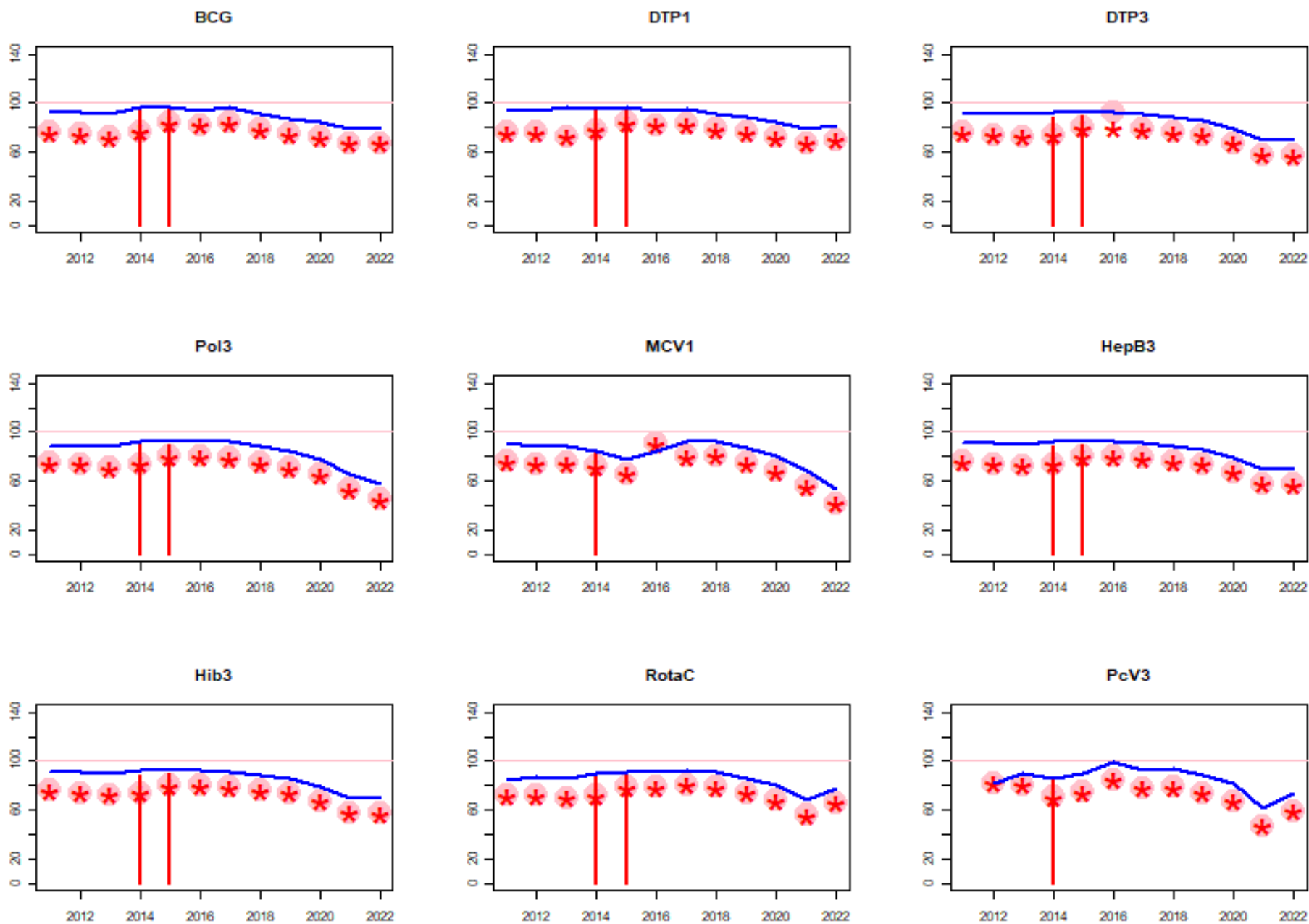


Paraguay: WHO and UNICEF estimates of immunization coverage: 2022 revision



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 the 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 the available empirical data accurately reflect immunization system performance and those where the data are likely to be compromised and present a misleading view of immunization coverage while jointly estimating the most likely coverage levels for each country.

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. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.

*Burton et al. 2012. A formal representation of the WHO and UNICEF estimates of national immunization coverage: a computational logic approach.

*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around the WHO and UNICEF estimates of national immunization coverage.

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 months 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 the period of data collection.

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 among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the 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.

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.

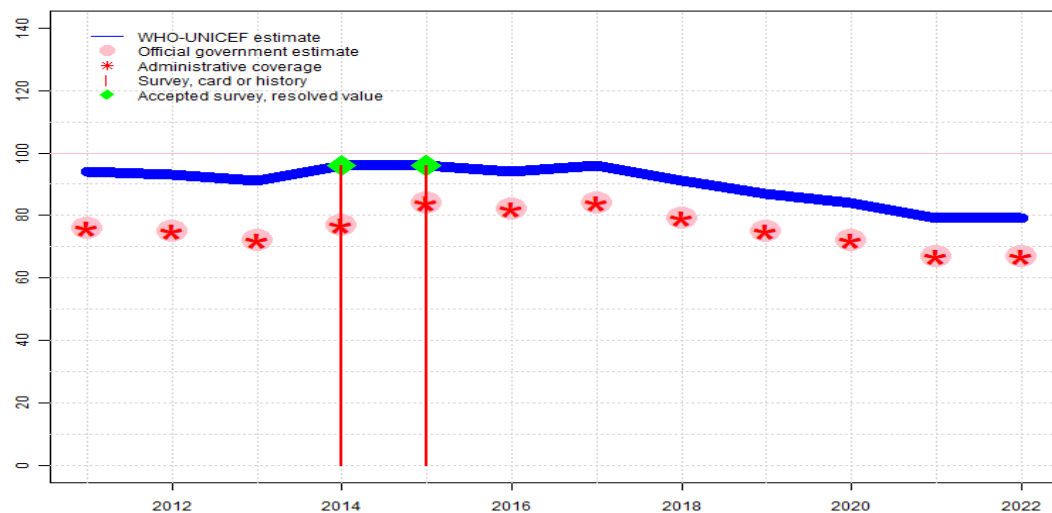
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect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

Disclaimer: All reasonable precautions have been taken by the World Health Organization and United Nations Children's Fund to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization or United Nations Children's Fund be liable for damages arising from its use.

