

July 1, 2023; page 1

WHO and UNICEF estimates of national immunization coverage - next revision available July $15,\,2024$

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

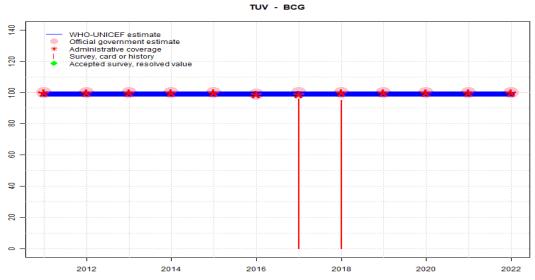
- BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.
- DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.
- Pol3: percentage of surviving infants who received 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.

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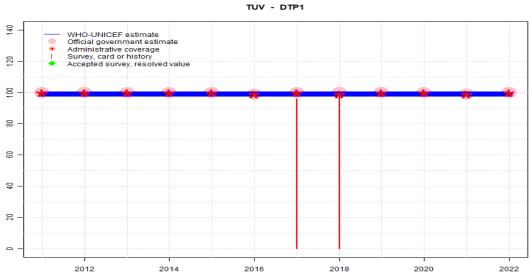
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	•	•	•	•	•	••	••	••	••	•	••	••
Official	100	100	100	100	100	99	100	100	100	100	100	100
Administrative	100	100	100	100	100	99	99	100	100	100	100	100
Survey	NA	NA	NA	NA	NA	NA	96	95	NA	NA	NA	NA

- ••• 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.

- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Programme reports one-half month vaccine stockout. GoC=R+D+
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Survey results support reported coverage. GoC=R+D+
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Survey results support reported coverage. GoC=R+ D+
- 2016: Estimate based on reported data supported by survey results for following year cohort. GoC=R+D+
- 2015: Reported data calibrated to 1997 and 2016 levels. Estimate challenged by: R-
- 2014: Reported data calibrated to 1997 and 2016 levels. Estimate challenged by: R-
- 2013: Reported data calibrated to 1997 and 2016 levels. Estimate challenged by: R-
- 2012: Reported data calibrated to 1997 and 2016 levels. Estimate challenged by: R-
- 2011: Reported data calibrated to 1997 and 2016 levels. Estimate challenged by: R-

Tuvalu - DTP1



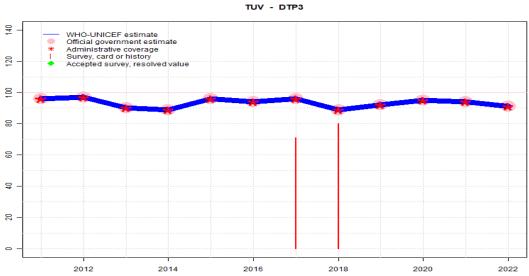
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	100	100	100	100	100	99	100	100	100	100	99	100
Administrative	100	100	100	100	100	99	100	99	100	100	99	100
Survey	NA	NA	NA	NA	NA	NA	96	97	NA	NA	NA	NA

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.
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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.

- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. Estimate challenged by: D-
- 2021: Estimate informed by reported data. Estimate challenged by: D-
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Estimate challenged by: D-
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Survey results support reported coverage. Estimate challenged by: D-
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Survey results support reported coverage. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. Estimate challenged by: D-

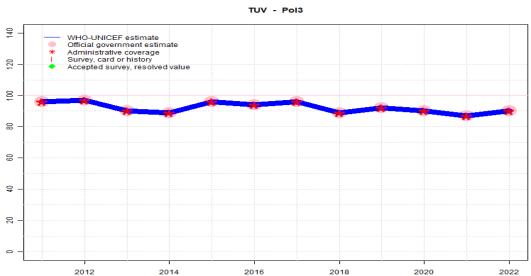


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	90	89	96	94	96	89	92	95	94	91
Estimate GoC	•	•	•	•	•	•	•	•	•	•	••	••
Official	96	97	90	89	96	94	96	89	92	95	94	91
Administrative	96	97	90	89	96	94	96	89	92	95	94	91
Survey	NA	NA	NA	NA	NA	NA	71	80	NA	NA	NA	NA

