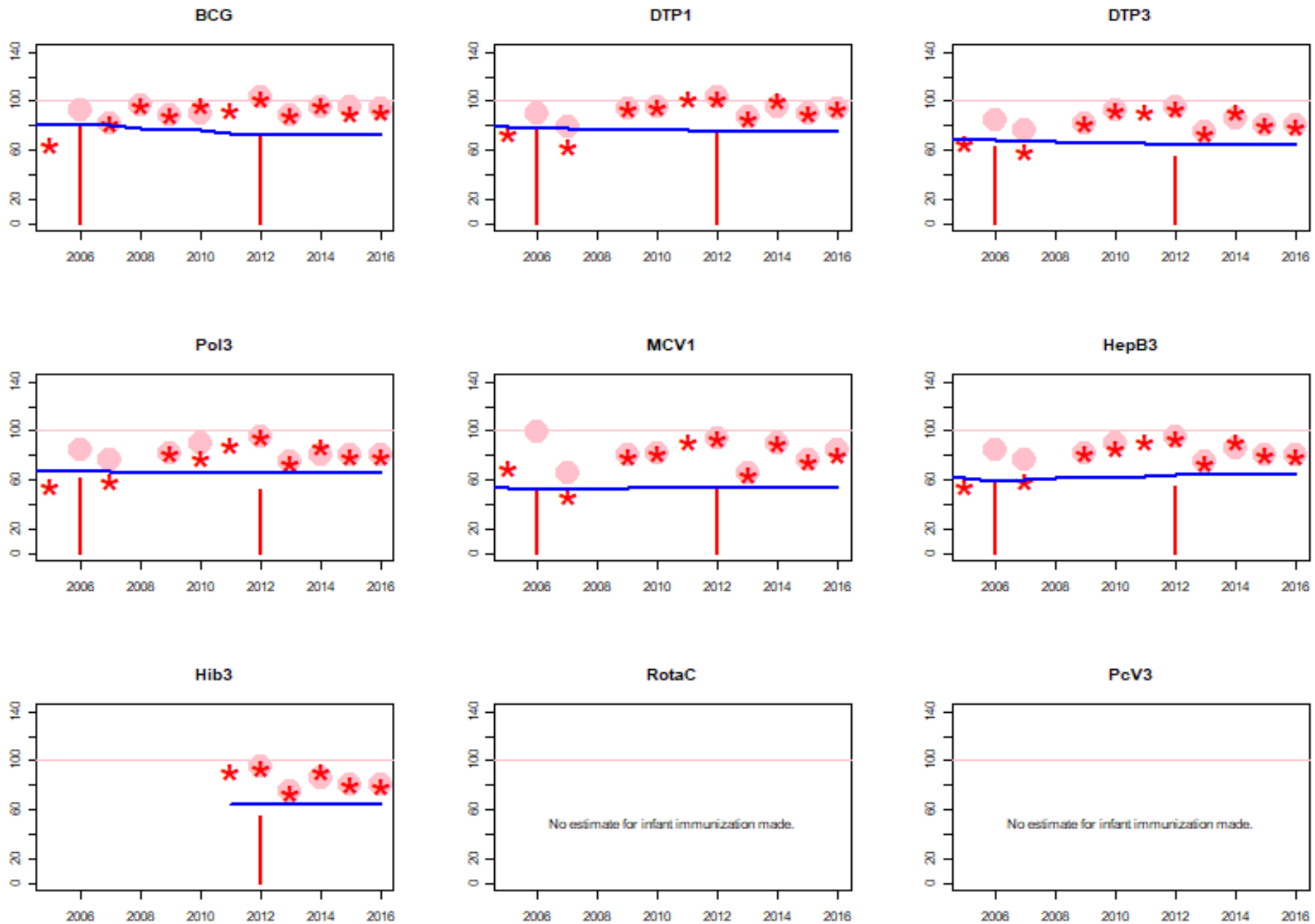


Vanuatu: WHO and UNICEF estimates of immunization coverage: 2016 revision



BACKGROUND NOTE: Each year WHO and UNICEF jointly review reports submitted by Member States regarding national immunization coverage, finalized survey reports as well as data from the published and grey literature. Based on these data, with due consideration to potential biases and the views of local experts, WHO and UNICEF attempt to distinguish between situations where the available empirical data accurately reflect immunization system performance and those where the data are likely to be compromised and present a misleading view of immunization coverage while jointly estimating the most likely coverage levels for each country.

