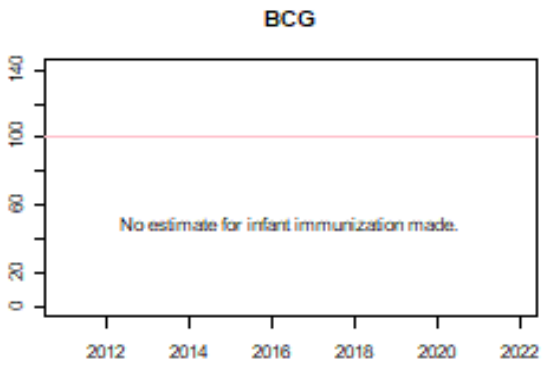
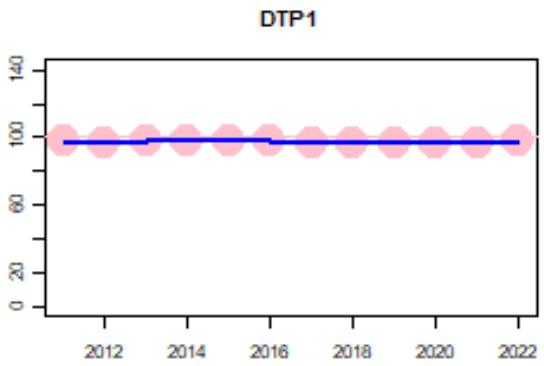
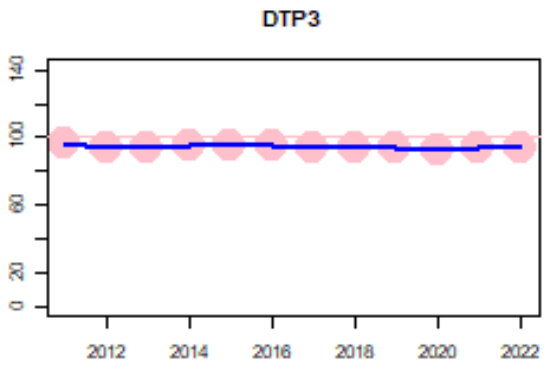
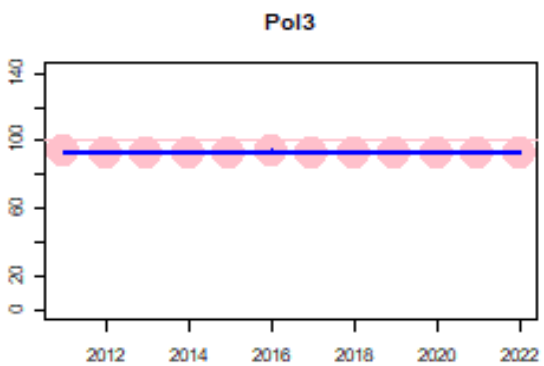
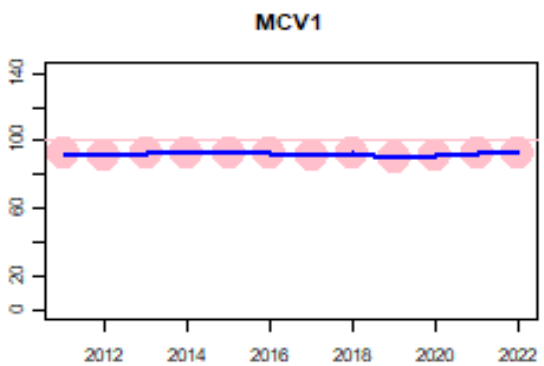
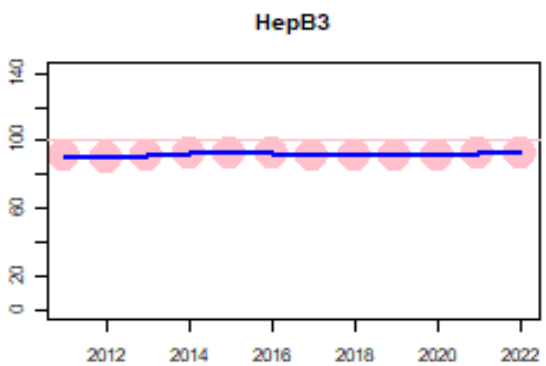

BCG
No estimate for infant immunization made.
0
20
60
100
140
2012
2014
2016
2018
2020
2022

