

**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.

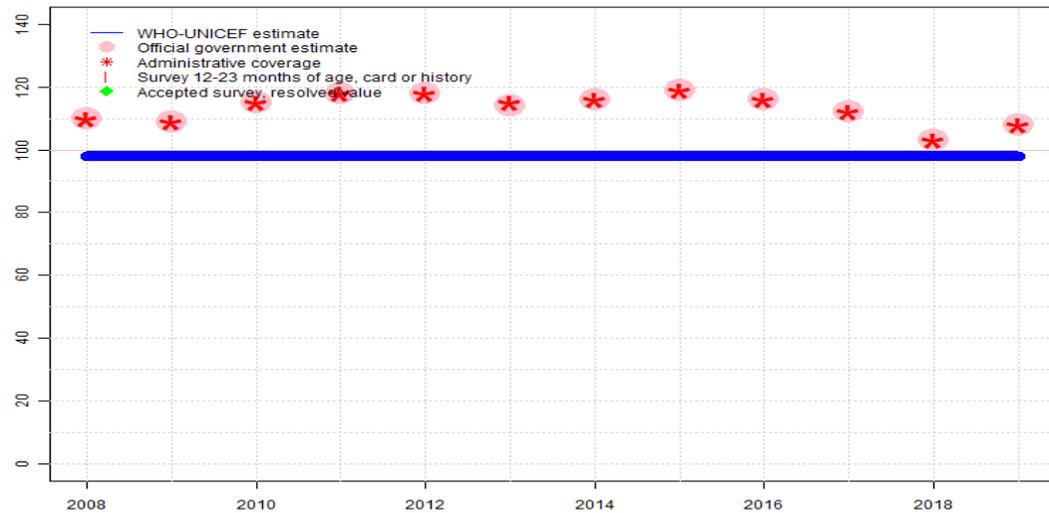
**PcV3:** percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect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

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# Nicaragua - BCG

NIC - BCG



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	98	98	98	98	98	98	98	98	98	98	98	98
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	110	109	115	118	118	114	116	119	116	112	103	108
Administrative	110	109	115	118	118	115	116	119	116	112	103	108
Survey	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: 2019 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.

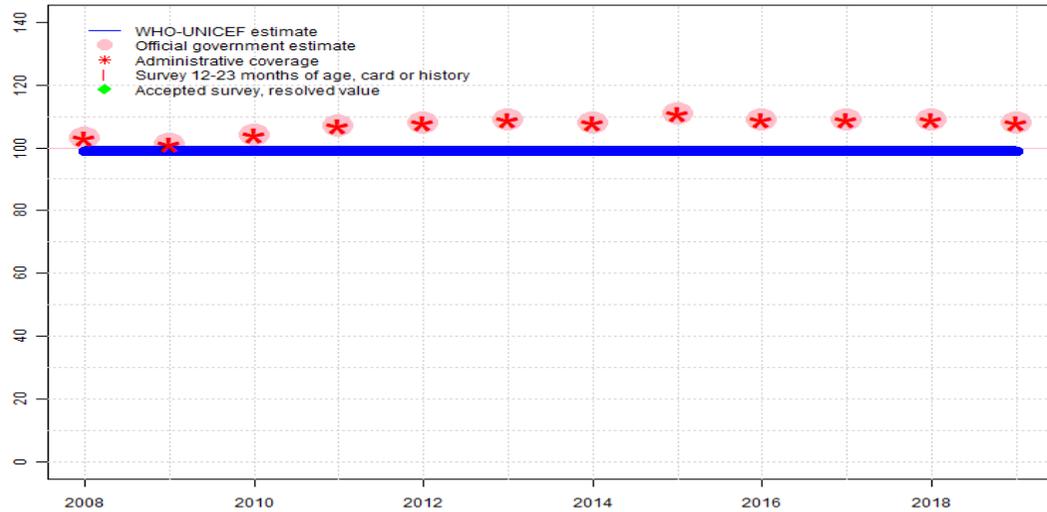
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2019: Reported data calibrated to 2006 levels. Reported data excluded because 108 percent greater than 100 percent. 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-
- 2018: Reported data calibrated to 2006 levels. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: R-
- 2017: Reported data calibrated to 2006 levels. Reported data excluded because 112 percent greater than 100 percent. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2006 levels. Reported data excluded because 116 percent greater than 100 percent. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2006 levels. Reported data excluded because 119 percent greater than 100 percent. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2006 levels. Reported data excluded because 116 percent greater than 100 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2006 levels. Reported data excluded because 114 percent greater than 100 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2006 levels. Reported data excluded because 118 percent greater than 100 percent. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 levels. Reported data excluded because 118 percent greater than 100 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 levels. Reported data excluded because 115 percent greater than 100 percent. Preliminary results from the 2011-12 ENDESA survey support coverage greater than 90 percent. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 levels. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 levels. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-R-

# Nicaragua - DTP1

NIC - DTP1



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	103	101	104	107	108	109	108	111	109	109	109	108
Administrative	103	101	104	107	108	109	108	111	109	109	109	108
Survey	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: 2019 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.