- ••• 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.
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- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Estimate challenged by: D-
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Tuvalu Multiple Indicator Cluster Survey 2019-2020 card or history results of 80 percent modified for recall bias to 99 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 53 percent and 3rd dose card only coverage of 54 percent. Survey results support reported coverage. Estimate challenged by: D-
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Tuvalu Multiple Indicator Cluster Survey 2019-2020 card or history results of 71 percent modified for recall bias to 96 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 36 percent and 3rd dose card only coverage of 36 percent. Survey results support reported coverage. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. Estimate challenged by: D-

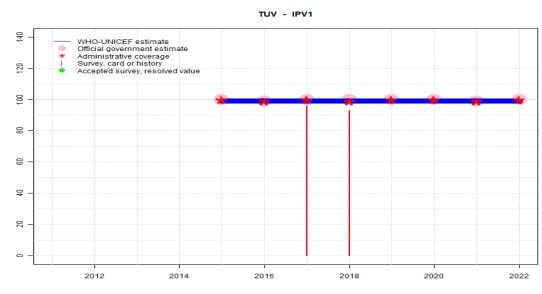


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	90	89	96	94	96	89	92	90	87	90
Estimate GoC	•	•	•	•	•	•	•	•	•	•	••	•
Official	96	97	90	89	96	94	96	89	92	90	87	90
Administrative	96	97	90	89	96	94	96	89	92	90	87	90
Survey	NA											

- ••• 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.
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- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Programme reports a two months vaccine stockout at national and subnational levels. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Estimate challenged by: D-
- 2018: Estimate informed by reported data. Estimate challenged by: D-
- 2017: Estimate informed by reported data. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. Estimate challenged by: D-



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	99	99	99	99	99	99	99	99
Estimate GoC	NA	NA	NA	NA	•	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	100	99	100	100	100	100	99	100
Administrative	NA	NA	NA	NA	100	99	100	99	100	100	99	100
Survey	NA	NA	NA	NA	NA	NA	96	93	NA	NA	NA	NA

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

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

Description:

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

2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. Estimate challenged by: D-

2021: Estimate informed by reported data. Estimate challenged by: D-

2020: Estimate informed by reported data. Programme reports a two months vaccine stockout at national and subnational levels. Estimate challenged by: D-

2019: Estimate informed by reported data. Estimate challenged by: D-

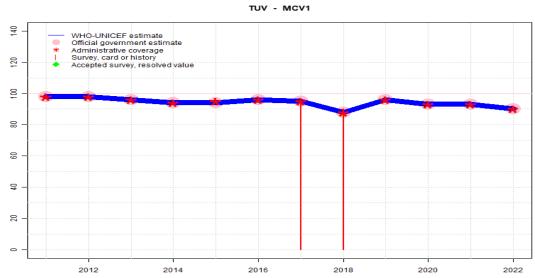
2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Survey results support reported coverage. Estimate challenged by: D-

2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Survey results support reported coverage. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

2015: Estimate informed by reported data. Estimate challenged by: D-

Tuvalu - MCV1



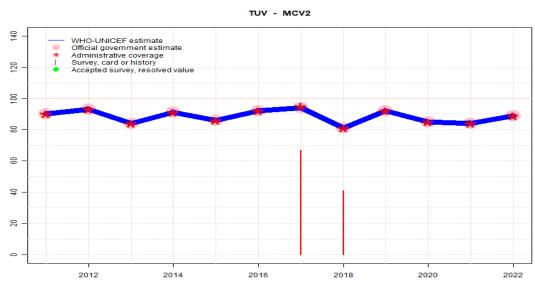
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	98	96	94	94	96	95	88	96	93	93	90
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	••
Official	98	98	96	94	94	96	95	88	96	93	93	90
Administrative	98	98	96	94	95	96	95	88	96	93	93	90
Survey	NA	NA	NA	NA	NA	NA	94	90	NA	NA	NA	NA

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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- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+
- 2021: Estimate informed by reported data. Estimate challenged by: D-
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Programme reports national level vaccine stockout of unknown duration. Estimate challenged by: D-
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Survey results support reported coverage. Estimate challenged by: D-
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Survey results support reported coverage. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. . Estimate challenged by: D-



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	90	93	84	91	86	92	94	81	92	85	84	89
Estimate GoC	•	•	•	•	•	•	•	••	••	•	•	••
Official	90	93	84	91	86	92	94	81	92	85	84	89
Administrative	90	93	84	91	86	92	95	81	92	85	84	89
Survey	NA	NA	NA	NA	NA	NA	67	41	NA	NA	NA	NA

- ••• 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.