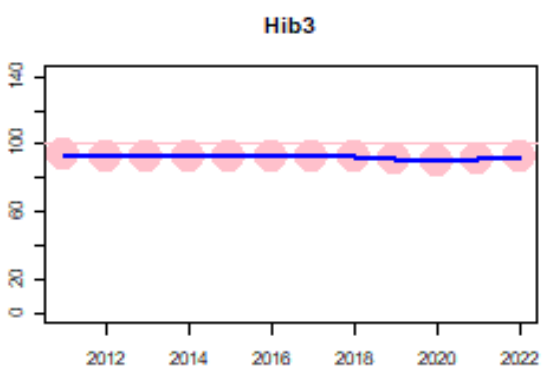

DTP1
0
20
60
100
140
2012
2014
2016
2018
2020
2022

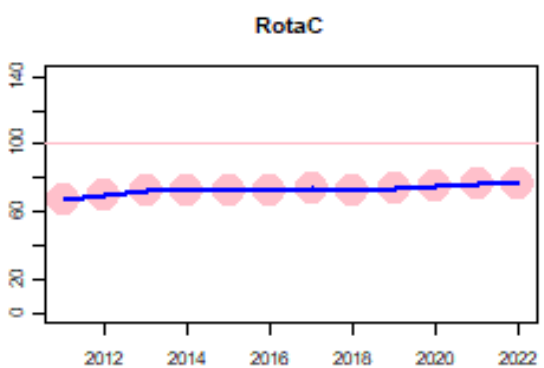

DTP3
0
20
60
100
140
2012
2014
2016
2018
2020
2022

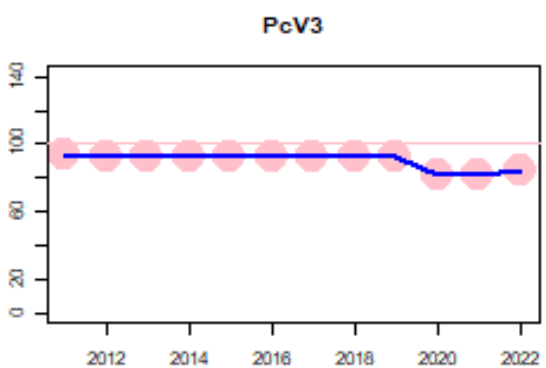

Pol3
0
20
60
100
140
2012
2014
2016
2018
2020
2022


MCV1
0
20
60
100
140
2012
2014
2016
2018
2020
2022


HepB3
0
20
60
100
140
2012
2014
2016
2018
2020
2022


Hib3
0
20
60
100
140
2012
2014
2016
2018
2020
2022


RotaC
0
20
60
100
140
2012
2014
2016
2018
2020
2022


PcV3
0
20
60
100
140
2012
2014
2016
2018
2020
2022

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. Co verage 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.

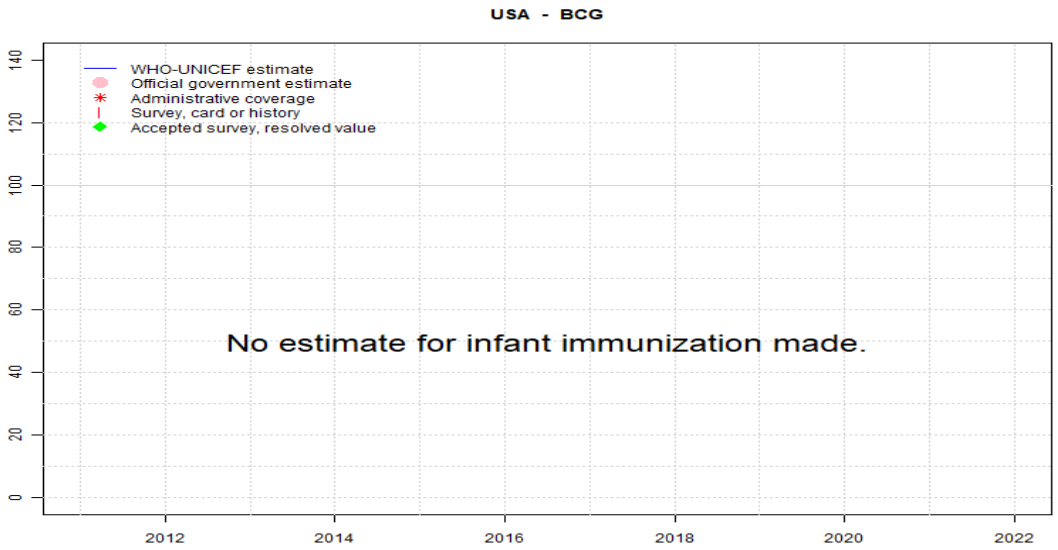
Hib3: percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.

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.

United States of America - BCG



	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.

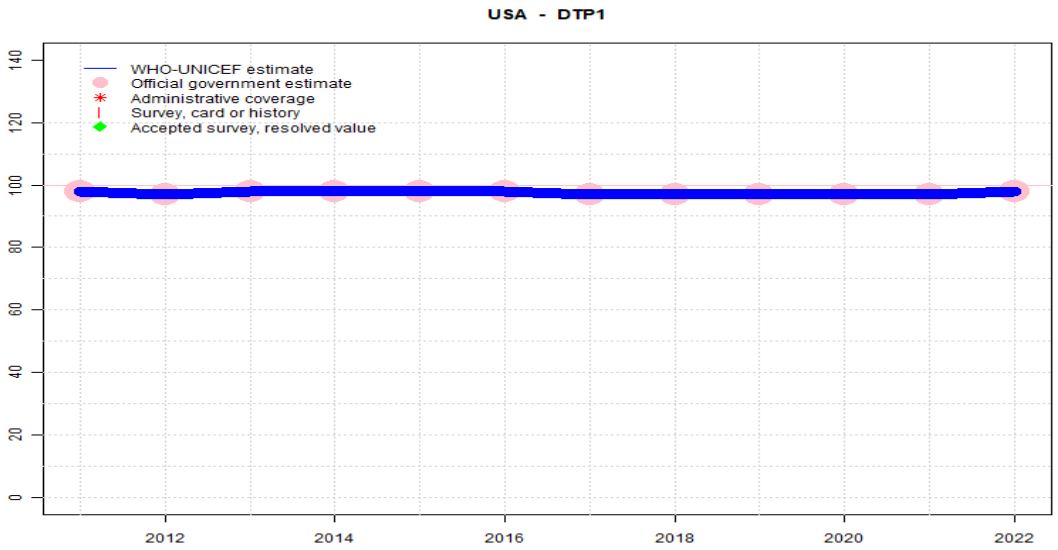
●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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.

