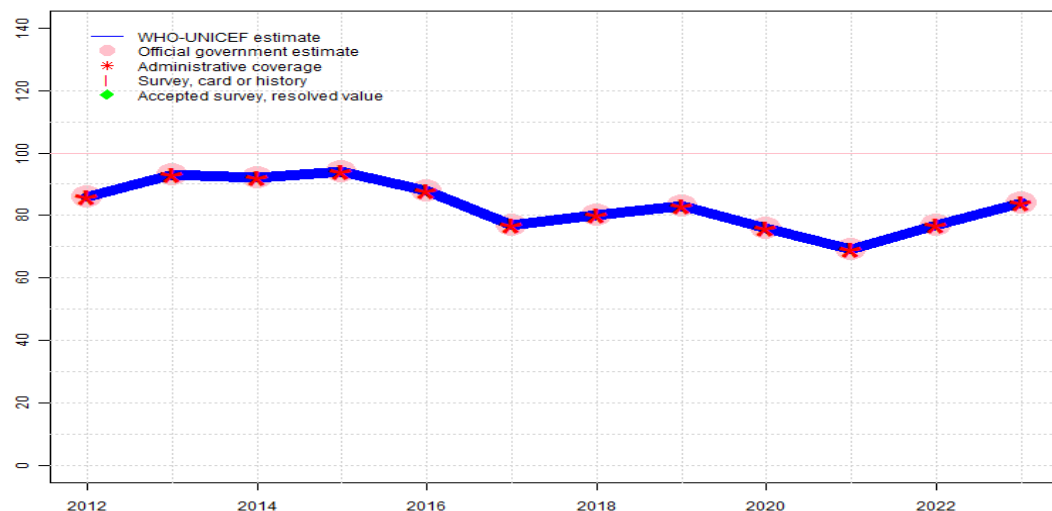
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage.. GoC=R+ D+
- 2022: Estimate informed by reported data. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Increase in reported coverage is unexplained but may reflect recovery from vaccine stockouts reported for 2019. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=R+ D+
- 2019: Estimate informed by reported data. Programme reports a one-month (February) followed by a four-month (July-Oct) vaccine stockout at the national level. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Programme reports two months vaccine stockout. GoC=R+ D+
- 2016: Estimate informed by reported data. Programme reports a 1-month vaccine stockout. GoC=R+ D+
- 2015: Estimate informed by reported data. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by reported data. GoC=R+ D+
- 2012: Estimate informed by reported data. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. GoC=R+ D+

Brazil - RotaC

BRA - RotaC



Description:

2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+

2022: Estimate informed by reported data. GoC=R+ D+

2021: Estimate informed by reported data. GoC=R+ D+

2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported data. GoC=R+ D+

2017: Estimate informed by reported data. Programme reports one month vaccine stockout. GoC=R+ D+

