

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

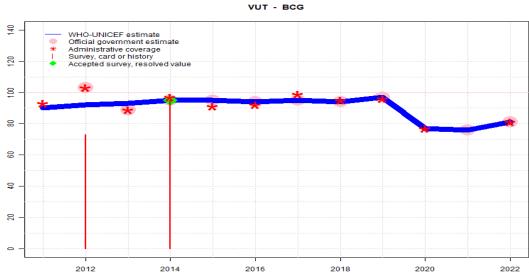
- BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.
- DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.
- **Pol3:** percentage of surviving infants who received 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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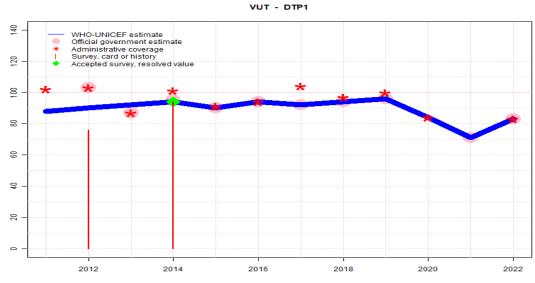
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	90	92	93	95	95	94	95	94	97	77	76	81
Estimate GoC	•	•	•	•••	•	•	••	••	••	••	••	••
Official	NA	103	89	95	95	94	95	94	97	NA	76	81
Administrative	93	103	89	97	91	92	99	95	96	77	NA	81
Survey	NA	73	NA	95	NA							

- ••• 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+
- 2021: Estimate informed by reported data. GoC=R+
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. Estimate challenged by: D-
- 2015: Estimate informed by reported data. Estimate challenged by: D-
- 2014: Survey report does not provide percent cards seen. GoC=R+ S+ D+
- 2013: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2006 and 2014 levels. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Reported data excluded. Estimate follows survey result. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: R-
- 2011: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-

### Vanuatu - DTP1



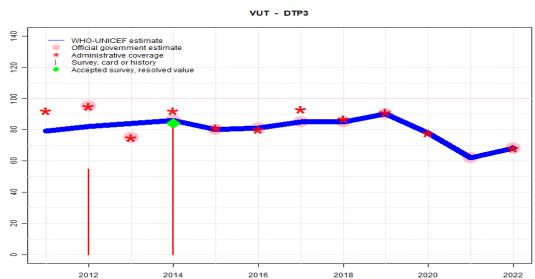
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	88	90	92	94	90	94	92	94	96	84	71	83
Estimate GoC	•	•	•	•	•••	•••	••	••	••	••	••	••
Official	NA	103	87	95	90	94	92	94	96	NA	71	83
Administrative	102	103	87	101	91	94	104	97	100	84	NA	83
Survey	NA	76	NA	94	NA							

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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. Estimate informed by reported coverage consistent with other antigens. GoC=R+ D+
- 2021: Estimate informed by reported data. Decline in reported coverage is unexplained. GoC=R+
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+S+D+
- 2015: Estimate based on official reported coverage. GoC=R+ S+ D+
- 2014: Estimate of 94 percent assigned by working group. Survey report does not provide percent cards seen. Estimate challenged by: R-
- 2013: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2012: Reported data calibrated to 2006 and 2014 levels. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Reported data excluded. Estimate follows survey result. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: R-
- 2011: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result.Reported data excluded because 102 percent greater than 100 percent. Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: R-

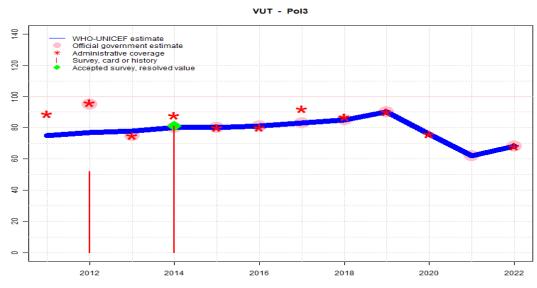


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	79	82	84	86	80	81	85	85	90	78	62	68
Estimate GoC	•	•	•	•••	•••	•••	••	••	••	••	••	••
Official	NA	95	75	86	80	81	85	85	90	NA	62	68
Administrative	92	95	75	92	81	80	93	87	91	78	NA	68
Survey	NA	55	NA	81	NA							