United States of America - DTP1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	97	98	98	98	98	97	97	97	97	97	98
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	98	97	98	98	98	98	97	97	97	97	97	98
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

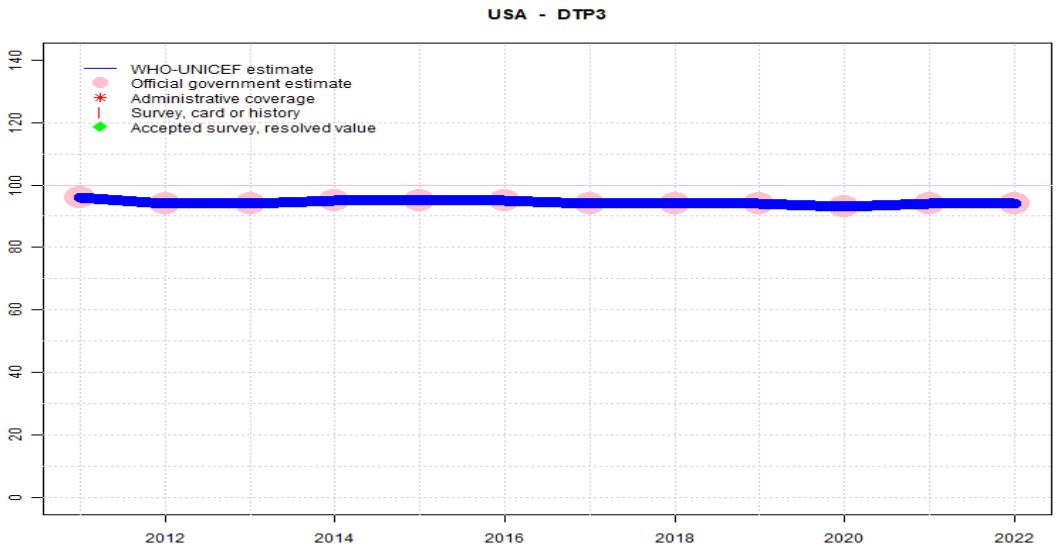
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - DTP3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	94	94	95	95	95	94	94	94	93	94	94
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	96	94	94	95	95	95	94	94	94	93	94	94
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 94 percent changed from previous revision value of 93 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

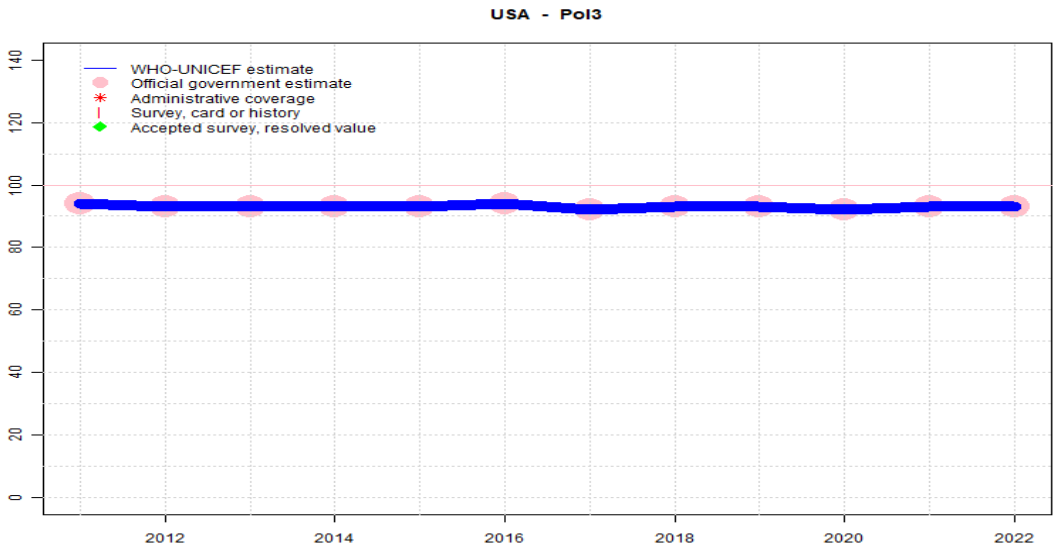
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - Pol3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	94	93	93	93	93	94	92	93	93	92	93	93
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	94	93	93	93	93	94	92	93	93	92	93	93
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 93 percent changed from previous revision value of 92 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