2016: Estimate informed by reported data. GoC=R+ D+

2015: Estimate informed by reported data. GoC=R+ D+

2014: Estimate informed by reported data. GoC=R+ D+

2013: Estimate informed by reported data. GoC=R+ D+

2012: Estimate informed by reported data. GoC=R+

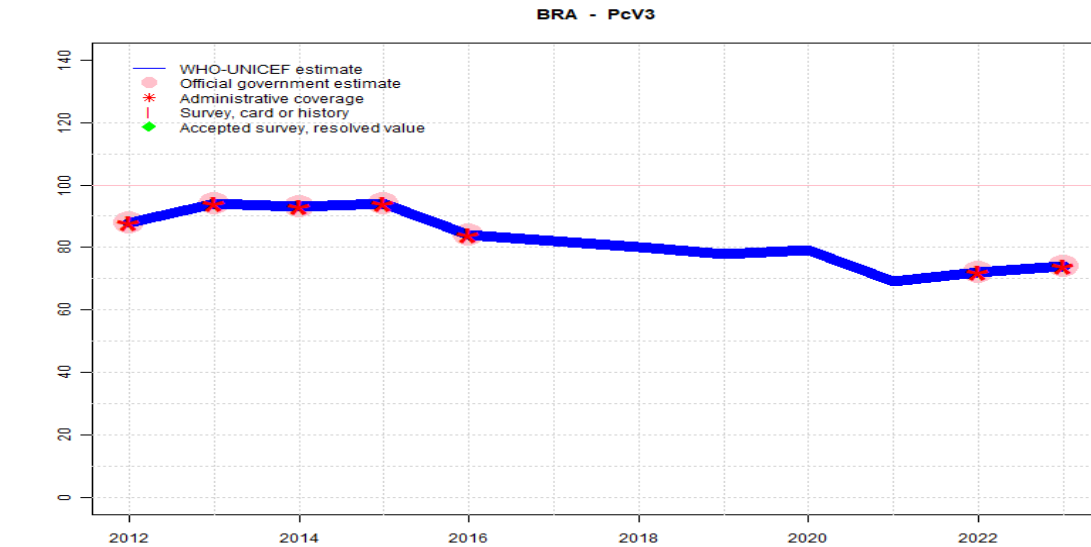
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	86	93	92	94	88	77	80	83	76	69	77	84
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	86	93	92	94	88	77	80	83	76	69	77	84
Administrative	86	93	92	94	88	77	80	83	76	69	77	84
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Brazil - PcV3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	88	94	93	94	84	82	80	78	79	69	72	74
Estimate GoC	●●	●●	●●	●●	●●	●	●	●	●	●	●●	●●
Official	88	94	93	94	84	NA	NA	NA	NA	NA	72	74
Administrative	88	94	93	94	84	NA	NA	NA	NA	NA	72	74
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

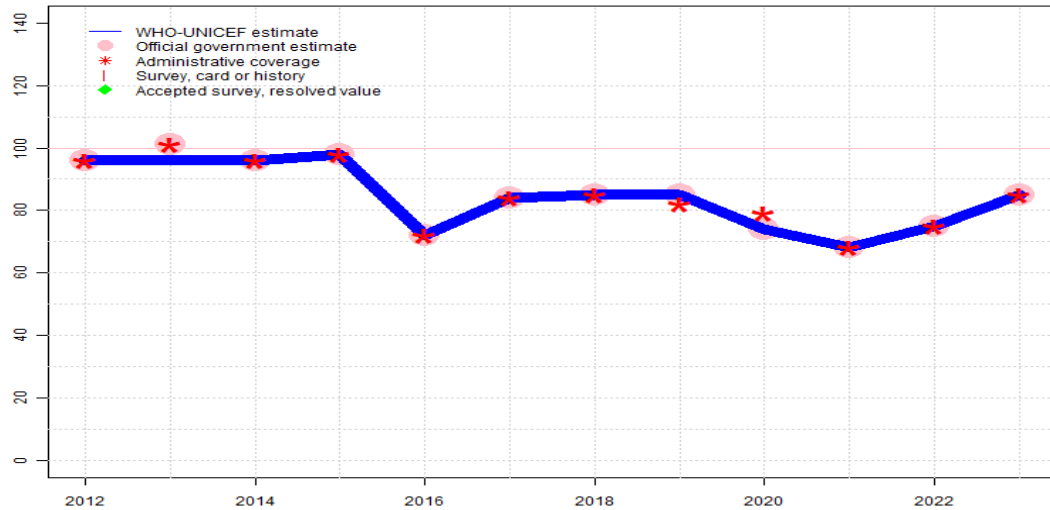
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate informed by reported data. Estimate of 72 percent changed from previous revision value of 81 percent. GoC=R+ D+
- 2021: Estimate based on data reported for the second PCV dose. GoC=No accepted empirical data
- 2020: Estimate based on data reported for the second PCV dose. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=No accepted empirical data
- 2019: Estimate informed by interpolation between reported data. Estimate of 78 percent changed from previous revision value of 84 percent. GoC=No accepted empirical data
- 2018: Estimate informed by interpolation between reported data. Estimate of 80 percent changed from previous revision value of 84 percent. GoC=No accepted empirical data
- 2017: Estimate informed by interpolation between reported data. Estimate of 82 percent changed from previous revision value of 84 percent. GoC=No accepted empirical data
- 2016: Estimate informed by reported data. GoC=R+ D+
- 2015: Estimate informed by reported data. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by reported data. GoC=R+ D+
- 2012: Estimate informed by reported data. GoC=R+ D+