Paraguay - BCG

PRY - BCG



Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-
- 2021: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2020: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2015 levels. Estimate challenged by: D-R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 96 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 96 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	94	93	91	96	96	94	96	91	87	84	79	79
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	76	75	72	77	84	82	84	79	75	72	67	67
Administrative	76	75	72	77	84	82	84	79	75	72	67	67
Survey	NA	NA	NA	96	96	NA	NA	NA	NA	NA	NA	NA

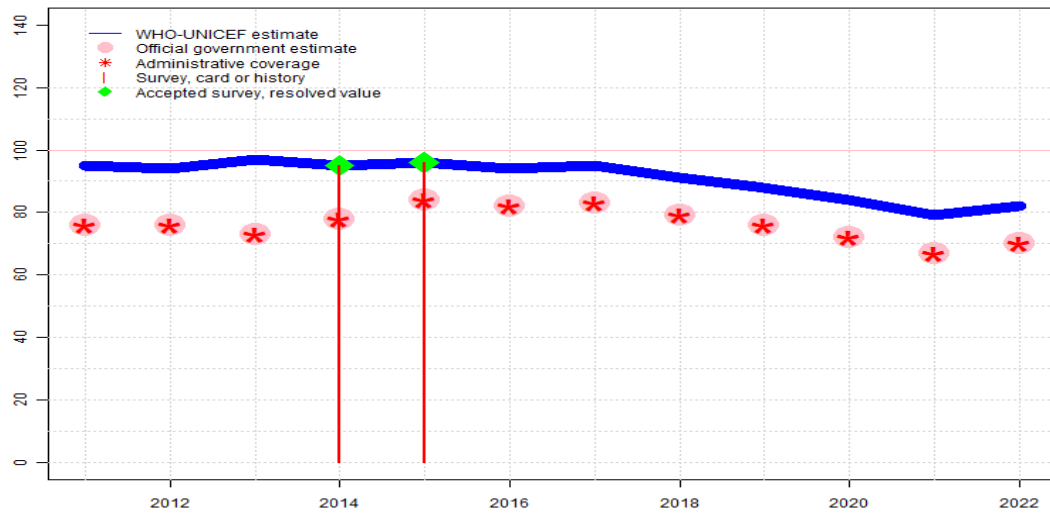
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Paraguay - DTP1

PRY - DTP1



Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-
- 2021: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2020: Reported data calibrated to 2015 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2016: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 96 percent based on 1 survey(s). Programme reports one month national level stockout of DTP containing vaccine. Estimate challenged by: R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 95 percent based on 1 survey(s). Estimate challenged by: R-
- 2013: DTP1 coverage estimated based on DTP3 coverage of 91. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	94	97	95	96	94	95	91	88	84	79	82
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	76	76	73	78	84	82	83	79	76	72	67	70
Administrative	76	76	73	78	84	82	83	79	76	72	67	70
Survey	NA	NA	NA	95	96	NA	NA	NA	NA	NA	NA	NA

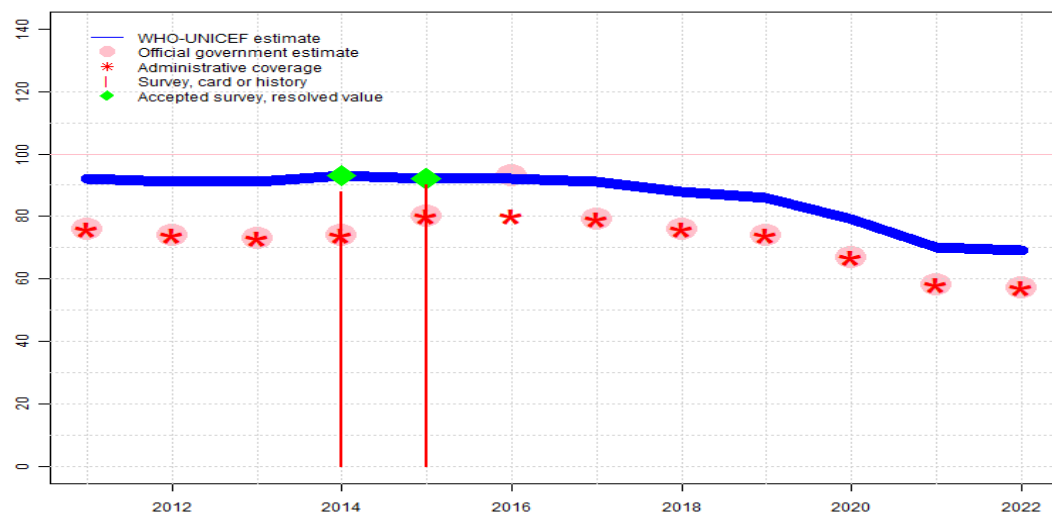
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Paraguay - DTP3

PRY - DTP3



Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-
- 2021: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2020: Reported data calibrated to 2015 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2016: Reported data calibrated to 2015 levels. Reported data excluded due to an increase from 80 percent to 93 percent with decrease 79 percent. Estimate challenged by: R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 92 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 90 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 89 percent and 3rd dose card only coverage of 85 percent. Programme reports one month national level stockout of DTP containing vaccine. Estimate challenged by: R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 93 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 88 percent modified for recall bias to 93 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 83 percent and 3rd dose card only coverage of 81 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	92	91	91	93	92	92	91	88	86	79	70	69
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	76	74	73	74	80	93	79	76	74	67	58	57
Administrative	76	74	73	74	80	80	79	76	74	67	58	57
Survey	NA	NA	NA	88	90	NA	NA	NA	NA	NA	NA	NA

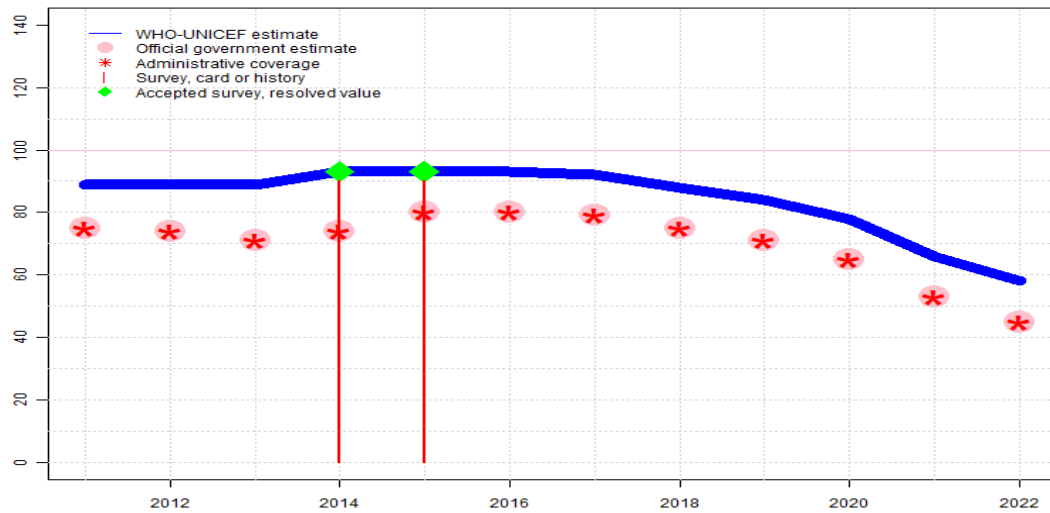
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Paraguay - Pol3

PRY - Pol3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	89	89	89	93	93	93	92	88	84	78	66	58
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	75	74	71	74	80	80	79	75	71	65	53	45
Administrative	75	74	71	74	80	80	79	75	71	65	53	45
Survey	NA	NA	NA	90	90	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.