WHO and UNICEF estimates are country-specific; that is to say, each country's data are reviewed individually, and data are not borrowed from other countries in the absence of data. Estimates are not based on ad hoc adjustments to reported data; in some instances empirical data are available from a single source, usually the nationally reported coverage data. In cases where no data are available for a given country/vaccine/year combination, data are considered from earlier and later years and interpolated to estimate coverage for the missing year(s). In cases where data sources are mixed and show large variation, an attempt is made to identify the most likely estimate with consideration of the possible biases in available data. For methods see:

*Burton et al. 2009. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.

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

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

DATA SOURCES.

ADMINISTRATIVE coverage: Reported by national authorities and based on aggregated administrative reports from health service providers on the number of vaccinations administered during a given period (numerator data) and reported target population data (denominator data). May be biased by inaccurate numerator and/or denominator data.

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.

SURVEY coverage: Based on estimated coverage from population-based household surveys among children aged 12-23 months or 24-35 months following a review of survey methods and results. Information is based on the combination of vaccination history from documented evidence or caregiver recall. Survey results are considered for the appropriate birth cohort based on the period of data collection.

ABBREVIATIONS

BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.

DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.

Pol3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine

immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (Pol3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated Pol3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated Pol3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

MCV1: percentage of surviving infants who received the 1st dose of measles containing vaccine. In countries where the national schedule recommends the 1st dose of MCV at 12 months or later based on the epidemiology of disease in the country, coverage estimates reflect the percentage of children who received the 1st dose of MCV as recommended.

MCV2: percentage of children who received the 2nd dose of measles containing vaccine according to the nationally recommended schedule.

RCV1: percentage of surviving infants who received the 1st dose of rubella containing vaccine. Coverage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration nor are the data represented in the accompanying graph and data table.

HepBB: percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are produced only for countries with a universal birth dose policy. Estimates are not produced for countries that recommend a birth dose to infants born to HepB virus-infected mothers only or where there is insufficient information to determine whether vaccination is within 24 hours of birth.

HepB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.

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

RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.

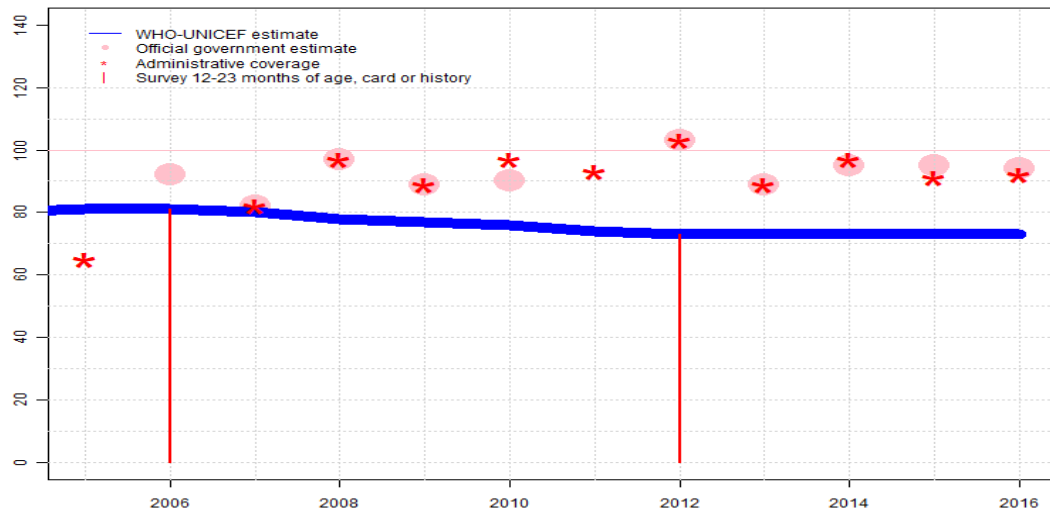
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PcV prior to the 1st birthday.

YFV: percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

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

Vanuatu - BCG

VUT - BCG



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	81	81	80	78	77	76	74	73	73	73	73	73
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	92	82	97	89	90	NA	103	89	95	95	94
Administrative	65	NA	82	97	89	97	93	103	89	97	91	92
Survey	NA	81	NA	NA	NA	NA	NA	73	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: 2015 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.