Brazil - Pol3

BRA - Pol3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	96	96	96	98	72	84	85	85	74	68	75	85
Estimate GoC	••	••	••	••	••	••	••	••	•	••	••	••
Official	96	101	96	98	72	84	85	85	74	68	75	85
Administrative	96	101	96	98	72	84	85	82	79	68	75	85
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

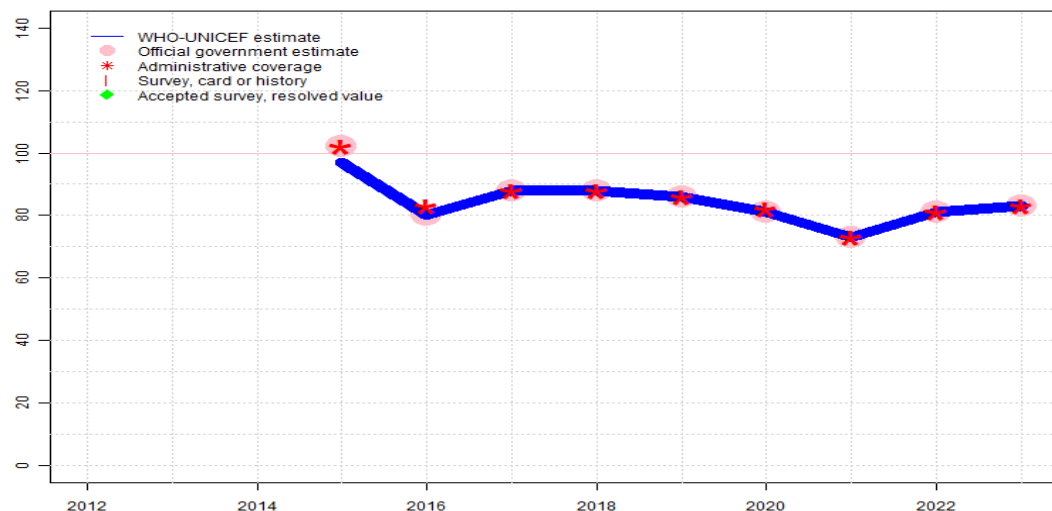
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate informed by reported data. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. Estimate challenged by: D-
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Estimate based on reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. Decrease in coverage is unexplained but consistent with a decrease in first dose of IPV vaccine. GoC=R+ D+
- 2015: Estimate informed by reported data. Programme switched from OPV to IPV for the 3rd dose of polio vaccine. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by interpolation between reported data. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ D+
- 2012: Estimate informed by reported data. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential IPV for first and second dose and OPV for the third dose and to DTP-Hib-HepB. GoC=R+ D+

Brazil - IPV1

BRA - IPV1



Description:

Estimates for a dose of inactivated polio vaccine (IPV) begin in 2015 following the Global Polio Eradication Initiative's Polio Eradication and Endgame Strategic Plan: 2013-2018 which recommended at least one full dose or two fractional doses of IPV into routine immunization schedules as a strategy to mitigate the potential consequences should any re-emergence of type 2 poliovirus occur following the planned withdrawal of Sabin type 2 strains from oral polio vaccine (OPV).