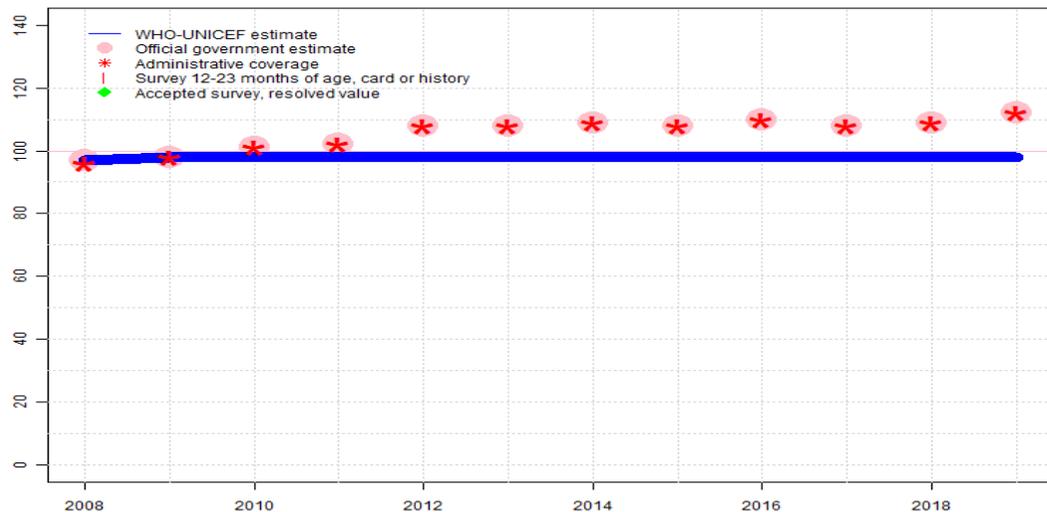
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2019: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 108 percent greater than 100 percent. 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-
- 2018: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2017: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2016: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2015: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 111 percent greater than 100 percent. Estimate challenged by: D-R-
- 2014: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-R-
- 2013: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2012: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-R-
- 2011: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: D-R-
- 2010: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 104 percent greater than 100 percent. Estimate challenged by: R-
- 2009: DTP1 coverage estimated based on DTP3 coverage of 98. Reported data excluded because 101 percent greater than 100 percent. Estimate challenged by: R-
- 2008: DTP1 coverage estimated based on DTP3 coverage of 97. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: R-

# Nicaragua - DTP3

NIC - DTP3



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	97	98	98	98	98	98	98	98	98	98	98	98
Estimate GoC	●●	●●	●●	●●	●	●	●	●	●	●	●	●
Official	97	98	101	102	108	108	109	108	110	108	109	112
Administrative	96	98	101	102	108	108	109	108	110	108	109	112
Survey	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: 2019 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.

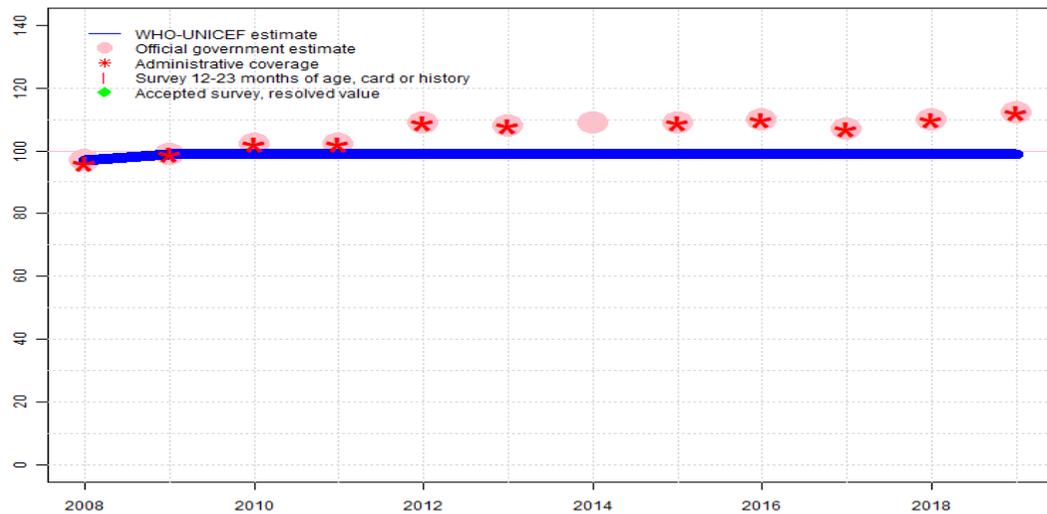
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2019: Estimate based on extrapolation from data reported by national government. Reported data excluded because 112 percent greater than 100 percent. 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-
- 2018: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-
- 2017: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2016: Estimate based on extrapolation from data reported by national government. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
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- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2012: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2011: Estimate based on extrapolation from data reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ D+
- 2010: Estimate based on extrapolation from data reported by national government. Reported data excluded because 101 percent greater than 100 percent. Preliminary results from the 2011-12 ENDESA survey support coverage greater than 90 percent. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+