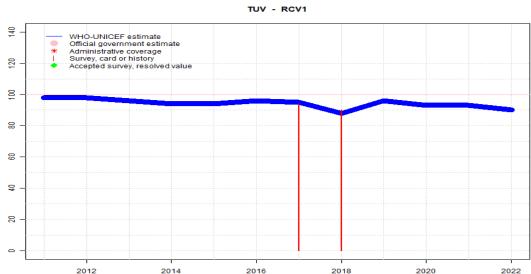
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+

- 2021: Estimate informed by reported data. Estimate challenged by: D-
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Programme reports national level vaccine stockout of unknown duration. Estimate is based on reported data consistent with other antigens. GoC=R+D+
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. . GoC=R+ D+
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. Estimate challenged by: D-



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	98	96	94	94	96	95	88	96	93	93	90
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	••
Official	NA											
Administrative	NA											
Survey	NA	NA	NA	NA	NA	NA	94	90	NA	NA	NA	NA

- ••• 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.

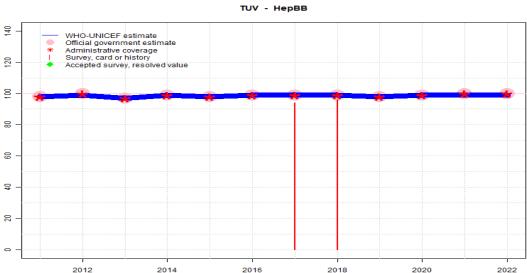
Description:

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. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+

- 2021: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2020: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2019: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2018: Estimate based on estimated MCV1. Survey results ignored. Sample size 112 less than 300. Survey results support reported coverage. Estimate challenged by: D-
- 2017: Estimate based on estimated MCV1. Survey results ignored. Sample size 99 less than 300. Survey results support reported coverage. Estimate challenged by: D-
- 2016: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2015: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2014: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2013: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2012: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2011: Estimate based on estimated MCV1. Estimate challenged by: D-

Tuvalu - HepBB



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	99	97	99	98	99	99	99	98	99	99	99
Estimate GoC	••	••	••	••	••	••	••	••	••	•	••	••
Official	98	100	97	99	98	99	99	99	98	99	100	100
Administrative	98	100	97	99	98	99	99	99	98	99	100	100
Survey	NA	NA	NA	NA	NA	NA	94	96	NA	NA	NA	NA

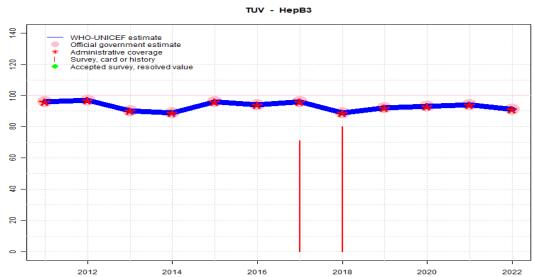
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Programme reports one-half month vaccine stockout. GoC=R+D+
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Survey results support reported coverage. GoC=R+D+
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Survey results support reported coverage. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+ D+
- 2015: Estimate informed by reported data. GoC=R+ D+
- 2014: Estimate informed by reported data. GoC=R+ D+
- 2013: Estimate informed by reported data. GoC=R+ D+
- 2012: Estimate informed by reported data. GoC=R+ D+
- 2011: Estimate informed by reported data. GoC=R+ D+

Tuvalu - HepB3



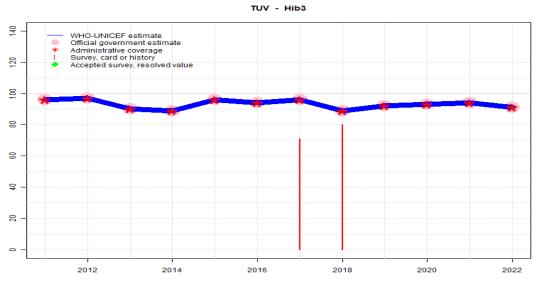
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	90	89	96	94	96	89	92	93	94	91
Estimate GoC	•	•	•	•	•	•	•	•	•	•	••	••
Official	96	97	90	89	96	94	96	89	92	93	94	91
Administrative	96	97	90	89	96	94	96	89	92	93	94	91
Survey	NA	NA	NA	NA	NA	NA	71	80	NA	NA	NA	NA

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.