2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+

2022: Estimate informed by reported data. GoC=R+ D+

2021: Estimate informed by reported data. GoC=R+ D+

2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=R+ D+

2019: Estimate informed by reported data. GoC=R+ D+

2018: Estimate informed by reported data. Consistency across vaccines. GoC=R+ D+

2017: Estimate informed by reported data. GoC=R+ D+

2016: Estimate informed by reported data. Unexplained decline in reported coverage from 2015. GoC=R+ D+

2015: Inactivated polio vaccine in 2012 and is recommended as part of a sequential schedule. Reported coverage is over 100 percent. Estimated coverage based on reported DTP1 coverage. Reported data excluded because 102 percent greater than 100 percent. Estimate challenged by: R-

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	97	80	88	88	86	81	73	81	83
Estimate GoC	NA	NA	NA	●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	102	80	88	88	86	81	73	81	83
Administrative	NA	NA	NA	102	83	88	88	86	82	73	81	83
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

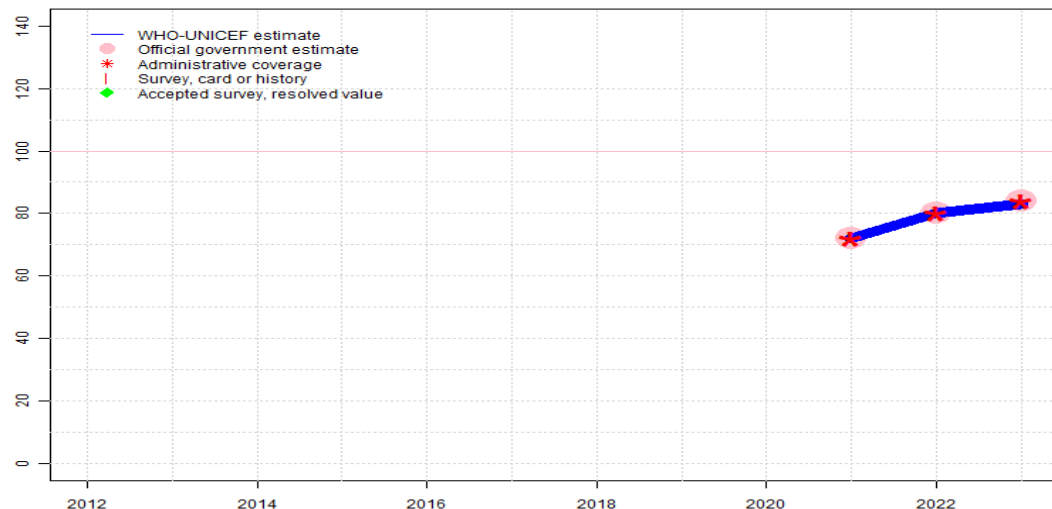
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Brazil - IPV2

BRA - IPV2



Description:

Estimates for a second dose of inactivated polio vaccine (IPV) begin in 2021 following a Strategic Advisory Group of Experts on Immunization (SAGE) recommendation in October 2020 that a second IPV dose increases protection against all polioviruses, including protection against paralysis caused by vaccine derived polio virus (type 2) (VDPV2). The addition of IPV2 is the next step towards complete OPV withdrawal. IPV2 coverage estimates produced for OPV using countries.

2023: Estimate based on IPV1 estimate. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. Estimate challenged by: R-