- ••• 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+
- 2021: Estimate informed by reported data. Decline in reported coverage is unexplained. GoC=R+
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+S+D+
- 2015: Estimate informed by reported data. GoC=R+ S+ D+
- 2014: Survey report does not provide percent cards seen. Vanuatu Vaccination Coverage Survey 2016 card or history results of 81 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 58 percent and 3rd dose card only coverage of 52 percent. GoC=R+S+D+
- 2013: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result.Reported data excluded due to decline in reported coverage from 95 percent to 75 percent with increase to 86 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2006 and 2014 levels. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Vanuatu Demographic and Health Survey 2013 card or history results of 55 percent modified for recall bias to 64 percent based on 1st dose card or history coverage of 76 percent, 1st dose card only coverage of 56 percent and 3rd dose card only coverage of 47 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2011: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: R-

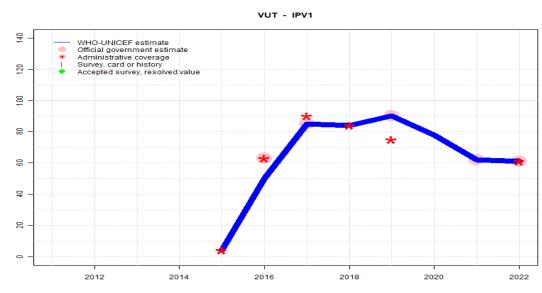


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	75	77	78	80	80	81	83	85	90	76	62	68
Estimate GoC	•	•	•	•••	•••	•••	••	••	••	••	••	••
Official	NA	95	75	80	80	81	83	85	90	NA	62	68
Administrative	89	96	75	88	80	80	92	87	90	76	NA	68
Survey	NA	52	NA	81	NA							

- ••• 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+
- 2021: Estimate informed by reported data. Decline in reported coverage is unexplained. GoC=R+
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+S+D+
- 2015: Estimate informed by reported data. GoC=R+S+D+
- 2014: Survey report does not provide percent cards seen. GoC=R+ S+ D+
- 2013: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2012: Reported data calibrated to 2006 and 2014 levels. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Vanuatu Demographic and Health Survey 2013 card or history results of 52 percent modified for recall bias to 65 percent based on 1st dose card or history coverage of 74 percent, 1st dose card only coverage of 55 percent and 3rd dose card only coverage of 48 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-



	0011	0010	0010	0014	0015	0010	0015	0010	0010	0000	0001	0000
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	4	50	85	84	90	78	62	61
Estimate GoC	NA	NA	NA	NA	•	•	•	••	•	•	••	••
Official	NA	NA	NA	NA	NA	63	85	NA	90	NA	62	61
Administrative	NA	NA	NA	NA	4	63	90	84	75	NA	NA	61
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.
- •• Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

### Description:

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

2022: Estimate informed by reported data. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+

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

2020: Estimate is based on DTP3 coverage. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=No accepted empirical data

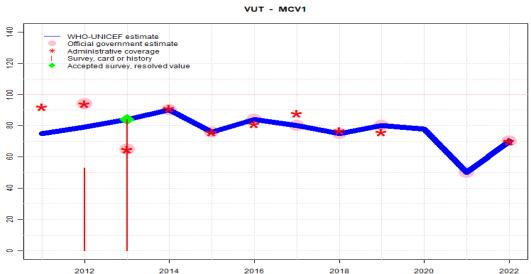
2019: Estimate informed by reported data. Estimate challenged by: D-

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

2017: Estimate is based on DTP3 estimate. . Estimate challenged by: R-

2016: Roll out of IPV in the entire country. Estimate is based on adjustment to DTP3 based on relative relationship between the reported number of children vaccinated with DTP3 and IPV1. Estimate challenged by: R-

2015: Inactivated polio vaccine in December 2015. Estimate challenged by: R-



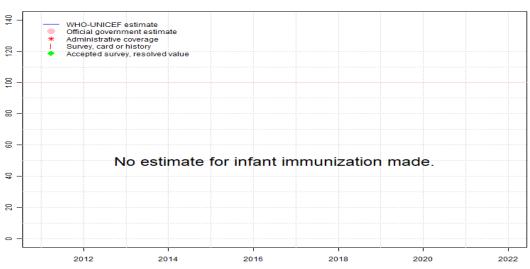
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	75	79	84	90	76	84	80	75	80	78	50	70
Estimate GoC	•	•	•	•	•••	••	••	••	••	•	••	••
Official	NA	94	65	90	76	84	80	75	80	NA	50	70
Administrative	92	94	65	91	76	81	88	77	76	NA	NA	70
Survey	NA	53	84	NA								