# Nicaragua - Pol3

NIC - Pol3



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	97	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●	●	●	●	●	●	●	●
Official	97	99	102	102	109	108	109	109	110	107	110	112
Administrative	96	99	102	102	109	108	NA	109	110	107	110	112
Survey	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: 2019 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.

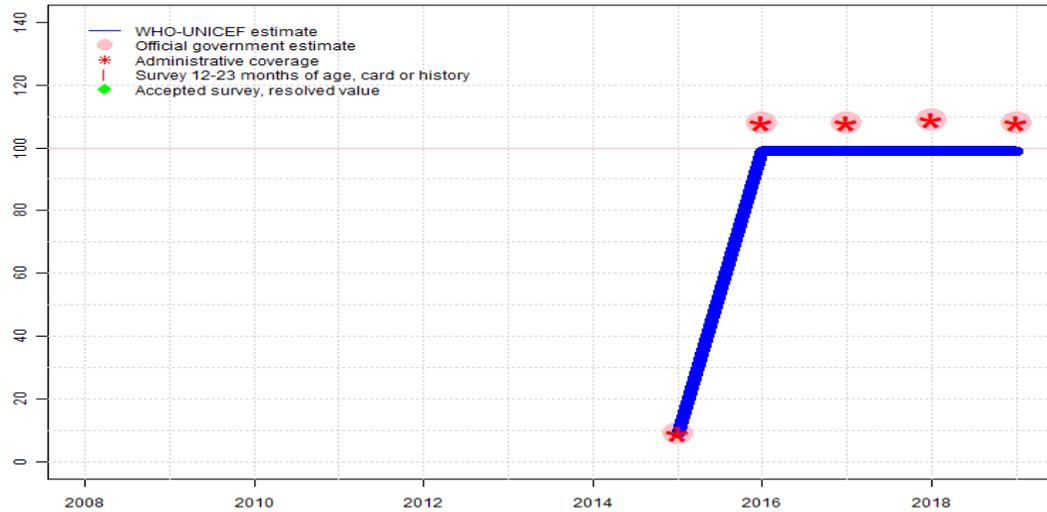
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2019: Estimate based on extrapolation from data reported by national government. Reported data excluded because 112 percent greater than 100 percent. 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-
- 2018: Estimate based on extrapolation from data reported by national government. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-
- 2017: Estimate based on extrapolation from data reported by national government. Reported data excluded because 107 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2016: Estimate based on extrapolation from data reported by national government. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2012: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-
- 2011: Estimate based on extrapolation from data reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ D+
- 2010: Estimate based on extrapolation from data reported by national government. Reported data excluded because 102 percent greater than 100 percent. Preliminary results from the 2011-12 ENDESA survey support coverage greater than 90 percent. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+

# Nicaragua - IPV1

NIC - IPV1



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	NA	9	99	99	99	99						
Estimate GoC	NA	●	●	●	●	●						
Official	NA	9	108	108	109	108						
Administrative	NA	9	108	108	109	108						
Survey	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: 2019 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).

2019: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=Assigned by working group. Consistency with other antigens.

2018: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.