2022: Estimate informed by reported data. GoC=R+ D+

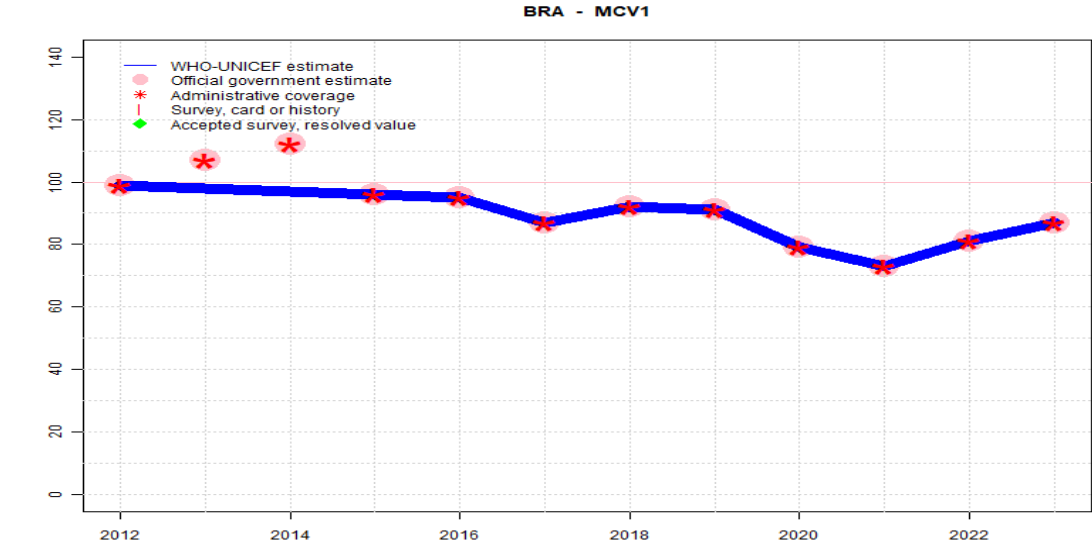
2021: Estimate informed by reported data. Second dose of inactivated polio vaccine introduced prior to 2021. GoC=R+ D+

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	80	83
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	80	84
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	80	84
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	99	98	97	96	95	87	92	91	79	73	81	87
Estimate GoC	••	•	•	••	••	••	••	••	••	••	••	••
Official	99	107	112	96	95	87	92	91	79	73	81	87
Administrative	99	107	112	96	95	87	92	91	79	73	81	87
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

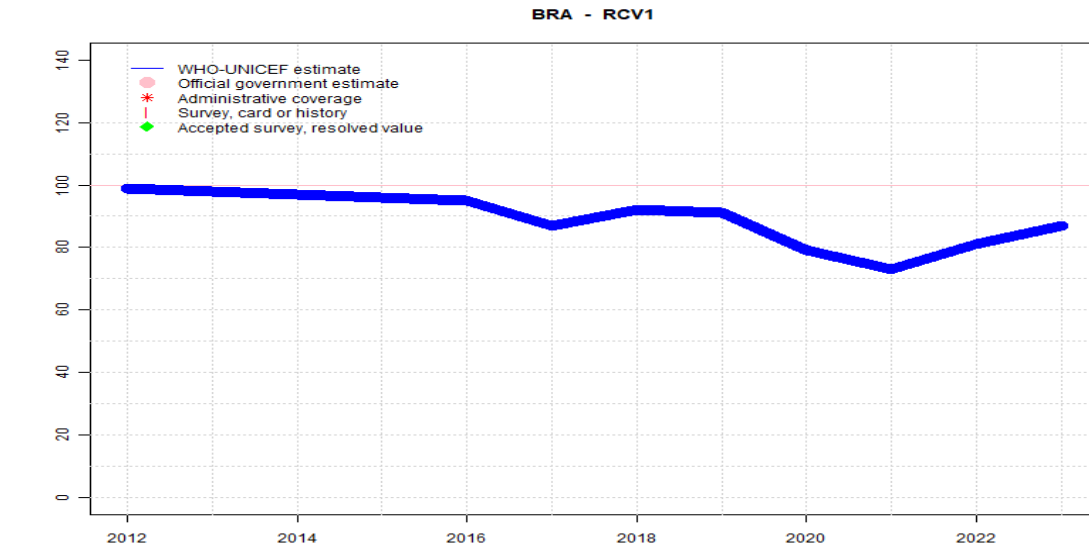
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate informed by reported data. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Programme reports one month vaccine stockout. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+ D+
- 2015: Estimate informed by reported data. Programme reports one month stockout of MMR vaccine. GoC=R+ D+
- 2014: Estimate informed by interpolation between reported data. Reported data excluded because 112 percent greater than 100 percent. Estimate challenged by: D-
- 2013: Estimate informed by interpolation between reported data. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: D-
- 2012: Estimate informed by reported data. GoC=R+ D+