- ••• 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. Estimate informed by reported coverage consistent with other antigens. GoC=R+D+
- 2021: Estimate informed by reported data. GoC=R+
- 2020: Estimate is based on DTP3 coverage. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=No accepted empirical data
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+ D+
- 2015: Unexplained changes in reported MCV1 coverage, yet official data accepted for consistency with other vaccines. GoC=R+ S+ D+
- 2014: Estimate of 90 percent assigned by working group. Unexplained changes in reported MCV1 coverage, yet official data accepted for consistency with other vaccines. Reported data excluded due to an increase from 65 percent to 90 percent with decrease 76 percent. Estimate challenged by: R-
- 2013: Estimate of 84 percent assigned by working group. Decline in reported data unexplained. Survey report does not provide percent cards seen. Reported data excluded. Estimate follows survey result.Reported data excluded due to decline in reported coverage from 94 percent to 65 percent with increase to 90 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2006 and 2013 levels. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2011: Reported data calibrated to 2006 and 2013 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-

#### VUT - MCV2



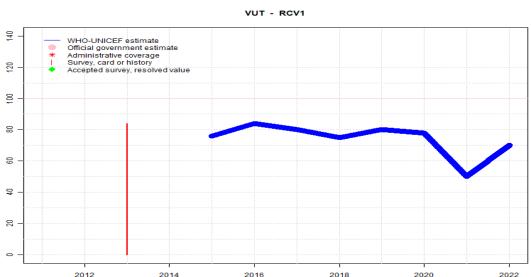
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 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.

2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	76	84	80	75	80	78	50	70
Estimate GoC	NA	NA	NA	NA	•••	••	••	••	••	•	••	••
Official	NA											
Administrative	NA											
Survey	NA	NA	84	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 administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+

2021: Estimate based on estimated MCV1. GoC=R+

2020: Estimate is based on estimated MCV1 coverage. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=No accepted empirical data

2019: Estimate based on estimated MCV1. GoC=R+D+

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

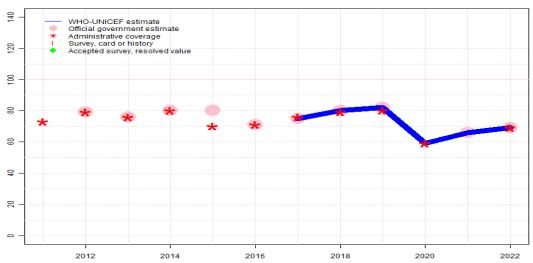
2017: Estimate based on estimated MCV1. GoC=R+ D+

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

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

## Vanuatu - HepBB





	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	75	80	82	59	66	69
Estimate GoC	NA	NA	NA	NA	NA	NA	••	••	••	••	••	••
Official	NA	79	76	80	80	71	75	80	82	NA	66	69
Administrative	73	79	76	80	70	71	76	79	80	59	NA	69
Survey	NA											

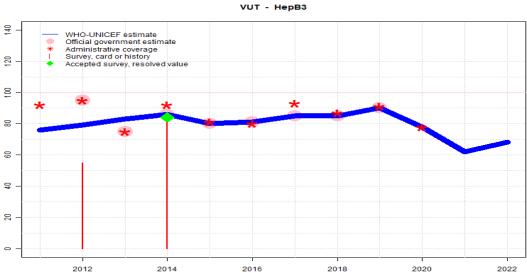
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+
- 2021: Estimate informed by reported data. GoC=R+
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+

## Vanuatu - HepB3



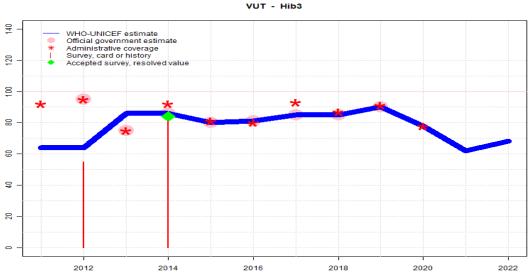
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	76	79	83	86	80	81	85	85	90	78	62	68
Estimate GoC	•	•	•	•	•••	•••	••	••	••	••	•	•
Official	NA	95	75	86	80	81	85	85	90	NA	NA	NA
Administrative	92	95	75	92	81	80	93	87	91	78	NA	NA
Survey	NA	55	NA	81	NA							