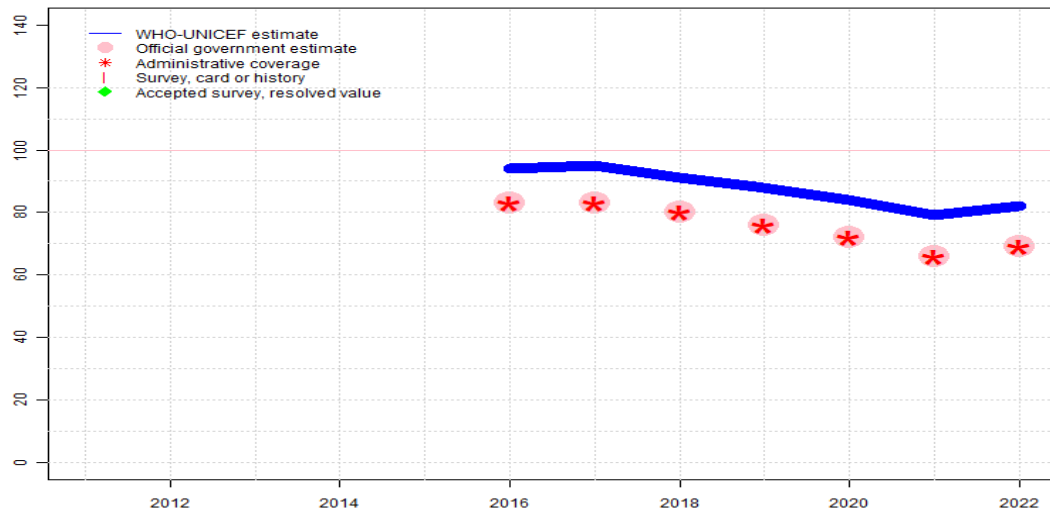
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2015 levels. While the decline in reported coverage, which reflects a greater than a 10 percentage point change from the prior year, is unexplained, estimated coverage reflects the trend in reported data. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2015 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Programme reports a two months national level vaccine stockout. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2015 levels. Estimate challenged by: D-R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 93 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 90 percent modified for recall bias to 93 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 89 percent and 3rd dose card only coverage of 85 percent. Estimate challenged by: D-R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 93 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 90 percent modified for recall bias to 93 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 84 percent and 3rd dose card only coverage of 82 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

Paraguay - IPV1

PRY - IPV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	94	95	91	88	84	79	82
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	83	83	80	76	72	66	69
Administrative	NA	NA	NA	NA	NA	83	83	80	76	72	66	69
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:

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).

2022: Estimate informed by estimated DTP1 coverage level. Reported number of doses administered increased 5 percent from 2021 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-

2021: Estimate is based on estimated DTP1 coverage. Estimate challenged by: D-R-

2020: Estimate based on DTP1 estimated coverage. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: R-

2019: Estimate based on estimated DTP1 coverage. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: R-

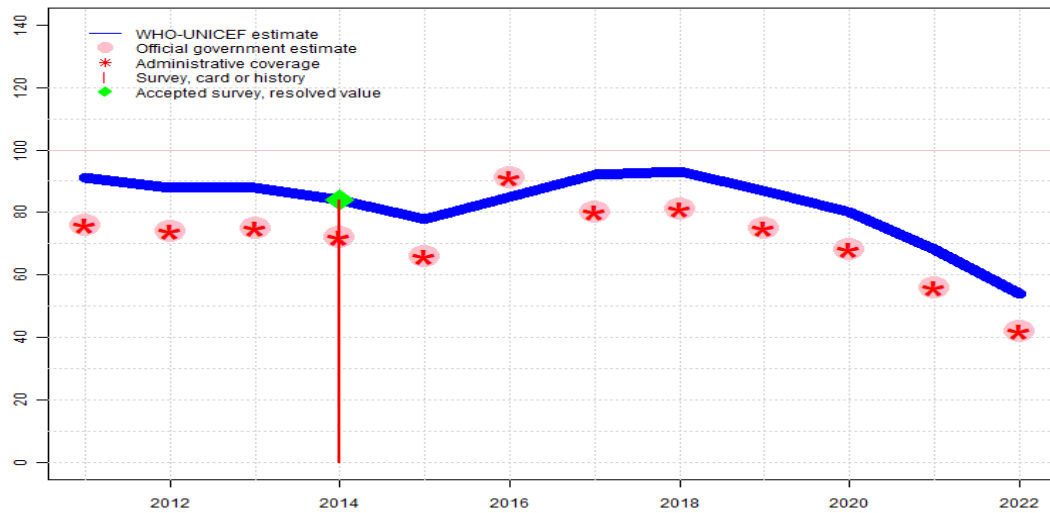
2018: Estimate based on estimated DTP1 coverage. Estimate challenged by: R-

2017: Estimate based on DTP1. Estimate challenged by: R-

2016: Inactivated polio vaccine introduced during 2015. Reporting began in 2016. Estimate based on DTP1. Estimate challenged by: R-

Paraguay - MCV1

PRY - MCV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	91	88	88	84	78	85	92	93	87	80	68	54
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	76	74	75	72	66	91	80	81	75	68	56	42
Administrative	76	74	75	72	66	91	80	81	75	68	56	42
Survey	NA	NA	NA	84	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.