Brazil - RCV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	99	98	97	96	95	87	92	91	79	73	81	87
Estimate GoC	●●	●	●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

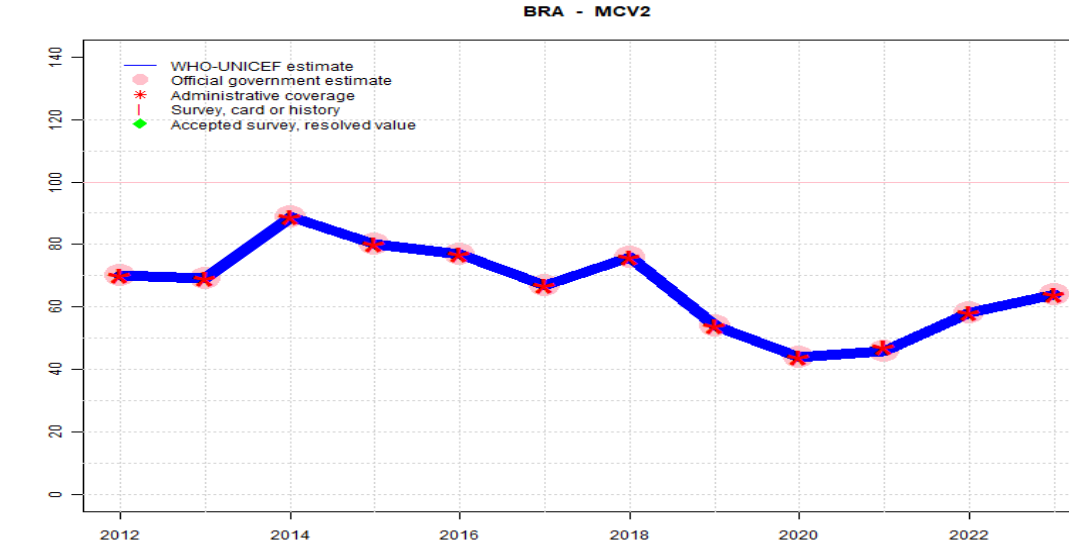
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

For this revision, coverage estimates for the first dose of rubella containing vaccine are based on WHO and UNICEF estimates of coverage of measles containing vaccine. Nationally reported coverage of rubella containing vaccine is not taken into consideration nor are they represented in the the accompanying graph and data table.

- 2023: Estimate based on estimated MCV1. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate based on estimated MCV1. GoC=R+ D+
- 2021: Estimate based on estimated MCV1. GoC=R+ D+
- 2020: Estimate based on estimated MCV1. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=R+ D+
- 2019: Estimate based on estimated MCV1. GoC=R+ D+
- 2018: Estimate based on estimated MCV1. GoC=R+ D+
- 2017: Estimate based on estimated MCV1. Programme reports one month vaccine stockout. GoC=R+ D+
- 2016: Estimate based on estimated MCV1. GoC=R+ D+
- 2015: Estimate based on estimated MCV1. Programme reports one month stockout of MMR vaccine. GoC=R+ D+
- 2014: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2013: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2012: Estimate based on estimated MCV1. GoC=R+ D+



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	70	69	89	80	77	67	76	54	44	46	58	64
Estimate GoC	•	••	••	••	••	••	••	••	••	••	••	••
Official	70	69	89	80	77	67	76	54	44	46	58	64
Administrative	70	69	89	80	77	67	76	54	44	47	58	64
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