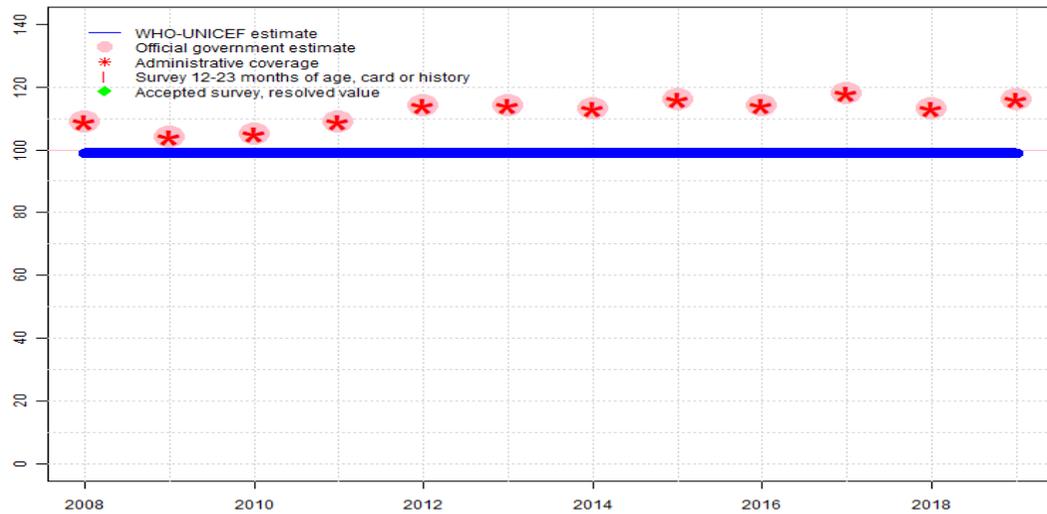
2017: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.

2016: Estimate based on coverage reported by national government. Estimate based on reported data, as IPV was introduced in late 2015. GoC=Assigned by working group. Consistency with other antigens.

2015: Estimate based on coverage reported by national government. Inactivated polio vaccine during November 2015. GoC=Assigned by working group. GoC assigned to maintain consistency across vaccines.

# Nicaragua - MCV1

NIC - MCV1



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	109	104	105	109	114	114	113	116	114	118	113	116
Administrative	109	104	105	109	114	114	113	116	114	118	113	116
Survey	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: 2019 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.

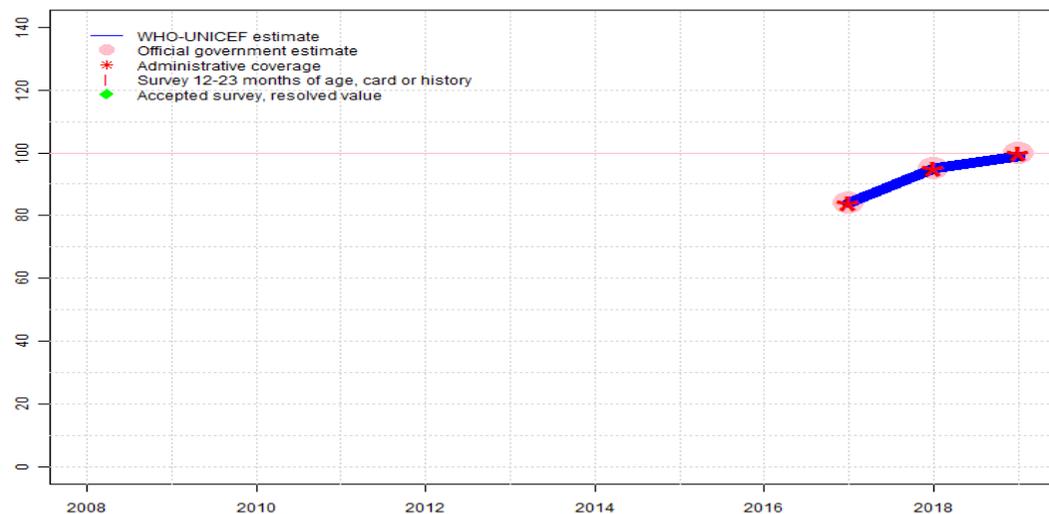
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2019: Reported data calibrated to 2006 levels. Reported data excluded because 116 percent greater than 100 percent. 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-
- 2018: Reported data calibrated to 2006 levels. Reported data excluded because 113 percent greater than 100 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2006 levels. Reported data excluded because 118 percent greater than 100 percent. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2006 levels. Reported data excluded because 114 percent greater than 100 percent. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2006 levels. Reported data excluded because 116 percent greater than 100 percent. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2006 levels. Reported data excluded because 113 percent greater than 100 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2006 levels. Reported data excluded because 114 percent greater than 100 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2006 levels. Reported data excluded because 114 percent greater than 100 percent. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 levels. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 levels. Reported data excluded because 105 percent greater than 100 percent. Preliminary results from the 2011-12 ENDESA survey support coverage greater than 85 percent. Estimate challenged by: R-
- 2009: Reported data calibrated to 2006 levels. Reported data excluded because 104 percent greater than 100 percent. Estimate challenged by: R-
- 2008: Reported data calibrated to 2006 levels. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-

# Nicaragua - MCV2

NIC - MCV2



## Description:

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

2019: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=Assigned by working group. Consistency with other antigens.

2018: Estimate based on coverage reported by national government. Increase in coverage following introduction. GoC=Assigned by working group. Consistency with other antigens.