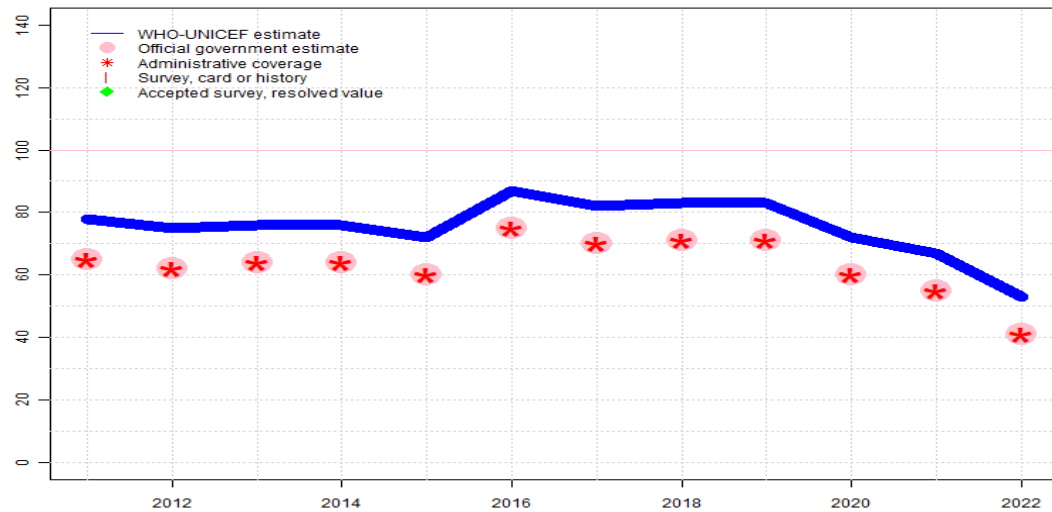
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2022: Reported data calibrated to 2014 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. A two-fold decrease in the reported number of MCV1 doses administered from 2018 to 2023 for a target population of consistent size is of great concern. WHO and UNICEF are aware of a national MMR vaccination campaign during November-December 2022 and encourage continued attention towards improving delivery of routine doses of measles containing vaccine. Programme notes prioritizing campaign doses over routine doses. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2014 levels. While the decline in reported coverage, which reflects a greater than a 10 percentage point change from the prior year, is unexplained, estimated coverage reflects the trend in reported data. Estimate challenged by: R-
- 2020: Reported data calibrated to 2014 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2014 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 levels. Vaccine used is measles-mumps-rubella. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 levels. . Estimate challenged by: R-
- 2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported increase in coverage likely reflects recovery following stockout; however, reported coverage level represents highest level to date. Reported data excluded due to an increase from 66 percent to 91 percent with decrease 80 percent. Estimate challenged by: R-
- 2015: Reported data calibrated to 2014 levels. Programme reports three months national level stockout. Estimate challenged by: D-R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 84 percent based on 1 survey(s). Estimate challenged by: R-
- 2013: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-

Paraguay - MCV2

PRY - MCV2



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	78	75	76	76	72	87	82	83	83	72	67	53
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	65	62	64	64	60	75	70	71	71	60	55	41
Administrative	65	62	64	64	60	75	70	71	71	60	55	41
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.

2022: Reported data calibrated to 2014 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. A two-fold decrease in the reported number of MCV2 doses administered from 2018 to 2023 for a target population of consistent size is of great concern. WHO and UNICEF are aware of a national MMR vaccination campaign during November-December 2022 and encourage continued attention towards improving delivery of routine doses of measles containing vaccine. Estimate challenged by: D-R-

2021: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-

2020: Reported data calibrated to 2014 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Vaccine used is measles-mumps-rubella. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 levels. Increase in coverage reflects recovery following stockout. Estimate challenged by: D-R-

2015: Reported data calibrated to 2014 levels. Programme reports three months national level stockout. Estimate challenged by: R-

2014: Estimate of 76 percent assigned by working group. Based on relationship between reported and survey results for MCV1. Estimate challenged by: R-

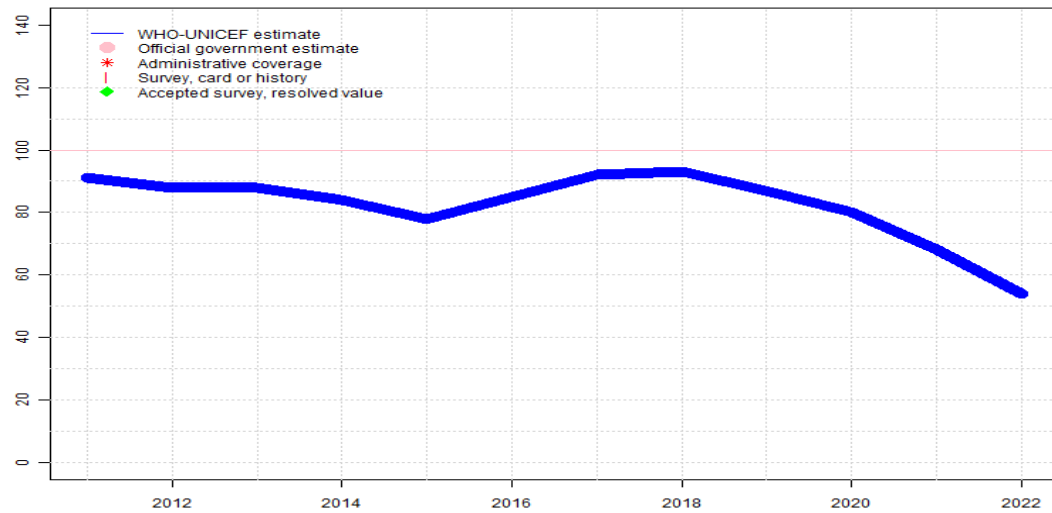
2013: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

2012: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

2011: Reported data calibrated to 2008 and 2014 levels. Estimate challenged by: R-

Paraguay - RCV1

PRY - RCV1



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.

2022: Estimate based on estimated MCV1. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-R-

2021: Estimate based on estimated MCV1. Estimate challenged by: R-

2020: Estimate based on estimated MCV1. Estimate challenged by: R-

2019: Estimate based on estimated MCV1. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: D-R-

2018: Estimate based on estimated MCV1. Vaccine used is measles-mumps-rubella. Estimate challenged by: D-R-

2017: Estimate based on estimated MCV1. Estimate challenged by: R-

2016: Estimate based on estimated MCV1. Estimate challenged by: R-

2015: Estimate based on estimated MCV1. Programme reports three months national level stockout. Estimate challenged by: D-R-