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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.

- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Estimate challenged by: D-
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Tuvalu Multiple Indicator Cluster Survey 2019-2020 card or history results of 80 percent modified for recall bias to 99 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 53 percent and 3rd dose card only coverage of 54 percent. Survey results support reported coverage. Estimate challenged by: D-
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Tuvalu Multiple Indicator Cluster Survey 2019-2020 card or history results of 71 percent modified for recall bias to 96 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 36 percent and 3rd dose card only coverage of 36 percent. Survey results support reported coverage. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. Estimate challenged by: D-



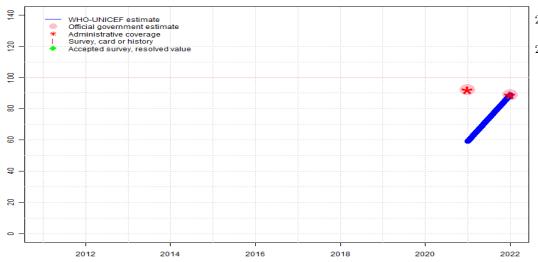
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	96	97	90	89	96	94	96	89	92	93	94	91
Estimate GoC	•	•	•	•	•	•	•	•	•	•	••	••
Official	96	97	90	89	96	94	96	89	92	93	94	91
Administrative	96	97	90	89	96	94	96	89	92	93	94	91
Survey	NA	NA	NA	NA	NA	NA	71	80	NA	NA	NA	NA

- ••• 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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- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+
- 2021: Estimate informed by reported data. GoC=R+ D+
- 2020: Estimate informed by reported data. Estimate challenged by: D-
- 2019: Estimate informed by reported data. Estimate challenged by: D-
- 2018: Estimate informed by reported data. Survey results ignored. Sample size 112 less than 300. Tuvalu Multiple Indicator Cluster Survey 2019-2020 card or history results of 80 percent modified for recall bias to 99 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 53 percent and 3rd dose card only coverage of 54 percent. Survey results support reported coverage. Estimate challenged by: D-
- 2017: Estimate informed by reported data. Survey results ignored. Sample size 99 less than 300. Tuvalu Multiple Indicator Cluster Survey 2019-2020 card or history results of 71 percent modified for recall bias to 96 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 36 percent and 3rd dose card only coverage of 36 percent. Survey results support reported coverage. Estimate challenged by: D-
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Estimate informed by reported data. Estimate challenged by: D-
- 2013: Estimate informed by reported data. Estimate challenged by: D-
- 2012: Estimate informed by reported data. Estimate challenged by: D-
- 2011: Estimate informed by reported data. Estimate challenged by: D-





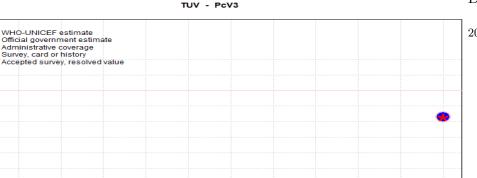
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	59	89									
Estimate GoC	NA	•	••									
Official	NA	92	89									
Administrative	NA	92	89									
Survey	NA											

- ••• 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.
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- 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.