2017: Estimate based on coverage reported by national government. Second dose of MMR vaccine introduced in January 2017 and recommended at 18 months. GoC=Assigned by working group. Consistency with other antigens.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	NA	84	95	99								
Estimate GoC	NA	•	•	•								
Official	NA	84	95	100								
Administrative	NA	84	95	100								
Survey	NA											

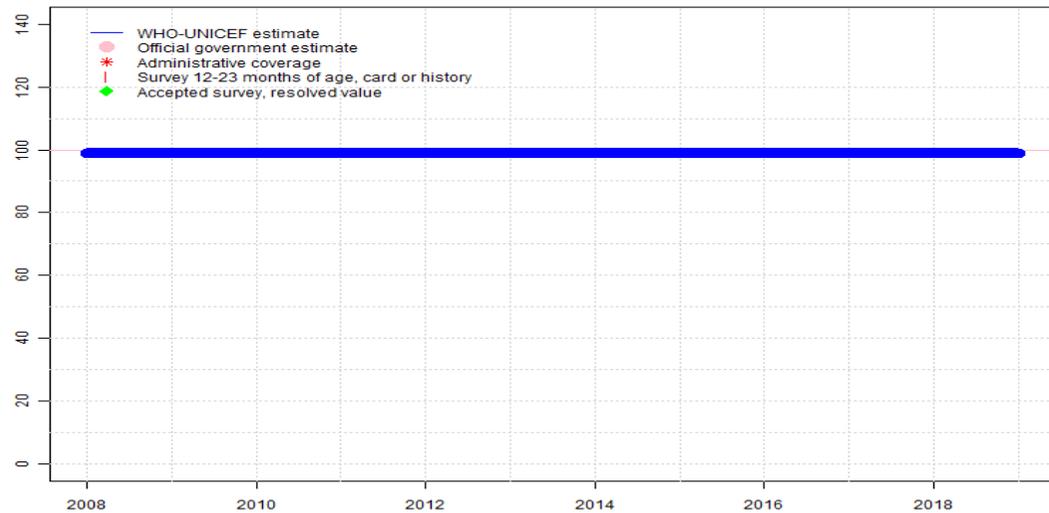
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2019 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.

# Nicaragua - RCV1

NIC - RCV1



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	NA											
Administrative	NA											
Survey	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: 2019 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.

2019: 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-

2018: Estimate based on estimated MCV1. Estimate challenged by: D-R-

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

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

2015: Estimate based on estimated MCV1. Estimate challenged by: D-R-

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

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

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

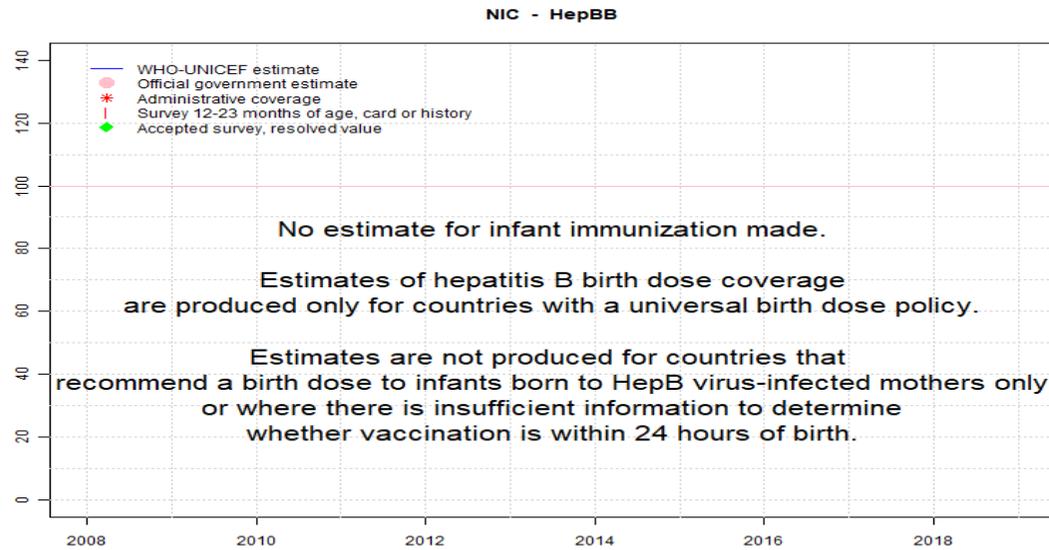
2011: Estimate based on estimated MCV1. Estimate challenged by: D-R-