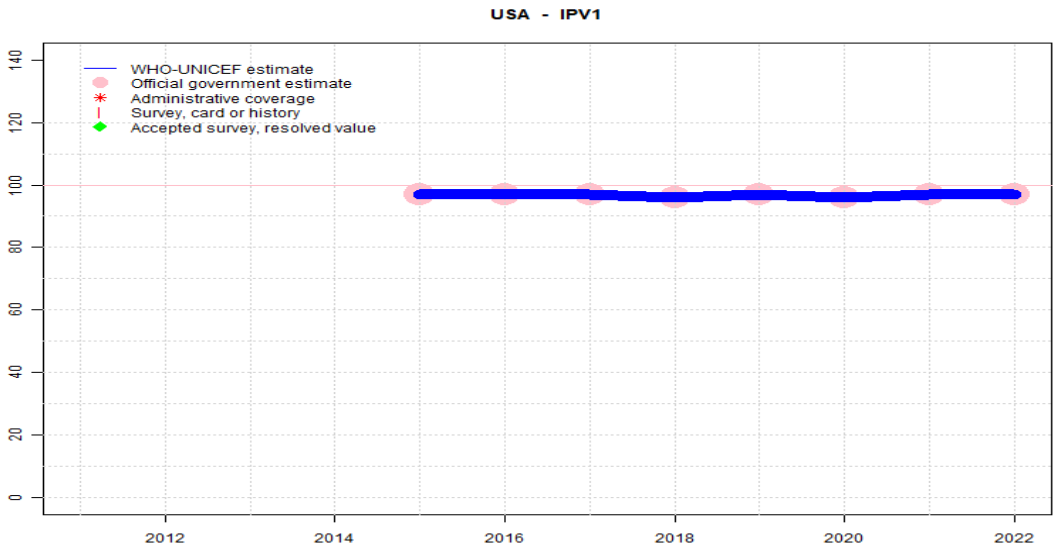
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - IPV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	97	97	97	96	97	96	97	97
Estimate GoC	NA	NA	NA	NA	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	97	97	97	96	97	96	97	97
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.

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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 reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 97 percent changed from previous revision value of 96 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

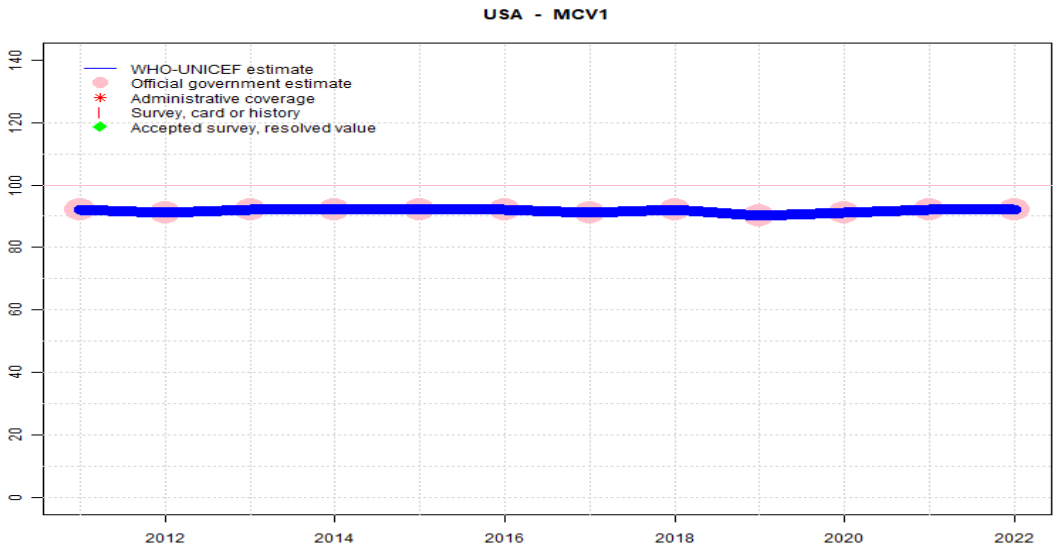
2017: Estimate informed by reported data. GoC=R+

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

United States of America - IPV1

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

United States of America - MCV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	92	91	92	92	92	92	91	92	90	91	92	92
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	92	91	92	92	92	92	91	92	90	91	92	92
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

•• Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

• There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 92 percent changed from previous revision value of 91 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

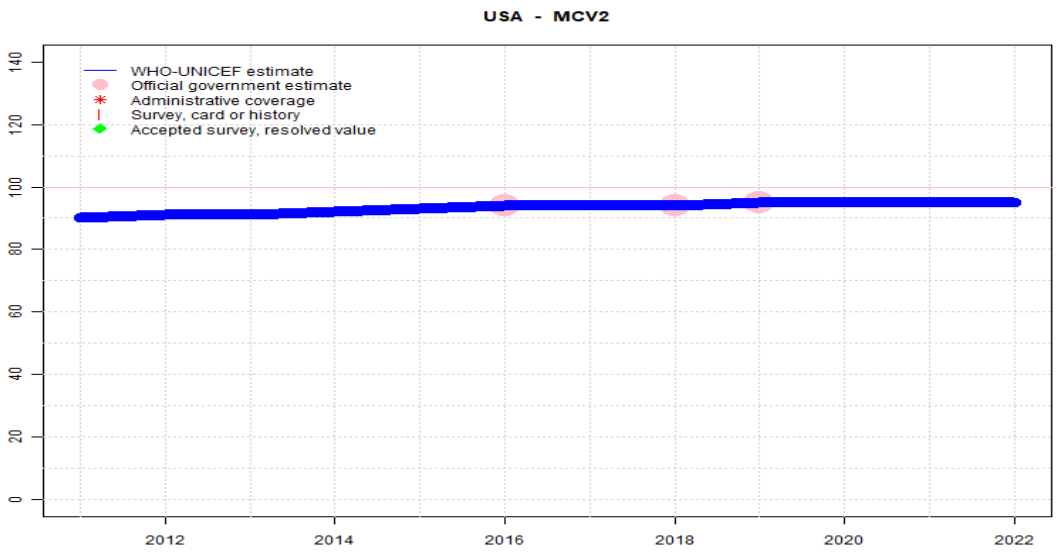
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - MCV2



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	90	91	91	92	93	94	94	94	95	95	95	95
Estimate GoC	•	•	•	•	•	••	•	••	••	•	•	•
Official	NA	NA	NA	NA	NA	94	NA	94	95	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