- 2022: Estimate informed by reported data. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. GoC=R+ D+
- 2021: Rotavirus vaccine introduced during 2021. Reporting began in 2021. Reported coverage reflects that achieved in 65 percent of the national target population. Estimated coverage reflects that achieved in the annual total target population. Estimate challenged by: R-

2022



2018

2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	83										
Estimate GoC	NA	••										
Official	NA	83										
Administrative	NA	83										
Survey	NA											

2016

WHO-UNICEF estimate Official government estimate

Administrative coverage Survey, card or history

2012

2014

8

8

9

9

20

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. Programme reports a planned coverage survey during 2023-24. WHO and UNICEF await the final results. Pneumococcal conjugate vaccine introduced during 2021. Reporting began in 2022. GoC=R+ D+

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 Tuvalu Multiple Indicator Cluster Survey 2019-2020

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H $<$ 12 months	95.4	$12\text{-}23~\mathrm{m}$	112	54
BCG	Card	52.8	$12\text{-}23~\mathrm{m}$	112	54
BCG	Card or History	95.4	$12\text{-}23~\mathrm{m}$	112	54
BCG	History	42.6	$12\text{-}23~\mathrm{m}$	112	54
DTP1	C or H $<$ 12 months	97.3	$12\text{-}23~\mathrm{m}$	112	54
DTP1	Card	52.8	$12\text{-}23~\mathrm{m}$	112	54
DTP1	Card or History	97.3	$12\text{-}23~\mathrm{m}$	112	54
DTP1	History	44.5	$12\text{-}23~\mathrm{m}$	112	54
DTP3	C or H $<$ 12 months	78.6	$12\text{-}23~\mathrm{m}$	112	54
DTP3	Card	53.8	$12\text{-}23~\mathrm{m}$	112	54
DTP3	Card or History	80.1	$12\text{-}23~\mathrm{m}$	112	54
DTP3	History	26.3	$12\text{-}23~\mathrm{m}$	112	54
HepB1	C or H $<$ 12 months	97.3	$12\text{-}23~\mathrm{m}$	112	54
HepB1	Card	52.8	$12\text{-}23~\mathrm{m}$	112	54
HepB1	Card or History	97.3	$12\text{-}23~\mathrm{m}$	112	54
HepB1	History	44.5	$12\text{-}23~\mathrm{m}$	112	54
HepB3	C or H $<$ 12 months	78.6	$12\text{-}23~\mathrm{m}$	112	54
HepB3	Card	53.8	$12\text{-}23~\mathrm{m}$	112	54
HepB3	Card or History	80.1	$12\text{-}23~\mathrm{m}$	112	54
HepB3	History	26.3	$12\text{-}23~\mathrm{m}$	112	54
HepBB	C or H $<$ 12 months	96.3	$12\text{-}23~\mathrm{m}$	112	54
HepBB	Card	52.8	$12\text{-}23~\mathrm{m}$	112	54
HepBB	Card or History	96.3	$12\text{-}23~\mathrm{m}$	112	54
HepBB		43.5	12-23 m	112	54

Hib1	C or H $<$ 12 months	97.3	12-23 m	112	54
Hib1	Card	52.8	$12\text{-}23~\mathrm{m}$	112	54
Hib1	Card or History	97.3	$12\text{-}23 \mathrm{\ m}$	112	54
Hib1	History	44.5	$12\text{-}23~\mathrm{m}$	112	54
Hib3	C or H $<$ 12 months	78.6	$12\text{-}23~\mathrm{m}$	112	54
Hib3	Card	53.8	$12\text{-}23~\mathrm{m}$	112	54
Hib3	Card or History	80.1	$12\text{-}23 \mathrm{\ m}$	112	54
Hib3	History	26.3	$12\text{-}23~\mathrm{m}$	112	54
IPV1	C or H $<$ 12 months	91.4	$12\text{-}23~\mathrm{m}$	112	54
IPV1	Card	49.3	$12\text{-}23~\mathrm{m}$	112	54
IPV1	Card or History	92.8	12-23 m	112	54
IPV1	History	43.5	12-23 m	112	54
MCV1	C or H $<$ 12 months	48.8	$12\text{-}23~\mathrm{m}$	112	54
MCV1	Card	49.3	12-23 m	112	54
MCV1	Card or History	90.1	$12\text{-}23~\mathrm{m}$	112	54
MCV1	History	40.8	$12\text{-}23~\mathrm{m}$	112	54
MCV2	Card	23.2	12-23 m	112	54
MCV2	Card or History	40.6	$12\text{-}23~\mathrm{m}$	112	54
MCV2	History	17.4	$12\text{-}23~\mathrm{m}$	112	54