2010: Estimate based on estimated MCV1. Estimate challenged by: R-

2009: Estimate based on estimated MCV1. Estimate challenged by: R-

2008: Estimate based on estimated MCV1. Estimate challenged by: D-R-

# Nicaragua - HepBB



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

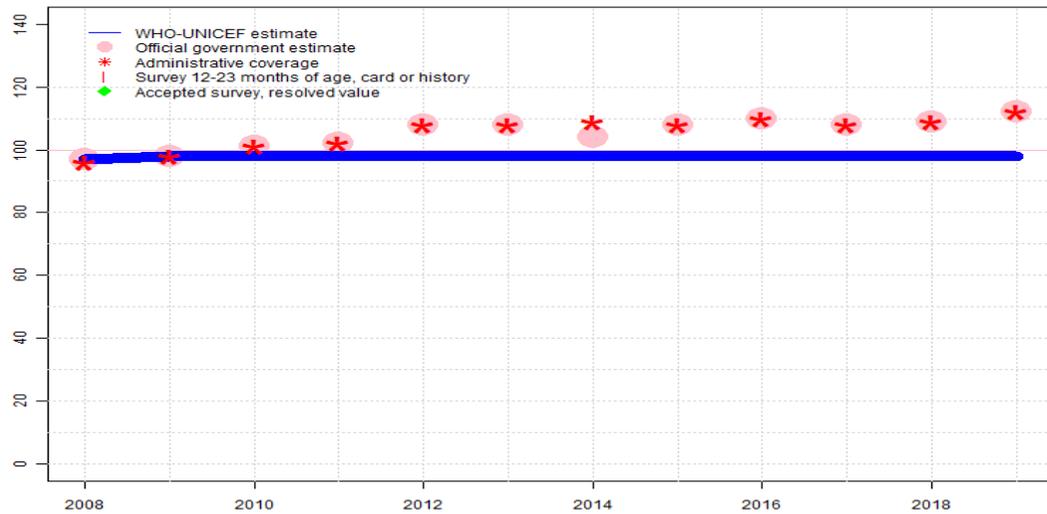
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2019 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.

# Nicaragua - HepB3

NIC - HepB3



## Description:

- 2019: Estimate based on extrapolation from data reported by national government. Reported data excluded because 112 percent greater than 100 percent. 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-
- 2018: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-
- 2017: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2016: Estimate based on extrapolation from data reported by national government. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded because 104 percent greater than 100 percent. Estimate challenged by: D-
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2012: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2011: Estimate based on extrapolation from data reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ D+
- 2010: Estimate based on extrapolation from data reported by national government. Reported data excluded because 101 percent greater than 100 percent. Preliminary results from the 2011-12 ENDESA survey support coverage greater than 90 percent. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	97	98	98	98	98	98	98	98	98	98	98	98
Estimate GoC	●●	●●	●●	●●	●	●	●	●	●	●	●	●
Official	97	98	101	102	108	108	104	108	110	108	109	112
Administrative	96	98	101	102	108	108	109	108	110	108	109	112
Survey	NA											

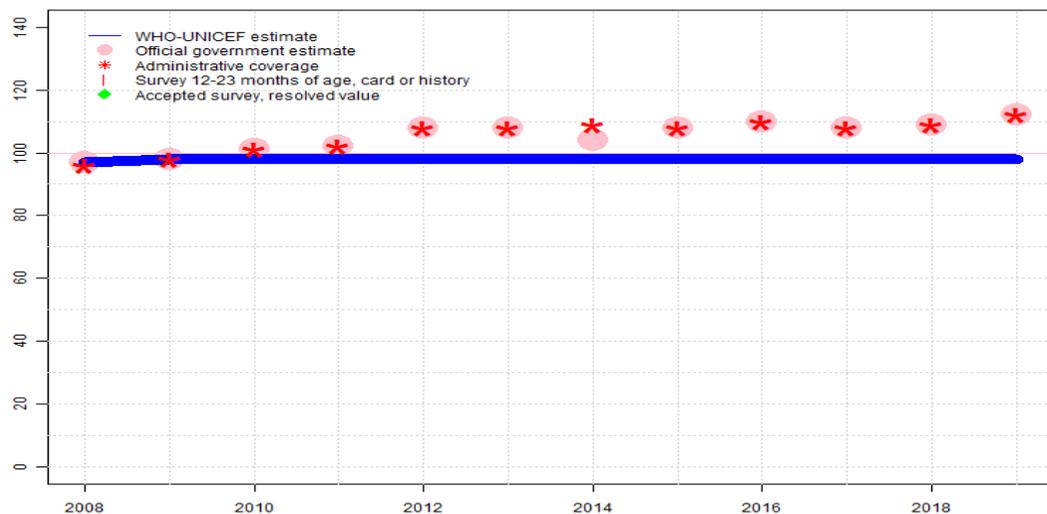
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2019 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.