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

2022: Estimate based on extrapolation from data reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=No accepted empirical data

2021: Estimate based on extrapolation from data reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. GoC=No accepted empirical data

2020: Estimate based on extrapolation from data reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=No accepted empirical data

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

2017: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

2016: Estimate informed by reported data. Reported coverage is based on the median of the state-specific MMR2 plus coverage for the 2016-17 school year. GoC=R+

United States of America - MCV2

2015: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

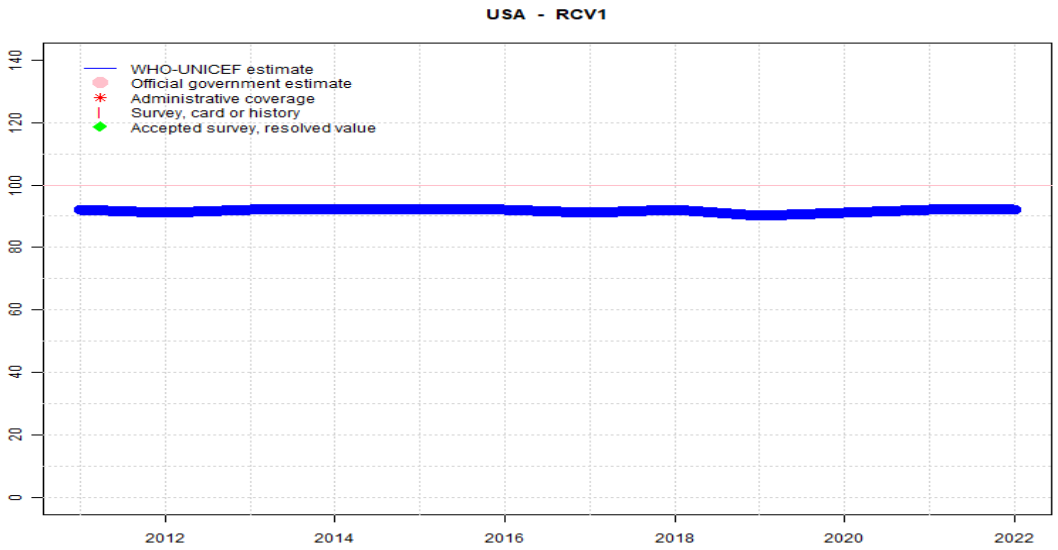
2014: Estimate informed by interpolation between reported data. Beginning in 2014, the recommended age of administration for MCV2 changed from by age 6 years to by age 4 years. GoC=No accepted empirical data

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

2012: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

2011: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

United States of America - RCV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	92	91	92	92	92	92	91	92	90	91	92	92
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

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

2022: Estimate based on estimated MCV1. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate based on estimated MCV1. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 92 percent changed from previous revision value of 91 percent. GoC=R+

2020: Estimate based on estimated MCV1. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate based on estimated MCV1. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

2018: Estimate based on estimated MCV1. GoC=R+

2017: Estimate based on estimated MCV1. GoC=R+

2016: Estimate based on estimated MCV1. GoC=R+

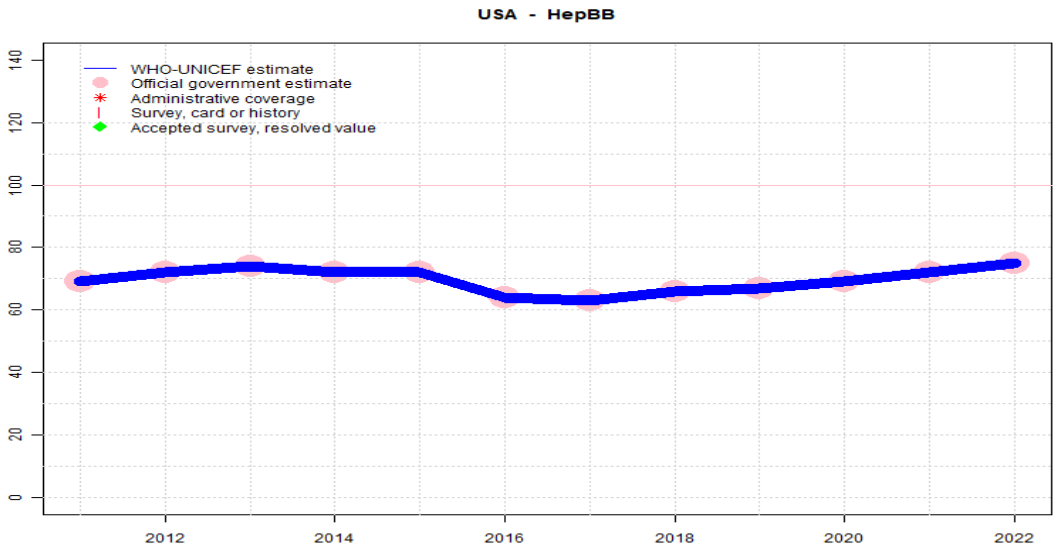
2015: Estimate based on estimated MCV1. GoC=R+

2014: Estimate based on estimated MCV1. GoC=R+

United States of America - RCV1

2013: Estimate based on estimated MCV1. GoC=R+
2012: Estimate based on estimated MCV1. GoC=R+
2011: Estimate based on estimated MCV1. GoC=R+

United States of America - HepBB



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	69	72	74	72	72	64	63	66	67	69	72	75
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	69	72	74	72	72	64	63	66	67	69	72	75
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 72 percent changed from previous revision value of 69 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