2017 Tuvalu Multiple Indicator Cluster Survey 2019-2020

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H $<$ 12 months	95.8	$24-35 \mathrm{m}$	99	54
BCG	Card	35.5	$24-35 \mathrm{m}$	99	54
BCG	Card or History	95.8	$24-35 \mathrm{\ m}$	99	54
BCG	History	60.3	$24\text{-}35~\mathrm{m}$	99	54
DTP1	C or H $<$ 12 months	95.8	$24\text{-}35~\mathrm{m}$	99	54
DTP1	Card	35.5	$24\text{-}35~\mathrm{m}$	99	54
DTP1	Card or History	95.8	$24\text{-}35~\mathrm{m}$	99	54
DTP1	History	60.3	$24\text{-}35~\mathrm{m}$	99	54
DTP3	C or H < 12 months	71	$24\text{-}35~\mathrm{m}$	99	54
DTP3	Card	35.5	$24\text{-}35~\mathrm{m}$	99	54
DTP3	Card or History	71	$24\text{-}35~\mathrm{m}$	99	54
DTP3	History	35.5	$24\text{-}35~\mathrm{m}$	99	54
HepB1	C or H $<$ 12 months	95.8	$24\text{-}35~\mathrm{m}$	99	54
HepB1	Card	35.5	$24\text{-}35~\mathrm{m}$	99	54
HepB1	Card or History	95.8	$24\text{-}35~\mathrm{m}$	99	54
HepB1	History	60.3	$24\text{-}35~\mathrm{m}$	99	54

HepB3	C or H $<$ 12 months	71	$24-35 \mathrm{\ m}$	99	54
HepB3	Card	35.5	$24-35 \mathrm{\ m}$	99	54
HepB3	Card or History	71	$24\text{-}35~\mathrm{m}$	99	54
HepB3	History	35.5	$24\text{-}35~\mathrm{m}$	99	54
HepBB	C or H <12 months	94.3	$24\text{-}35~\mathrm{m}$	99	54
HepBB	Card	35.5	$24\text{-}35~\mathrm{m}$	99	54
HepBB	Card or History	94.3	$24\text{-}35~\mathrm{m}$	99	54
HepBB	History	58.8	$24\text{-}35~\mathrm{m}$	99	54
Hib1	C or H <12 months	95.8	$24\text{-}35~\mathrm{m}$	99	54
Hib1	Card	35.5	$24\text{-}35~\mathrm{m}$	99	54
Hib1	Card or History	95.8	$24\text{-}35~\mathrm{m}$	99	54
Hib1	History	60.3	$24\text{-}35~\mathrm{m}$	99	54
Hib3	C or H $<$ 12 months	71	$24\text{-}35~\mathrm{m}$	99	54
Hib3	Card	35.5	$24\text{-}35~\mathrm{m}$	99	54
Hib3	Card or History	71	$24\text{-}35~\mathrm{m}$	99	54
Hib3	History	35.5	$24\text{-}35~\mathrm{m}$	99	54
IPV1	C or H $<$ 12 months	95.8	$24\text{-}35~\mathrm{m}$	99	54
IPV1	Card	34.4	$24\text{-}35~\mathrm{m}$	99	54
IPV1	Card or History	95.8	$24\text{-}35~\mathrm{m}$	99	54
IPV1	History	61.4	$24\text{-}35~\mathrm{m}$	99	54
MCV1	C or H $<$ 12 months	52.8	$24\text{-}35~\mathrm{m}$	99	54
MCV1	Card	33.3	$24\text{-}35~\mathrm{m}$	99	54
MCV1	Card or History	93.6	$24\text{-}35~\mathrm{m}$	99	54
MCV1	History	60.3	$24\text{-}35~\mathrm{m}$	99	54
MCV2	C or H $<$ 12 months	47.8	$24\text{-}35~\mathrm{m}$	99	54
MCV2	Card	31.4	$24\text{-}35~\mathrm{m}$	99	54
MCV2	Card or History	67.1	$24\text{-}35~\mathrm{m}$	99	54
MCV2	History	35.7	$24\text{-}35~\mathrm{m}$	99	54

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2006 Tuvalu Demographic	and Haalth C	11mrrorr 2007
2000 Tuvaru Demograpine	and nearm 5	urvey 2007