# Nicaragua - Hib3

NIC - Hib3



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	97	98	98	98	98	98	98	98	98	98	98	98
Estimate GoC	●●	●●	●●	●●	●	●	●	●	●	●	●	●
Official	97	98	101	102	108	108	104	108	110	108	109	112
Administrative	96	98	101	102	108	108	109	108	110	108	109	112
Survey	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: 2019 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.

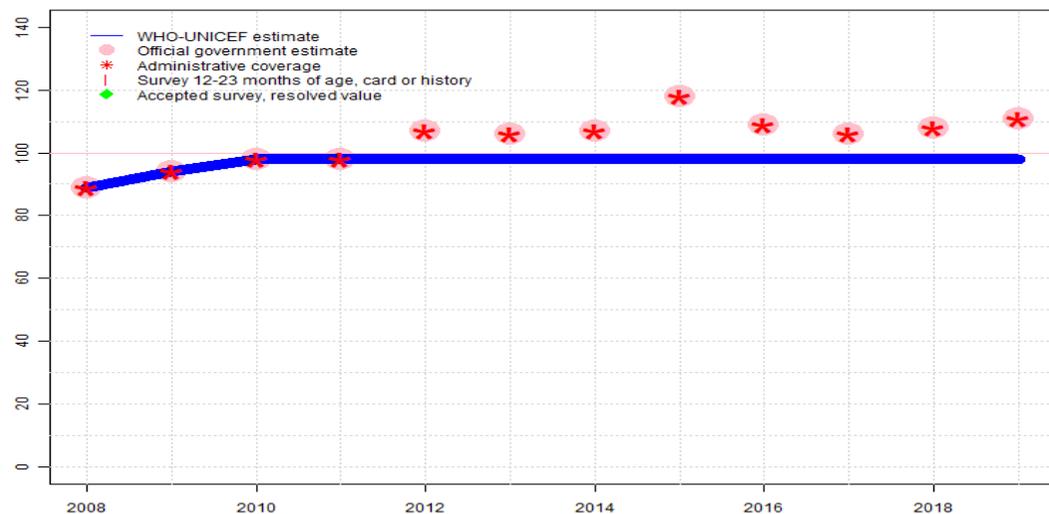
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2019: Estimate based on extrapolation from data reported by national government. Reported data excluded because 112 percent greater than 100 percent. 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-
- 2018: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-
- 2017: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2016: Estimate based on extrapolation from data reported by national government. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded because 104 percent greater than 100 percent. Estimate challenged by: D-
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2012: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2011: Estimate based on extrapolation from data reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ D+
- 2010: Estimate based on extrapolation from data reported by national government. Reported data excluded because 101 percent greater than 100 percent. Preliminary results from the 2011-12 ENDESA survey support coverage greater than 90 percent. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+

# Nicaragua - RotaC

NIC - RotaC



## Description:

- 2019: Estimate based on extrapolation from data reported by national government. Reported data excluded because 111 percent greater than 100 percent. 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-
- 2018: Estimate based on extrapolation from data reported by national government. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-
- 2017: Estimate based on extrapolation from data reported by national government. Reported data excluded because 106 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2016: Estimate based on extrapolation from data reported by national government. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded because 118 percent greater than 100 percent. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: D-
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded because 106 percent greater than 100 percent. Estimate challenged by: D-
- 2012: Estimate based on extrapolation from data reported by national government. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. Rotavirus vaccine introduced in 2006, reporting started in 2008. GoC=R+ D+

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	89	94	98	98	98	98	98	98	98	98	98	98
Estimate GoC	●●	●●	●●	●●	●	●	●	●	●	●	●	●
Official	89	94	98	98	107	106	107	118	109	106	108	111
Administrative	89	94	98	98	107	106	107	118	109	106	108	111
Survey	NA											

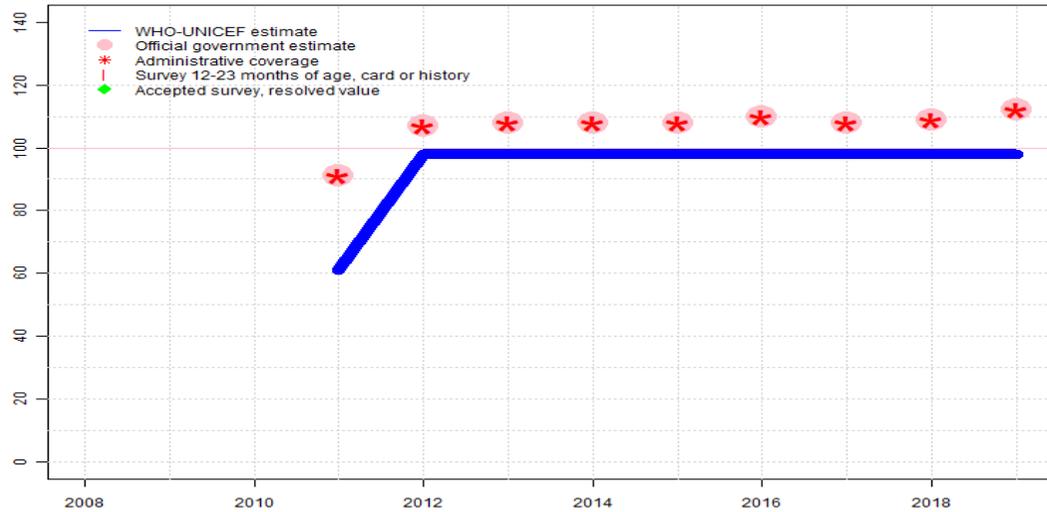
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2019 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.