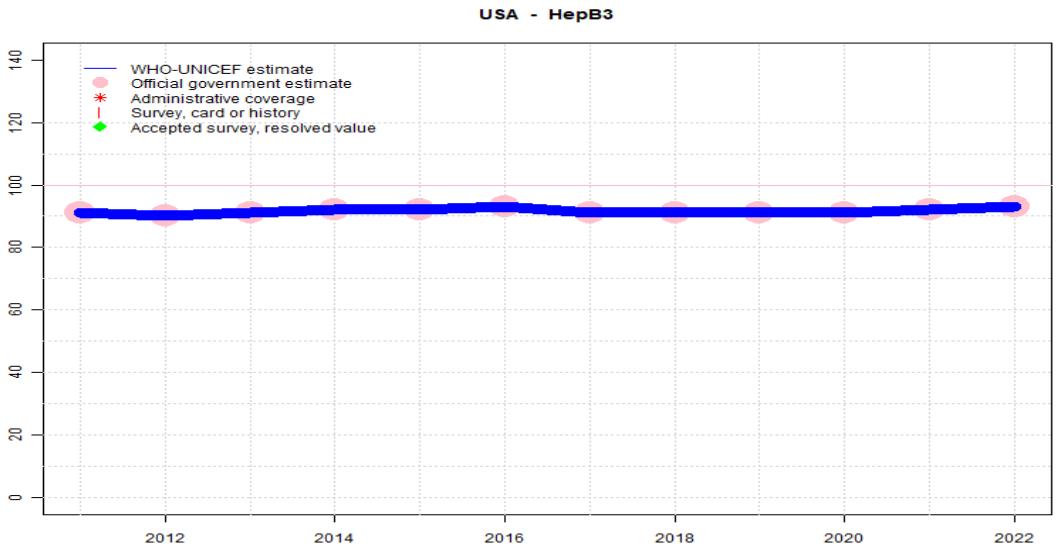
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - HepB3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	91	90	91	92	92	93	91	91	91	91	92	93
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	91	90	91	92	92	93	91	91	91	91	92	93
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 92 percent changed from previous revision value of 91 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

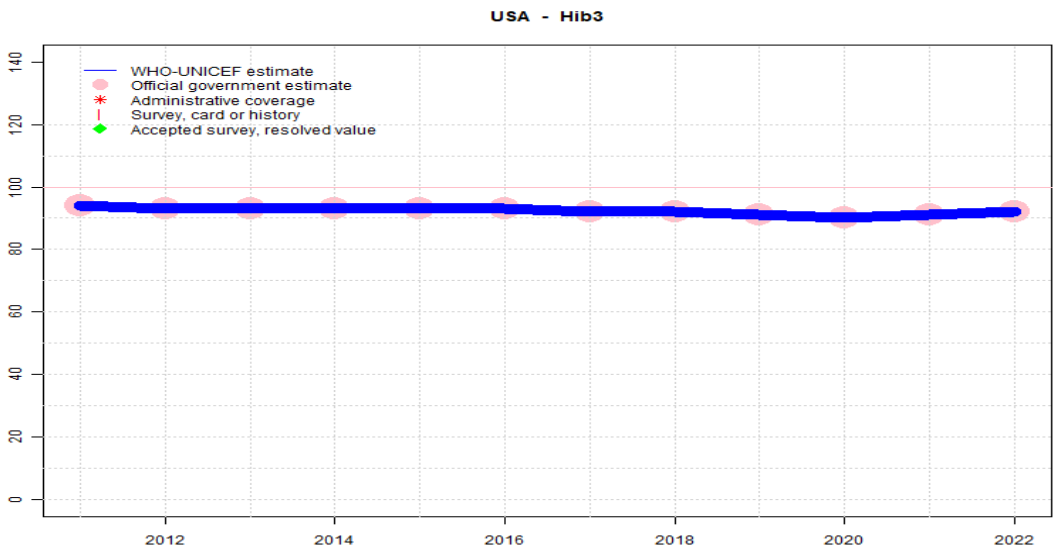
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - Hib3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	94	93	93	93	93	93	92	92	91	90	91	92
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	94	93	93	93	93	93	92	92	91	90	91	92
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 91 percent changed from previous revision value of 90 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

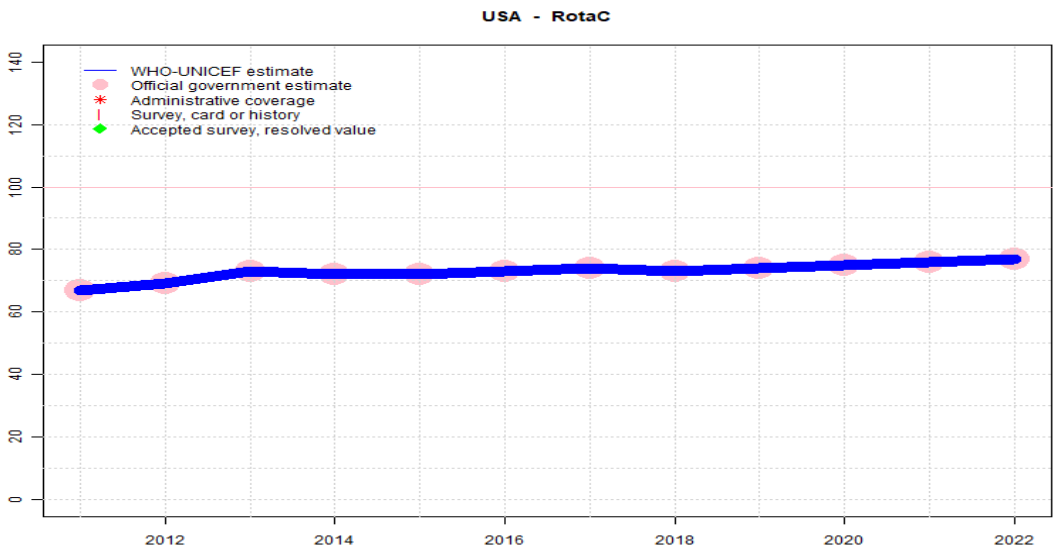
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - RotaC