2014: Estimate based on estimated MCV1. Estimate challenged by: R-

2013: Estimate based on estimated MCV1. Estimate challenged by: R-

2012: Estimate based on estimated MCV1. Estimate challenged by: R-

2011: Estimate based on estimated MCV1. Estimate challenged by: R-

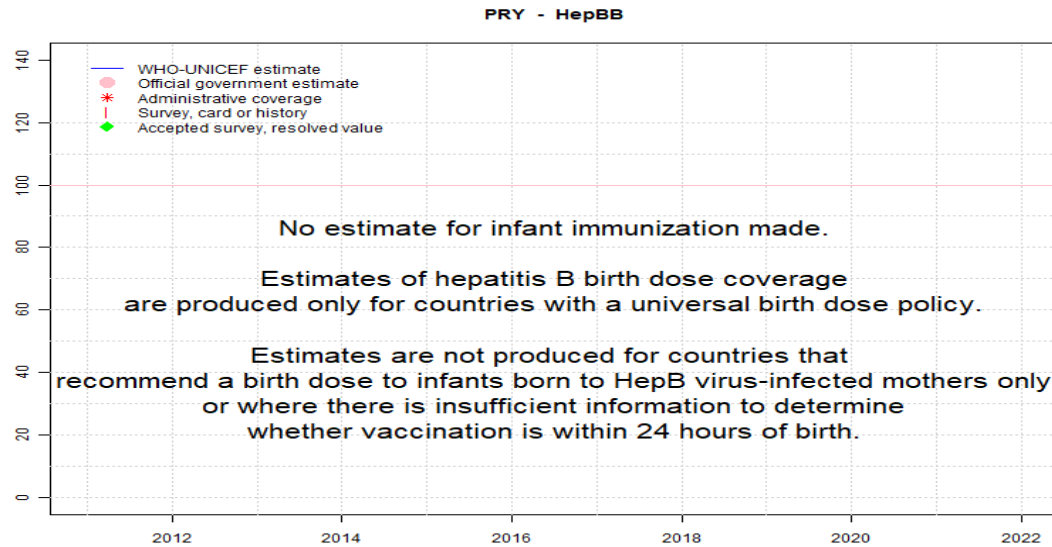
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	91	88	88	84	78	85	92	93	87	80	68	54
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Paraguay - HepBB



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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

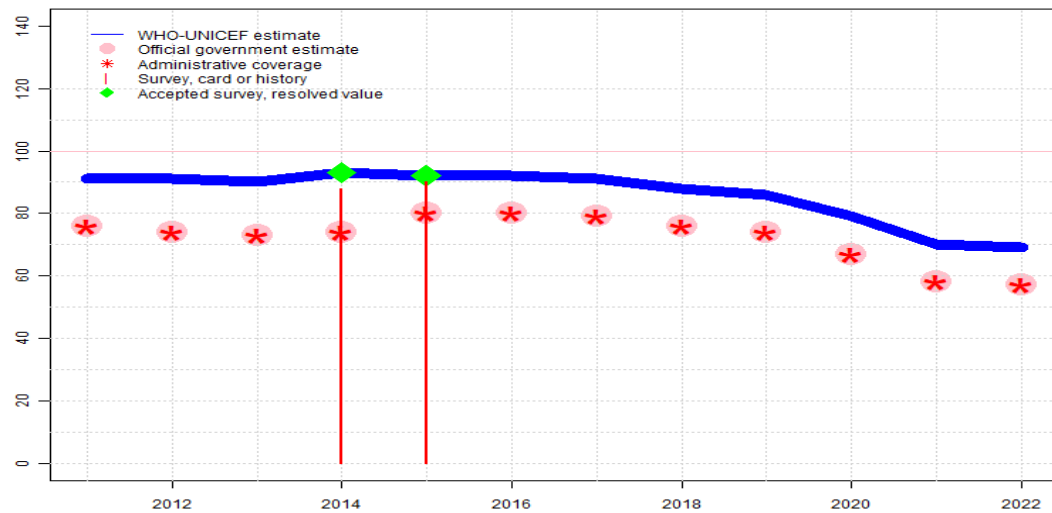
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Paraguay - HepB3

PRY - HepB3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	91	91	90	93	92	92	91	88	86	79	70	69
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	76	74	73	74	80	80	79	76	74	67	58	57
Administrative	76	74	73	74	80	80	79	76	74	67	58	57
Survey	NA	NA	NA	88	90	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.

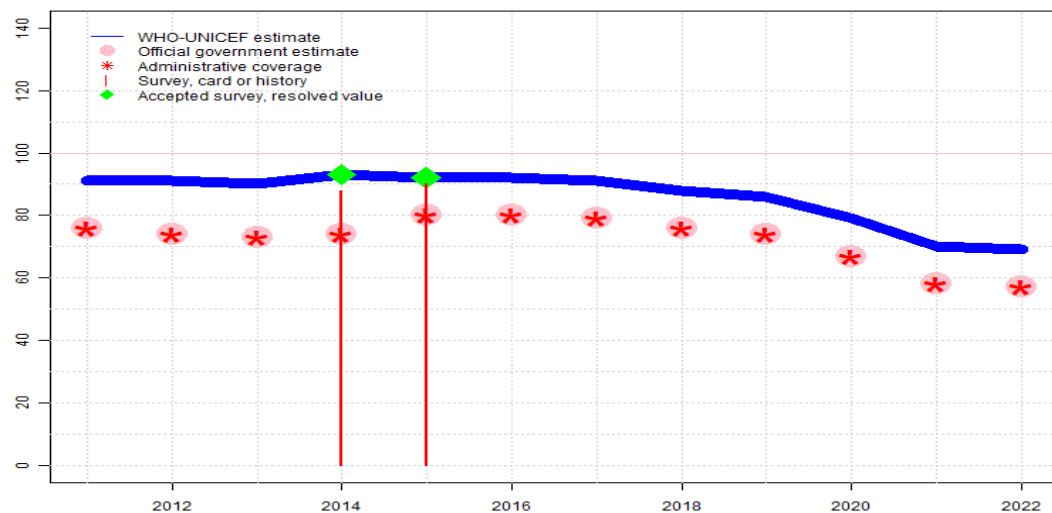
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-
- 2021: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2020: Reported data calibrated to 2015 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2016: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 92 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 90 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 89 percent and 3rd dose card only coverage of 85 percent. Programme reports one month national level stockout of DTP containing vaccine. Estimate challenged by: R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 93 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 88 percent modified for recall bias to 93 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 83 percent and 3rd dose card only coverage of 81 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-

Paraguay - Hib3

PRY - Hib3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	91	91	90	93	92	92	91	88	86	79	70	69
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	76	74	73	74	80	80	79	76	74	67	58	57
Administrative	76	74	73	74	80	80	79	76	74	67	58	57
Survey	NA	NA	NA	88	90	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.