# Nicaragua - PcV3

NIC - PcV3



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Estimate	NA	NA	NA	61	98	98	98	98	98	98	98	98
Estimate GoC	NA	NA	NA	•	•	•	•	•	•	•	•	•
Official	NA	NA	NA	91	107	108	108	108	110	108	109	112
Administrative	NA	NA	NA	91	107	108	108	108	110	108	109	112
Survey	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: 2019 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:

- 2019: Reported data calibrated to 2013 levels. Reported data excluded because 112 percent greater than 100 percent. 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-
- 2018: Reported data calibrated to 2013 levels. Reported data excluded because 109 percent greater than 100 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2013 levels. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2013 levels. Reported data excluded because 110 percent greater than 100 percent. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2013 levels. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2013 levels. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-R-
- 2013: Estimate of 98 percent assigned by working group. Estimate based on DTP3 levels. Reported data excluded because 108 percent greater than 100 percent. Estimate challenged by: D-R-
- 2012: Estimate of 98 percent assigned by working group. Estimate based on DTP3 levels. Reported data excluded because 107 percent greater than 100 percent. Estimate challenged by: D-R-
- 2011: Ninety-one percent coverage reached in 67 percent of the population. Pneumococcal conjugate vaccine introduced in December 2010. Reporting started in 2011. Estimate challenged by: R-

# Nicaragua - survey details

## 2005 Encuesta Nicaragüense de Demografía y Salud ENDESA 2006-2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	98.3	18-29 m	1815	80
DTP1	Card or History	98.4	18-29 m	1815	80
DTP3	Card or History	95.1	18-29 m	1815	80
HepB1	Card or History	98.4	18-29 m	1815	80
HepB3	Card or History	95.1	18-29 m	1815	80
Hib1	Card or History	98.4	18-29 m	1815	80
Hib3	Card or History	95.1	18-29 m	1815	80
MCV1	Card or History	87.6	18-29 m	1815	80
Pol1	Card or History	98.6	18-29 m	1815	80
Pol3	Card or History	95.1	18-29 m	1815	80

## 2000 Encuesta Nicaragüense de Demografía y Salud 2001, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	95.5	12-23 m	1370	78
DTP1	Card or History	96.6	12-23 m	1370	78
DTP3	Card or History	82.7	12-23 m	1370	78
MCV1	Card or History	86.4	12-23 m	1370	78
Pol1	Card or History	96.7	12-23 m	1370	78
Pol3	Card or History	84.7	12-23 m	1370	78

## 1997 Encuesta Nicaragüense de Demografía y Salud 1998, 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	94.3	12-23 m	1486	66
BCG	Card or History	95	12-23 m	1486	66
BCG	History	22.8	12-23 m	1486	66
DTP1	C or H <12 months	92.7	12-23 m	1486	66
DTP1	Card or History	95.4	12-23 m	1486	66
DTP1	History	22.2	12-23 m	1486	66
DTP3	C or H <12 months	68.8	12-23 m	1486	66
DTP3	Card or History	79.7	12-23 m	1486	66
DTP3	History	13.6	12-23 m	1486	66
MCV1	C or H <12 months	70.8	12-23 m	1486	66
MCV1	Card or History	85.7	12-23 m	1486	66
MCV1	History	18.8	12-23 m	1486	66
Pol1	C or H <12 months	94.6	12-23 m	1486	66
Pol1	Card or History	96.6	12-23 m	1486	66
Pol1	History	23	12-23 m	1486	66
Pol3	C or H <12 months	73	12-23 m	1486	66
Pol3	Card or History	83	12-23 m	1486	66
Pol3	History	16.2	12-23 m	1486	66

Further information and estimates for previous years are available at:

<http://www.data.unicef.org/child-health/immunization>

[http://www.who.int/immunization/monitoring\\_surveillance/routine/coverage/en/index4.html](http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html)