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	67	69	73	72	72	73	74	73	74	75	76	77
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	67	69	73	72	72	73	74	73	74	75	76	77
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.

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Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. Estimate of 76 percent changed from previous revision value of 75 percent. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

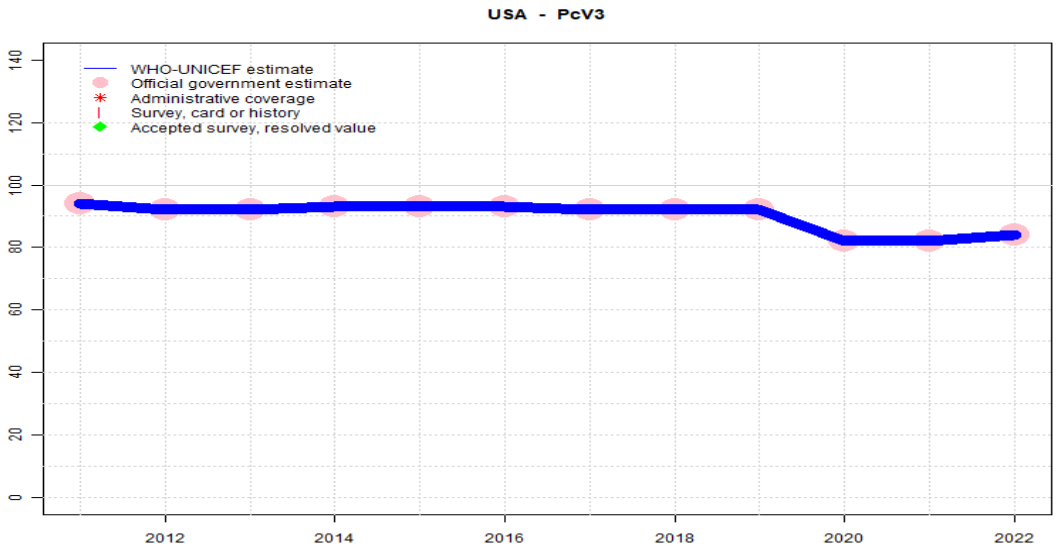
2014: Estimate informed by reported data. GoC=R+

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - PcV3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	94	92	92	93	93	93	92	92	92	82	82	84
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	94	92	92	93	93	93	92	92	92	82	82	84
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2022: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2022 reflect estimates obtained from children born in 2018 and 2019. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. GoC=R+

2021: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2021 reflect estimates obtained from children born in 2017 and 2018. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. See: MMWR January, 2023. GoC=R+

2020: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. Reported coverage might be for PCV dose 4. GoC=R+

2019: Estimate informed by reported data. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialled telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

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

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

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

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

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

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

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

2011: Estimate informed by reported data. GoC=R+

United States of America - 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.

2018 National Immunization Survey-Child, United States, 2019–2021

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	94.2	19-35 m	29598	-
HepB3	Card or History	92.7	19-35 m	29598	-
HepBB	Card or History	79.8	19-35 m	29598	-
Hib3	Card or History	93.6	19-35 m	29598	-
MCV1	Card or History	91.6	19-35 m	29598	-
PCV3	Card or History	93.3	19-35 m	29598	-
Pol3	Card or History	93.4	19-35 m	29598	-
RotaC	Card or History	77.1	19-35 m	29598	-

2017 National Immunization Survey-Child, United States, 2018–2020

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	93.7	19-35 m	29114	-
HepB3	Card or History	91.9	19-35 m	29114	-
HepBB	Card or History	78.4	19-35 m	29114	-
Hib3	Card or History	92.9	19-35 m	29114	-
MCV1	Card or History	91.6	19-35 m	29114	-
PCV3	Card or History	92.4	19-35 m	29114	-
Pol3	Card or History	92.7	19-35 m	29114	-
RotaC	Card or History	75.6	19-35 m	29114	-

2016 National Immunization Survey-Child, United States, 2017–2019

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	93.3	19-35 m	25970	-
HepB3	Card or History	91.4	19-35 m	25970	-
HepBB	Card or History	76.3	19-35 m	25970	-
Hib3	Card or History	92.2	19-35 m	25970	-
MCV1	Card or History	90.7	19-35 m	25970	-
PCV3	Card or History	91.6	19-35 m	25970	-
Pol3	Card or History	92.1	19-35 m	25970	-
RotaC	Card or History	75.3	19-35 m	25970	-

2015 National Immunization Survey-Child, United States, 2017

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	94	19-35 m	15333	-
HepB3	Card or History	91.4	19-35 m	15333	-
HepBB	Card or History	73.6	19-35 m	15333	-
Hib3	Card or History	92.8	19-35 m	15333	-
MCV1	Card or History	91.5	19-35 m	15333	-
PCV3	Card or History	91.9	19-35 m	15333	-
Pol3	Card or History	92.7	19-35 m	15333	-
RotaC	Card or History	73.2	19-35 m	15333	-