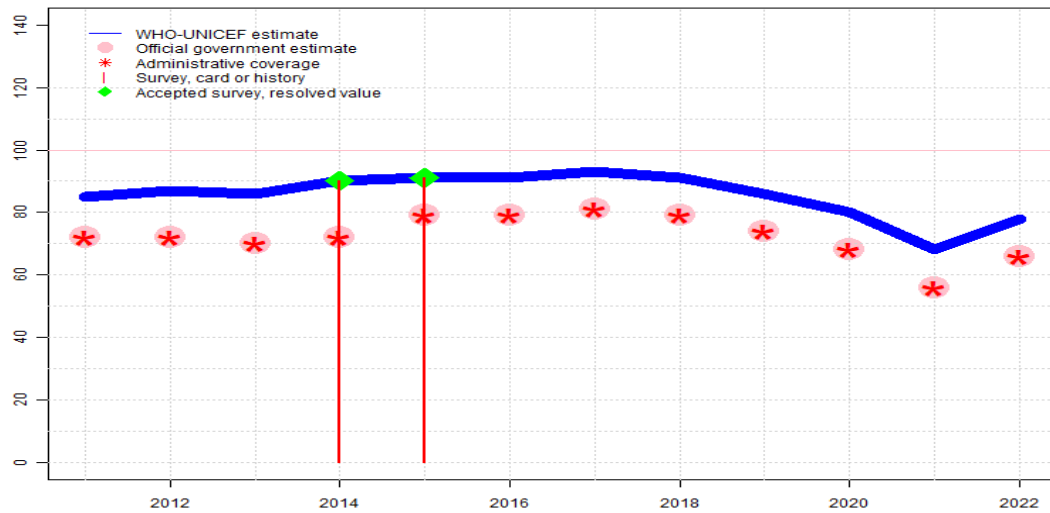
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-
- 2021: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2020: Reported data calibrated to 2015 levels. Programme reports a one month vaccine stockout at national and subnational levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2016: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 92 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 90 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 89 percent and 3rd dose card only coverage of 85 percent. Programme reports one month national level stockout of DTP containing vaccine. Estimate challenged by: R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 93 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 88 percent modified for recall bias to 93 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 83 percent and 3rd dose card only coverage of 81 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 2009 and 2014 levels. Estimate challenged by: R-

Paraguay - RotaC

PRY - RotaC



Description:

- 2022: Reported data calibrated to 2015 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: R-
- 2021: Reported data calibrated to 2015 levels. While the decline in reported coverage, which reflects a greater than a 10 percentage point change from the prior year, is unexplained, estimated coverage reflects the trend in reported data. Estimate challenged by: R-
- 2020: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2019: Reported data calibrated to 2015 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: R-
- 2018: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2017: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2016: Reported data calibrated to 2015 levels. Estimate challenged by: R-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 91 percent based on 1 survey(s). Estimate challenged by: R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 90 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2011 and 2014 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 2011 and 2014 levels. Estimate challenged by: R-
- 2011: Estimate of 85 percent assigned by working group. An in-depth assessment of data quality suggested higher coverage than reported. Estimate of births are under review by the National Statistical Office. Estimate is based on an adjustment derived from the difference between estimated third dose of DTP containing vaccine and official government coverage. Estimate challenged by: R-

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	85	87	86	90	91	91	93	91	86	80	68	78
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	72	72	70	72	79	79	81	79	74	68	56	66
Administrative	72	72	70	72	79	79	81	79	74	68	56	66
Survey	NA	NA	NA	90	91	NA	NA	NA	NA	NA	NA	NA

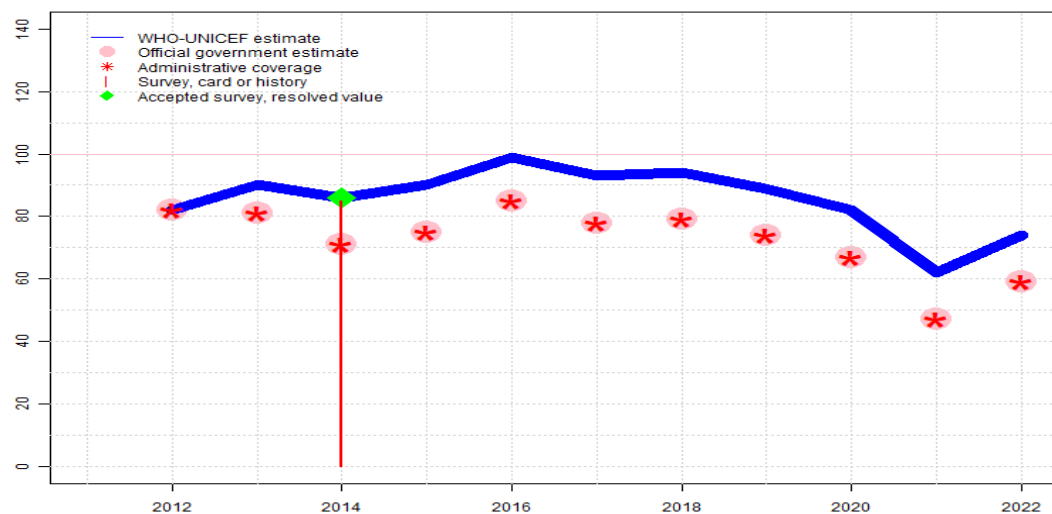
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Paraguay - PcV3

PRY - PcV3



Description:

- 2022: Reported data calibrated to 2014 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports three months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2014 levels. While the decline in reported coverage, which reflects a greater than a 10 percentage point change from the prior year, is unexplained, estimated coverage reflects the trend in reported data. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2014 levels. Programme reports a two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2019: Reported data calibrated to 2014 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-S-
- 2015: Reported data calibrated to 2014 levels. Programme reports one month national level stockout. Estimate challenged by: D-R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 86 percent based on 1 survey(s). Paraguay Multiple Indicator Cluster Survey 2016 card or history results of 85 percent modified for recall bias to 86 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 84 percent and 3rd dose card only coverage of 78 percent. Estimate challenged by: R-
- 2013: Estimate of 90 percent assigned by working group. Estimate is based on an adjustment applied to the official government estimate based on the difference between the estimated MCV1 and official government estimate for MCV1. Estimate challenged by: R-
- 2012: Estimate is based on reported data during introduction year. Pneumococcal vaccine introduced in 2012. GoC=Assigned by working group. .