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 estimated DTP3 coverage. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=No accepted empirical data
- 2021: Estimate is based on estimated DTP3 coverage. GoC=No accepted empirical data
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+ S+ D+
- 2015: Estimate informed by reported data. GoC=R+S+D+
- 2014: Survey report does not provide percent cards seen. Vanuatu Vaccination Coverage Survey 2016 card or history results of 81 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 58 percent and 3rd dose card only coverage of 52 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result.Reported data excluded due to decline in reported coverage from 95 percent to 75 percent with increase to 86 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2006 and 2014 levels. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Vanuatu Demographic and Health Survey 2013 card or history results of 55 percent modified for recall bias to 64 percent based on 1st dose card or history coverage of 76 percent, 1st dose card only coverage of 56 percent and 3rd dose card only coverage of 47 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2011: Reported data calibrated to 2006 and 2014 levels. Reported data excluded. Estimate follows survey result. Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: R-



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	64	64	86	86	80	81	85	85	90	78	62	68
Estimate GoC	•	•	•	•••	•••	•••	••	••	••	••	•	•
Official	NA	95	75	86	80	81	85	85	90	NA	NA	NA
Administrative	92	95	75	92	81	80	93	87	91	78	NA	NA
Survey	NA	55	NA	81	NA							

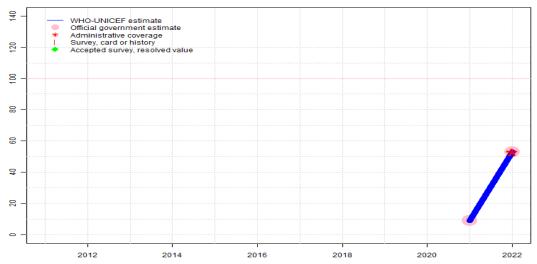
- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a 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 estimated DTP3 coverage. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=No accepted empirical data
- 2021: Estimate is based on estimated DTP3 coverage. GoC=No accepted empirical data
- 2020: Estimate informed by reported administrative data. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. GoC=R+ D+
- 2019: Estimate informed by reported data. GoC=R+ D+
- 2018: Estimate informed by reported data. GoC=R+ D+
- 2017: Estimate informed by reported data. GoC=R+ D+
- 2016: Estimate informed by reported data. GoC=R+ S+ D+
- 2015: Estimate informed by reported data. GoC=R+S+D+
- 2014: Survey report does not provide percent cards seen. Vanuatu Vaccination Coverage Survey 2016 card or history results of 81 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 58 percent and 3rd dose card only coverage of 52 percent. GoC=R+S+D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. Estimate follows survey result.Reported data excluded due to decline in reported coverage from 95 percent to 75 percent with increase to 86 percent. Estimate challenged by: D-
- 2012: Estimate based on DTP3 coverage. Vanuatu Demographic and Health Survey 2013 results ignored by working group. Not consistent with trends in reported data or 2016 survey. Vanuatu Demographic and Health Survey 2013 card or history results of 55 percent modifed for recall bias to 64 percent based on 1st dose card or history coverage of 76 percent, 1st dose card only coverage of 56 percent and 3rd dose card only coverage of 47 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-S-
- 2011: Estimate based on DTP3 coverage. Reported data excluded. Estimate follows survey result. Hib vaccine was introduced in 2011. Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: D-R-

## Vanuatu - RotaC





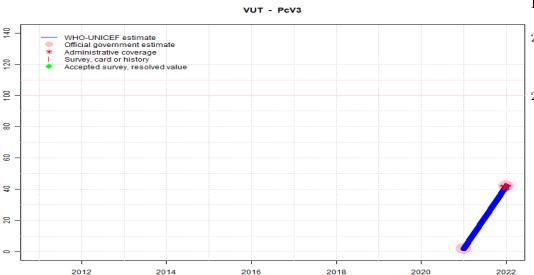
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	9	53									
Estimate GoC	NA	••	••									
Official	NA	9	53									
Administrative	NA	53										
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+
- 2021: Estimate informed by reported data. Rota virus vaccine introduced during 2021. Reporting began in 2021. GoC=R+



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	2	42									
Estimate GoC	NA	••	••									
Official	NA	2	42									
Administrative	NA	42										
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.
- •• 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. Reported administrative coverage reflects incomplete reporting (reports received from 59 percent of expected subnational units). WHO and UNICEF are aware of an ongoing 2023 MICS survey and await the final results. GoC=R+D+
- 2021: Estimate informed by reported data. Pneumococcal conjugate vaccine introduced during 2021. Reporting began in 2021. GoC=R+  $\,$

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.