Vaccine	$Confirmation\ method$	Coverage	Age cohort	Sample	Cards seen
BCG	$\rm C~or~H < 18~months$	83.9	$18\text{-}29~\mathrm{m}$	80	33
BCG	Card	33.1	$18\text{-}29~\mathrm{m}$	27	33
BCG	Card or History	83.9	$18\text{-}29~\mathrm{m}$	80	33
BCG	History	50.8	$18\text{-}29~\mathrm{m}$	54	33
DTP1	C or H < 18 months	77.7	$18\text{-}29~\mathrm{m}$	80	33
DTP1	Card	33.1	$18\text{-}29~\mathrm{m}$	27	33
DTP1	Card or History	77.7	18-29 m	80	33

DTP1	History	44.6	$18-29~\mathrm{m}$	54	33
DTP3	C or H < 18 months	60.2	$18-29~\mathrm{m}$	80	33
DTP3	Card	33.1	$18-29~\mathrm{m}$	27	33
DTP3	Card or History	61.6	$18-29~\mathrm{m}$	80	33
DTP3	History	28.5	$18-29~\mathrm{m}$	54	33
MCV1	C or H < 18 months	3.5	$18-29~\mathrm{m}$	80	33
MCV1	Card	30.4	$18-29~\mathrm{m}$	27	33
MCV1	Card or History	74.1	$18-29~\mathrm{m}$	80	33
MCV1	History	43.7	$18-29~\mathrm{m}$	54	33
Pol1	C or H < 18 months	79.6	$18\text{-}29~\mathrm{m}$	80	33
Pol1	Card	33.1	$18\text{-}29~\mathrm{m}$	27	33
Pol1	Card or History	79.6	$18\text{-}29~\mathrm{m}$	80	33
Pol1	History	46.5	$18\text{-}29~\mathrm{m}$	54	33
Pol3	C or H < 18 months	54.5	$18\text{-}29~\mathrm{m}$	80	33
Pol3	Card	30.5	$18\text{-}29~\mathrm{m}$	27	33
Pol3	Card or History	60.1	$18\text{-}29~\mathrm{m}$	80	33
Pol3	History	29.6	$18\text{-}29~\mathrm{m}$	54	33

2005 Tuvalu Demographic and Health Survey 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H $<$ 18 months	87.9	$24\text{-}35~\mathrm{m}$	89	33
DTP1	C or H $<$ 18 months	80.2	$24\text{-}35~\mathrm{m}$	89	33
DTP3	C or H < 18 months	59.9	$24\text{-}35~\mathrm{m}$	89	33
MCV1	C or H $<$ 18 months	20.7	$24\text{-}35~\mathrm{m}$	89	33
Pol1	C or H < 18 months	85.9	$24\text{-}35~\mathrm{m}$	89	33
Pol3	$\rm C~or~H < 18~months$	58.8	$24\text{-}35~\mathrm{m}$	89	33

2004 Tuvalu Demographic and Health Survey 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H $<$ 18 months	80	$36\text{-}47~\mathrm{m}$	84	33
DTP1	C or H $<$ 18 months	74.5	$36\text{-}47~\mathrm{m}$	84	33
DTP3	C or H $<$ 18 months	56.7	$36\text{-}47~\mathrm{m}$	84	33
MCV1	C or H $<$ 18 months	64.1	$36\text{-}47~\mathrm{m}$	84	33
Pol1	$\rm C~or~H < 18~months$	76	$36\text{-}47~\mathrm{m}$	84	33
Pol3	C or H $<$ 18 months	54.9	$36\text{-}47~\mathrm{m}$	84	33

2003 Tuvalu Demographic and Health Survey 2007	DTP3 C or H <18 months 59.4 48-59 m 75	33
	MCV1 C or H $<$ 18 months 81 48-59 m 75	33
Vaccine Confirmation method Coverage Age cohort Sample Cards seen	Pol1 C or H $<$ 18 months 80.1 48-59 m 75	33
BCG C or H <18 months 83.3 48-59 m 75 33	Pol3 C or H $<$ 18 months 52.7 48-59 m 75	33
DTP1 C or H <18 months 76.5 48-59 m 75 33		

Further information and estimates for previous years are available at:

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

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