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	82	90	86	90	99	93	94	89	82	62	74
Estimate GoC	NA	•	•	•	•	•	•	•	•	•	•	•
Official	NA	82	81	71	75	85	78	79	74	67	47	59
Administrative	NA	82	81	71	75	85	78	79	74	67	47	59
Survey	NA	NA	NA	85	NA	NA	NA	NA	NA	NA	NA	NA

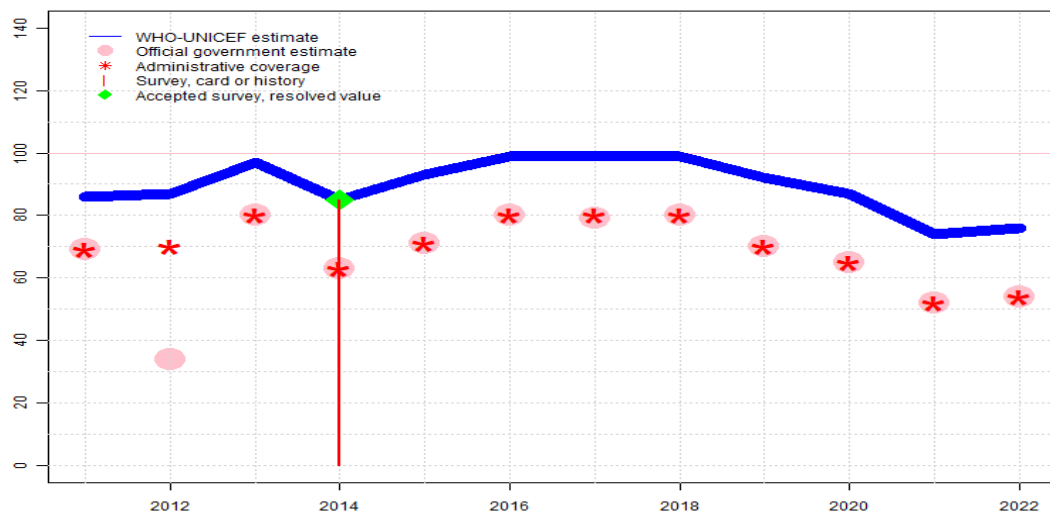
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Paraguay - YFV

PRY - YFV



Description:

- 2022: Reported data calibrated to 2014 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports one month vaccine stockout at national level. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2014 levels. While the decline in reported coverage, which reflects a greater than a 10 percentage point change from the prior year, is unexplained, estimated coverage reflects the trend in reported data. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2014 levels. Programme reports a two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2019: Reported data calibrated to 2014 levels. Beginning in late 2018, the programme notes transition to use of an online electronic nominal immunization registry. Information is not available on the percentage of health facilities with the system up and fully operational. Thus, it is possible that administrative data do not capture all facility level reports. Programme reports a one month national level vaccine stockout. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-S-
- 2015: Reported data calibrated to 2014 levels. Estimate challenged by: D-R-
- 2014: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 85 percent based on 1 survey(s). Unexplained decline in coverage. Estimate challenged by: D-R-
- 2013: Estimate of 97 percent assigned by working group. Coverage level follows official government estimated with adjustment based on difference between estimated coverage and official government estimate for MCV1. Reported data excluded due to an increase from 34 percent to 80 percent with decrease 63 percent. Estimate challenged by: R-S-
- 2012: Estimate of 87 percent assigned by working group. Coverage level follows official government estimated with adjustment based on difference between estimated coverage and official government estimate for MCV1. Reported data excluded due to decline in reported coverage from 69 percent to 34 percent with increase to 80 percent. Estimate challenged by: D-R-
- 2011: Estimate of 86 percent assigned by working group. Coverage level follows official government estimated with adjustment based on difference between estimated coverage and official government estimate for MCV1. Estimate challenged by: D-R-

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	86	87	97	85	93	99	99	99	92	87	74	76
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	69	34	80	63	71	80	79	80	70	65	52	54
Administrative	69	70	80	63	71	80	80	80	70	65	52	54
Survey	NA	NA	NA	85	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.

Paraguay - survey details

NOTE: A survey to measure vaccination coverage for infants (i.e., children aged 0 to 11 months) will sample children aged 12 to 23 months at the time of survey to capture the youngest annual cohort of children who should have completed the vaccination schedule. Because WUENIC are for infant vaccinations, survey data in this report are presented to reflect the birth year of the youngest survey cohort. For example, results for a survey conducted during December 2020 among children aged 12 to 23 months at the time of the survey reflect the immunization experience of children born in 2019. Depending on the timing of survey field work, results may reflect the immunization experience of children born and vaccinated 1 or 2 years prior to the survey field work.

2015 Paraguay Multiple Indicator Cluster Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	96	12-23 m	993	89
BCG	Card	87.7	12-23 m	993	89
BCG	Card or History	96.1	12-23 m	993	89
BCG	History	8.4	12-23 m	993	89
DTP1	C or H <12 months	96.1	12-23 m	993	89
DTP1	Card	89.3	12-23 m	993	89
DTP1	Card or History	96.2	12-23 m	993	89
DTP1	History	6.9	12-23 m	993	89
DTP3	C or H <12 months	87.3	12-23 m	993	89
DTP3	Card	85.3	12-23 m	993	89
DTP3	Card or History	90.2	12-23 m	993	89
DTP3	History	5	12-23 m	993	89
HepB1	C or H <12 months	96.1	12-23 m	993	89
HepB1	Card	89.3	12-23 m	993	89
HepB1	Card or History	96.2	12-23 m	993	89
HepB1	History	6.9	12-23 m	993	89
HepB3	C or H <12 months	87.3	12-23 m	993	89
HepB3	Card	85.3	12-23 m	993	89
HepB3	Card or History	90.2	12-23 m	993	89
HepB3	History	5	12-23 m	993	89
Hib1	C or H <12 months	96.1	12-23 m	993	89
Hib1	Card	89.3	12-23 m	993	89
Hib1	Card or History	96.2	12-23 m	993	89
Hib1	History	6.9	12-23 m	993	89

Hib3	C or H <12 months	87.3	12-23 m	993	89
Hib3	Card	85.3	12-23 m	993	89
Hib3	Card or History	90.2	12-23 m	993	89
Hib3	History	5	12-23 m	993	89
PCV1	C or H <12 months	94.9	12-23 m	993	89
PCV1	Card	88.3	12-23 m	993	89
PCV1	Card or History	95.2	12-23 m	993	89
PCV1	History	7	12-23 m	993	89
Pol1	C or H <12 months	96.5	12-23 m	993	89
Pol1	Card	89.3	12-23 m	993	89
Pol1	Card or History	96.7	12-23 m	993	89
Pol1	History	7.5	12-23 m	993	89
Pol3	C or H <12 months	87.6	12-23 m	993	89
Pol3	Card	85.2	12-23 m	993	89
Pol3	Card or History	90.5	12-23 m	993	89
Pol3	History	5.3	12-23 m	993	89
RotaC	C or H <12 months	90.5	12-23 m	993	89
RotaC	Card	84.3	12-23 m	993	89
RotaC	Card or History	91.3	12-23 m	993	89
RotaC	History	7	12-23 m	993	89