### 2014 Vanuatu Vaccination Coverage Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	57.1	$12\text{-}23 \mathrm{\ m}$	1185	-
BCG	Card or History	94.6	$12\text{-}23 \mathrm{\ m}$	1185	-
DTP1	Card	57.7	$12\text{-}23 \mathrm{\ m}$	1185	-
DTP1	Card or History	94	$12\text{-}23 \mathrm{\ m}$	1185	-
DTP3	Card	52.4	$12\text{-}23 \mathrm{\ m}$	1185	-
DTP3	Card or History	81.1	$12\text{-}23 \mathrm{\ m}$	1185	-
HepB1	Card	57.7	$12\text{-}23 \mathrm{\ m}$	1185	-
HepB1	Card or History	94	$12\text{-}23 \mathrm{\ m}$	1185	-
HepB3	Card	52.4	$12\text{-}23 \mathrm{\ m}$	1185	-
HepB3	Card or History	81.1	12-23  m	1185	-
Hib1	Card	57.7	$12\text{-}23 \mathrm{\ m}$	1185	-
Hib1	Card or History	94	$12\text{-}23 \mathrm{\ m}$	1185	-
Hib3	Card	52.4	$12\text{-}23 \mathrm{\ m}$	1185	-
Hib3	Card or History	81.1	$12\text{-}23 \mathrm{\ m}$	1185	-
Pol3	Card	52.1	$12\text{-}23 \mathrm{\ m}$	1185	-
Pol3	Card or History	81.3	$12\text{-}23~\mathrm{m}$	1185	-

### 2013 Vanuatu Vaccination Coverage Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
MCV1	Card	41.3	$24\text{-}35~\mathrm{m}$	1028	-
MCV1	Card or History	84	$24\text{-}35~\mathrm{m}$	1028	-

### 2012 Vanuatu Demographic and Health Survey 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H $<$ 12 months	72.5	12-23 m	303	57
BCG	Card	51.4	$12-23 \mathrm{m}$	174	57
BCG	Card or History	72.9	12-23  m	303	57
BCG	History	21.5	$12-23 \mathrm{m}$	129	57
DTP1	C or H <12 months	75.4	$12-23 \mathrm{m}$	303	57
DTP1	Card	56.2	$12-23 \mathrm{m}$	174	57
DTP1	Card or History	76.2	12-23  m	303	57
DTP1	History	20	12-23  m	129	57
DTP3	C or $\dot{H}$ <12 months	48.8	$12\text{-}23~\mathrm{m}$	303	57
DTP3	Card	47.1	$12\text{-}23~\mathrm{m}$	174	57
DTP3	Card or History	55.1	$12\text{-}23~\mathrm{m}$	303	57
DTP3	History	8	$12\text{-}23~\mathrm{m}$	129	57
HepB1	C or H <12 months	75.4	$12\text{-}23~\mathrm{m}$	303	57
HepB1	Card	56.2	$12\text{-}23~\mathrm{m}$	174	57
HepB1	Card or History	76.2	$12\text{-}23~\mathrm{m}$	303	57
HepB1	History	20	$12\text{-}23~\mathrm{m}$	129	57
HepB3	C or H $<$ 12 months	48.8	$12\text{-}23~\mathrm{m}$	303	57
HepB3	Card	47.1	$12\text{-}23~\mathrm{m}$	174	57
HepB3	Card or History	55.1	$12\text{-}23~\mathrm{m}$	303	57
HepB3	History	8	$12\text{-}23~\mathrm{m}$	129	57
Hib1	C or H $<$ 12 months	75.4	$12\text{-}23~\mathrm{m}$	303	57
Hib1	Card	56.2	$12\text{-}23~\mathrm{m}$	174	57
Hib1	Card or History	76.2	$12\text{-}23 \mathrm{\ m}$	303	57
Hib1	History	20	$12\text{-}23~\mathrm{m}$	129	57
Hib3	C  or  H < 12  months	48.8	$12\text{-}23~\mathrm{m}$	303	57
Hib3	Card	47.1	$12\text{-}23~\mathrm{m}$	174	57
Hib3	Card or History	55.1	$12\text{-}23 \mathrm{\ m}$	303	57
Hib3	History	8	$12\text{-}23~\mathrm{m}$	129	57
MCV1	C  or  H < 12  months	12.1	$12\text{-}23~\mathrm{m}$	303	57
MCV1	Card	34.6	$12\text{-}23~\mathrm{m}$	174	57
MCV1	Card or History	52.6	$12\text{-}23~\mathrm{m}$	303	57
MCV1	History	18	$12\text{-}23~\mathrm{m}$	129	57
Pol1	C or H $<$ 12 months	72.8	$12\text{-}23~\mathrm{m}$	303	57
Pol1	Card	55.2	$12\text{-}23~\mathrm{m}$	174	57
Pol1	Card or History	73.6	$12\text{-}23~\mathrm{m}$	303	57
Pol1	History	18.4	$12\text{-}23~\mathrm{m}$	129	57
Pol3	C or H $<$ 12 months	45.4	$12\text{-}23~\mathrm{m}$	303	57