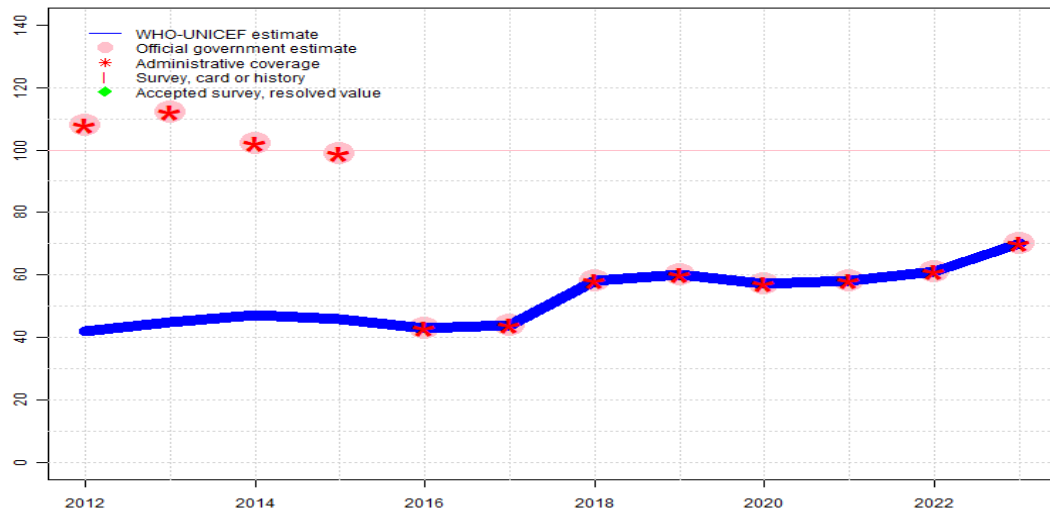
Description:

Coverage estimates for the second dose of measles containing vaccine are for children by the nationally recommended age.

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate informed by reported data. . GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=R+ D+
- 2019: Estimate informed by reported data. . GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Programme reports one month vaccine stockout. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+ D+
- 2015: Estimate informed by reported data. Programme reports one month stockout of MMR vaccine. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by reported data. GoC=R+ D+
- 2012: Estimate informed by reported data. Estimate challenged by: D-

Brazil - YFV

BRA - YFV



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	42	45	47	46	43	44	58	60	57	58	61	70
Estimate GoC	•	•	•	•	••	••	••	••	••	••	••	••
Official	108	112	102	99	43	44	58	60	57	58	61	70
Administrative	108	112	102	99	43	44	58	60	57	58	61	70
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2023: Estimate informed by reported data. No nationally representative independent assessment for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality independent assessment to verify reported levels of coverage. GoC=R+ D+
- 2022: Estimate informed by reported data. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. A nationwide study by Silveira et al. (doi.org/10.1016/j.vaccine.2021.04.046) observed that the COVID-19 pandemic was associated with a 20 percent decrease in childhood vaccinations though much of the decline was indicated to be reversed by the end of 2020, an observation that is not supported by the reported data. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. Programme reports one month vaccine stockout. GoC=R+ D+
- 2016: Programme reports coverage for a national target population, in contrast to previous years. Programme reports one month vaccine stockout. GoC=R+ D+
- 2015: Estimate of 46 percent assigned by working group. Reported coverage of 99 percent in 46 percent of the national target population. Estimate is based on coverage achieved in the total annual national target population. GoC=Assigned by working group. GoC assigned to maintain consistency across vaccines.
- 2014: Estimate of 47 percent assigned by working group. Programme reports 102 percent coverage in 46 percent of the national target population. Estimate is based on coverage achieved in the total annual national target population. Reported data excluded because 102 percent greater than 100 percent. GoC=Assigned by working group. GoC assigned to maintain consistency across vaccines.
- 2013: Reported data calibrated to 2012 and 2014 levels. Reported data excluded because 112 percent greater than 100 percent. GoC=Assigned by working group. GoC assigned to maintain consistency across vaccines.
- 2012: Estimate of 42 percent assigned by working group. Forty six percent of surviving infants living in yellow fever endemic areas. Reported data excluded. Reported data are based on subnational coverage for at-risk population sub groups. Reported data excluded because 108 percent greater than 100 percent. GoC=Assigned by working group. GoC assigned to maintain consistency across vaccines.

Further information and estimates for previous years are available at:

<https://data.unicef.org/topic/child-health/immunization/>

<https://immunizationdata.who.int/listing.html>