2014 Paraguay Multiple Indicator Cluster Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	95.2	24-35 m	929	89
BCG	Card	83.4	24-35 m	929	89
BCG	Card or History	95.5	24-35 m	929	89
BCG	History	12.2	24-35 m	929	89
DTP1	C or H <12 months	94.7	24-35 m	929	89
DTP1	Card	83.4	24-35 m	929	89
DTP1	Card or History	94.8	24-35 m	929	89
DTP1	History	11.4	24-35 m	929	89
DTP3	C or H <12 months	82.6	24-35 m	929	89
DTP3	Card	81.4	24-35 m	929	89
DTP3	Card or History	87.7	24-35 m	929	89
DTP3	History	6.3	24-35 m	929	89
HepB1	C or H <12 months	94.7	24-35 m	929	89
HepB1	Card	83.4	24-35 m	929	89
HepB1	Card or History	94.8	24-35 m	929	89

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HepB1	History	11.4	24-35 m	929	89
HepB3	C or H <12 months	82.6	24-35 m	929	89
HepB3	Card	81.4	24-35 m	929	89
HepB3	Card or History	87.7	24-35 m	929	89
HepB3	History	6.3	24-35 m	929	89
Hib1	C or H <12 months	94.7	24-35 m	929	89
Hib1	Card	83.4	24-35 m	929	89
Hib1	Card or History	94.8	24-35 m	929	89
Hib1	History	11.4	24-35 m	929	89
Hib3	C or H <12 months	82.6	24-35 m	929	89
Hib3	Card	81.4	24-35 m	929	89
Hib3	Card or History	87.7	24-35 m	929	89
Hib3	History	6.3	24-35 m	929	89
MCV1	C or H <12 months	83.1	24-35 m	929	89
MCV1	Card	71.9	24-35 m	929	89
MCV1	Card or History	83.8	24-35 m	929	89
MCV1	History	12	24-35 m	929	89
PCV1	C or H <12 months	92.7	24-35 m	929	89
PCV1	Card	83.6	24-35 m	929	89
PCV1	Card or History	93	24-35 m	929	89
PCV1	History	9.4	24-35 m	929	89
PCV3	C or H <12 months	84.3	24-35 m	929	89
PCV3	Card	78	24-35 m	929	89
PCV3	Card or History	85	24-35 m	929	89
PCV3	History	7	24-35 m	929	89
Pol1	C or H <12 months	94.4	24-35 m	929	89
Pol1	Card	84.1	24-35 m	929	89
Pol1	Card or History	95	24-35 m	929	89
Pol1	History	10.9	24-35 m	929	89
Pol3	C or H <12 months	85	24-35 m	929	89
Pol3	Card	82.5	24-35 m	929	89
Pol3	Card or History	89.6	24-35 m	929	89
Pol3	History	7.1	24-35 m	929	89
RotaC	C or H <12 months	88.7	24-35 m	929	89
RotaC	Card	79.5	24-35 m	929	89
RotaC	Card or History	89.5	24-35 m	929	89
RotaC	History	10	24-35 m	929	89
YFV	C or H <12 months	80.8	24-35 m	929	89
YFV	Card	74.6	24-35 m	929	89
YFV	Card or History	85	24-35 m	929	89

YFV	History	10.3	24-35 m	929	89
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2010 Encuesta Nacional sobre Coberturas de Vacunación en niños de 12 a 35 meses de edad, Paraguay, 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	95	12-35 m	3189	-
DTP1	Card or History	94	12-35 m	3189	-
DTP3	Card or History	93	12-35 m	3189	-
HepB1	Card or History	94	12-35 m	3189	-
HepB3	Card or History	93	12-35 m	3189	-
Hib1	Card or History	94	12-35 m	3189	-
Hib3	Card or History	93	12-35 m	3189	-
MCV1	Card or History	91	12-35 m	3189	-
Pol3	Card or History	93	12-35 m	3189	-
YFV	Card or History	88	12-35 m	3189	-

2008 Encuesta Demográfica y de Salud Familiar-ENDES Continua, 2009

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	93.5	18-29 m	1639	66
BCG	Card	61.3	18-29 m	1639	66
BCG	Card or History	93.7	18-29 m	1639	66
BCG	History	32.3	18-29 m	1639	66
DTP1	C or H <12 months	95.1	18-29 m	1639	66
DTP1	Card	64.9	18-29 m	1639	66
DTP1	Card or History	95.7	18-29 m	1639	66
DTP1	History	30.8	18-29 m	1639	66
DTP3	C or H <12 months	71	18-29 m	1639	66
DTP3	Card	59.6	18-29 m	1639	66
DTP3	Card or History	72.9	18-29 m	1639	66
DTP3	History	13.3	18-29 m	1639	66
MCV1	C or H <12 months	70.5	18-29 m	1639	66
MCV1	Card	53	18-29 m	1639	66
MCV1	Card or History	76.1	18-29 m	1639	66
MCV1	History	23.1	18-29 m	1639	66
Pol1	C or H <12 months	91.8	18-29 m	1639	66

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Pol1	Card	63.3	18-29 m	1639	66
Pol1	Card or History	92.3	18-29 m	1639	66
Pol1	History	29.1	18-29 m	1639	66
Pol3	C or H <12 months	66.6	18-29 m	1639	66
Pol3	Card	57.8	18-29 m	1639	66
Pol3	Card or History	67.9	18-29 m	1639	66
Pol3	History	10.1	18-29 m	1639	66

MCV1	Card	59.3	12-23 m	427	71
MCV1	Card or History	84.2	12-23 m	427	71
Pol1	Card	67.5	12-23 m	427	71
Pol1	Card or History	95.8	12-23 m	427	71
Pol3	Card	66.9	12-23 m	427	71
Pol3	Card or History	90.1	12-23 m	427	71

2007 Encuesta Nacional de Demografía y Salud Sexual y Reproductiva (ENDSSR-2004)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	70.8	12-23 m	427	71
BCG	Card or History	98.4	12-23 m	427	71
DTP1	Card	70.8	12-23 m	427	71
DTP1	Card or History	98.6	12-23 m	427	71
DTP3	Card	68.4	12-23 m	427	71
DTP3	Card or History	93.5	12-23 m	427	71

2003 Encuesta Nacional de Demografía y Salud Sexual y Reproductiva 2004 (ENDSSR-2004)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	91.6	12-23 m	898	69
DTP1	Card or History	94.9	12-23 m	898	69
DTP3	Card or History	82.8	12-23 m	898	69
MCV1	Card or History	75.2	12-23 m	898	69
Pol1	Card or History	93.8	12-23 m	898	69
Pol3	Card or History	82.2	12-23 m	898	69

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Further information and estimates for previous years are available at:

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

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