# Vanuatu - survey details

Pol3

Pol3

Pol3

Pol3

C or H <12 months

Card or History

Card

History

55.4

56.7

61.1

4.4

 $12-23 \mathrm{m}$ 

 $12\text{-}23~\mathrm{m}$ 

12-23 m

 $12\text{-}23~\mathrm{m}$ 

359

359

359

359

69

69

69

69

Pol3	Card	48	12-23 m	174	57	HepB1	C or H <12 months	65.3	12-23 m	359	69
Pol3	Card or History	52	$12\text{-}23 \mathrm{\ m}$	303	57	HepB1	Card	65.8	$12\text{-}23~\mathrm{m}$	359	69
Pol3	History	3.9	$12\text{-}23 \mathrm{\ m}$	129	57	HepB1	Card or History	65.8	$12\text{-}23~\mathrm{m}$	359	69
						HepB1	History	0	$12\text{-}23~\mathrm{m}$	359	69
						HepB3	C or H $<$ 12 months	55.3	$12\text{-}23~\mathrm{m}$	359	69
2006 Va	nuatu Multiple Indi	icator Cl	uster Surv	ey 200'	7	HepB3	Card	59.2	$12\text{-}23~\mathrm{m}$	359	69
						HepB3	Card or History	59.2	$12\text{-}23~\mathrm{m}$	359	69
		~		~ .	~ .	HepB3	History	0	$12\text{-}23~\mathrm{m}$	359	69
	Confirmation method	0	0	-		MCV1	C or H <12 months	37.2	$12\text{-}23~\mathrm{m}$	359	69
BCG	C  or  H < 12  months	79.1	12-23 m	359	69	MCV1	Card	43.6	$12\text{-}23~\mathrm{m}$	359	69
BCG	Card	68	12-23 m	359	69	MCV1	Card or History	52.5	12-23  m	359	69
BCG	Card or History	80.6	12-23 m	359	69	MCV1	History	8.9	12-23  m	359	69
BCG	History	12.6	12-23  m	359	69	Pol1	C or $\dot{H}$ <12 months	75.5	12-23  m	359	69
DTP1	C  or  H < 12  months	74.3	12-23 m	359	69	Pol1	Card	65.9	12-23  m	359	69
DTP1	Card	67.1	12-23  m	359	69	Pol1	Card or History	78.3	12-23  m	359	69
DTP1	Card or History	78.5	$12-23 \mathrm{m}$	359	69	Pol1	History	12.4	12-23  m	359	69
D D D 1	TT.	11 1	10.00	0 = 0	0.0		•				

History

History

Card

C or H <12 months

Card or History

DTP1

DTP3

DTP3

DTP3

DTP3

 $12\text{-}23 \mathrm{\ m}$ 

12-23 m

12-23 m

 $12\text{-}23 \mathrm{\ m}$ 

 $12-23 \mathrm{m}$ 

11.4

58.3

58.1

63.4

5.3

359

359

359

359

359

69

69

69

69

69

# Vanuatu - 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