2014 National Immunization Survey-Child, United States, 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	93.7	19-35 m	14988	-
HepB3	Card or History	90.5	19-35 m	14988	-
HepBB	Card or History	71.1	19-35 m	14988	-
Hib3	Card or History	92.8	19-35 m	14988	-
MCV1	Card or History	91.1	19-35 m	14988	-
PCV3	Card or History	91.8	19-35 m	14988	-
Pol3	Card or History	91.9	19-35 m	14988	-
RotaC	Card or History	74.1	19-35 m	14988	-

2013 National Immunization Survey-Child, United States, 2015

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	95	19-35 m	15167	-
HepB3	Card or History	92.6	19-35 m	15167	-
HepBB	Card or History	72.4	19-35 m	15167	-
Hib3	Card or History	82.7	19-35 m	15167	-
MCV1	Card or History	91.9	19-35 m	15167	-
PCV3	Card or History	93.3	19-35 m	15167	-
Pol3	Card or History	93.7	19-35 m	15167	-
RotaC	Card or History	73.2	19-35 m	15167	-

2012 National Immunization Survey, 2014

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	94.7	19-35 m	14893	-
HepB3	Card or History	91.6	19-35 m	14893	-
HepBB	Card or History	72.4	19-35 m	14893	-
Hib3	Card or History	92.6	19-35 m	14893	-
MCV1	Card or History	91.5	19-35 m	14893	-
PCV3	Card or History	92.6	19-35 m	14893	-
Pol3	Card or History	93.3	19-35 m	14893	-
RotaC	Card or History	71.7	19-35 m	14893	-

2011 National Immunization Survey, 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	93.6	19-35 m	13611	-
HepB3	Card or History	89.7	19-35 m	13611	-
Hib3	Card or History	92.3	19-35 m	13611	-
MCV1	Card or History	90.1	19-35 m	13611	-
PcV3	Card or History	91.9	19-35 m	13611	-
Pol3	Card or History	91.8	19-35 m	13611	-
RotaC	Card or History	72.6	19-35 m	13611	-

2010 National Immunization Survey 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	93.8	19-23 m	16000	-
HepB3	Card or History	88.8	19-23 m	16000	-
Hib3	Card or History	92.7	19-23 m	16000	-
MCV1	Card or History	89.3	19-23 m	16000	-
PcV3	Card or History	91.8	19-23 m	16000	-
Pol3	Card or History	91.9	19-23 m	16000	-
RotaC	Card or History	68.6	19-23 m	16000	-

2009 National Immunization Survey 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	95.5	19-35 m	19534	-
HepB3	Card	91.1	19-35 m	19534	-
HepBB	Card	68.6	19-35 m	19534	-
Hib3	Card	94	19-35 m	19534	-
MCV1	Card	91.6	19-35 m	19534	-
PcV3	Card	93.6	19-35 m	19534	-
Pol3	Card	93.9	19-35 m	19534	-
RotaC	Card	67.3	19-35 m	19534	-

2005 National Immunization Survey (NIS) 2008

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	95.6	19-35 m	18430	-
HepB3	Card	92.8	19-35 m	18430	-
Hib3	Card	90	19-35 m	18430	-
MCV1	Card	90.3	19-35 m	18430	-
PcV3	Card	92.1	19-35 m	18430	-
Pol3	Card	92.3	19-35 m	18430	-

2004 National Immunization Survey (NIS) 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	95.5	19-35 m	17017	-
HepB3	Card	92.7	19-35 m	17017	-

Hib3	Card	92.6	19-35 m	17017	-
MCV1	Card	92.3	19-35 m	17017	-
Pol3	Card	92.6	19-35 m	17017	-

2003 National Immunization Survey (NIS) 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	95.8	19-35 m	-	-
HepB3	Card	93.3	19-35 m	-	-
Hib3	Card	93.4	19-35 m	-	-
MCV1	Card	92.3	19-35 m	-	-
Pol3	Card	92.8	19-35 m	-	-

2002 National Immunization Survey (NIS) 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	96.1	19-35 m	-	-
HepB3	Card	92.9	19-35 m	-	-
Hib3	Card	93.9	19-35 m	-	-
MCV1	Card	91.5	19-35 m	-	-
Pol3	Card	91.7	19-35 m	-	-

2001 National Immunization Survey (NIS) 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	95.9	19-35 m	-	-
HepB3	Card	92.4	19-35 m	-	-
Hib3	Card	93.5	19-35 m	-	-
MCV1	Card	93	19-35 m	-	-
Pol3	Card	91.6	19-35 m	-	-

2000 National Immunization Survey (NIS) 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	96	19-35 m	-	-
HepB3	Card	92.4	19-35 m	-	-
Hib3	Card	93.9	19-35 m	-	-
MCV1	Card	93	19-35 m	-	-
Pol3	Card	91.6	19-35 m	-	-

2000 National Immunization Survey 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	93.9	19-35 m	-	-
HepB3	Card or History	88.3	19-35 m	-	-
MCV1	Card or History	91.3	19-35 m	-	-
Pol3	Card or History	89.8	19-35 m	-	-

United States of America - survey details

Further information and estimates for previous years are available at:
https://data.unicef.org/topic/child-health/immunization/
https://immunizationdata.who.int/listing.html