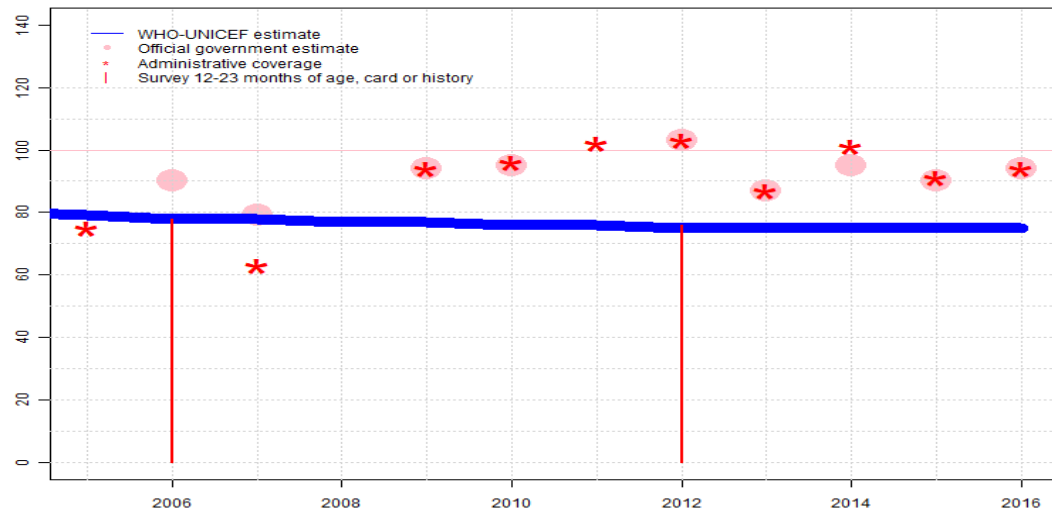
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 73 percent based on 1 survey(s). Reported data excluded. Estimate follows survey result. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2007: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2006: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 81 percent based on 1 survey(s). Estimate challenged by: R-
- 2005: Estimate based on interpolation between 1997 and 2006 levels. Fluctuating and inconsistent data suggest poor reporting. Estimate challenged by: R-

Vanuatu - DTP1

VUT - DTP1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	79	78	78	77	77	76	76	75	75	75	75	75
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	NA	90	79	NA	94	95	NA	103	87	95	90	94
Administrative	75	NA	63	NA	94	96	102	103	87	101	91	94
Survey	NA	78	NA	NA	NA	NA	NA	76	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: 2015 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.

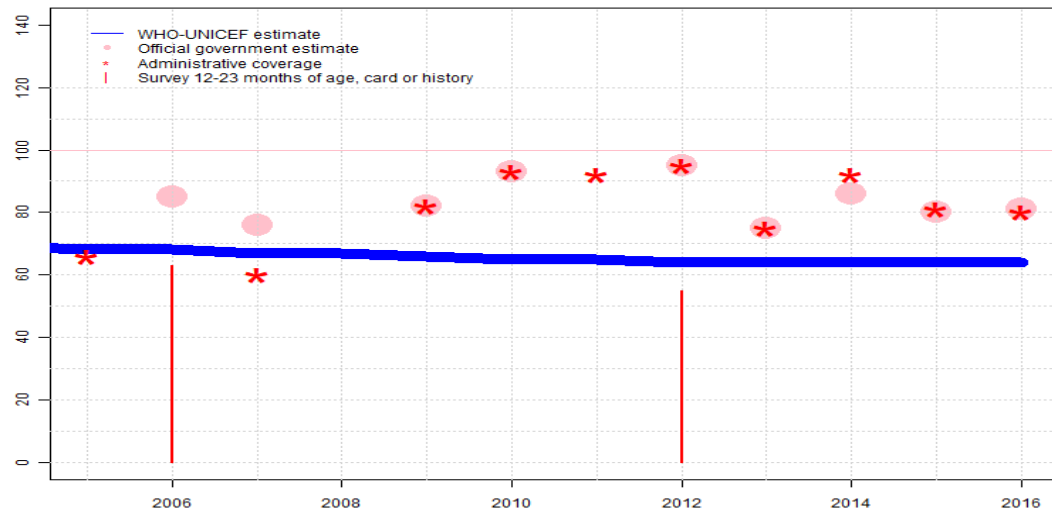
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Estimate based on extrapolation from data reported by national government. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-
- 2012: Estimate based on extrapolation from data reported by national government supported by survey. Survey evidence of 76 percent based on 1 survey(s). Reported data excluded. Estimate follows survey result. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 2006 and 2012 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: D-R-
- 2010: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 and 2012 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2006: Estimate of 78 percent assigned by working group. Estimate follows survey result. Reported data excluded due to an unexplained increase from 75 percent to 90 percent with decrease 79 percent. Estimate challenged by: R-
- 2005: Estimate based on interpolation between 1997 and 2006 levels. Fluctuating and inconsistent data suggest poor reporting. Estimate challenged by: R-

Vanuatu - DTP3

VUT - DTP3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	68	68	67	67	66	65	65	64	64	64	64	64
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	85	76	NA	82	93	NA	95	75	86	80	81
Administrative	66	NA	60	NA	82	93	92	95	75	92	81	80
Survey	NA	63	NA	NA	NA	NA	NA	55	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: 2015 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.

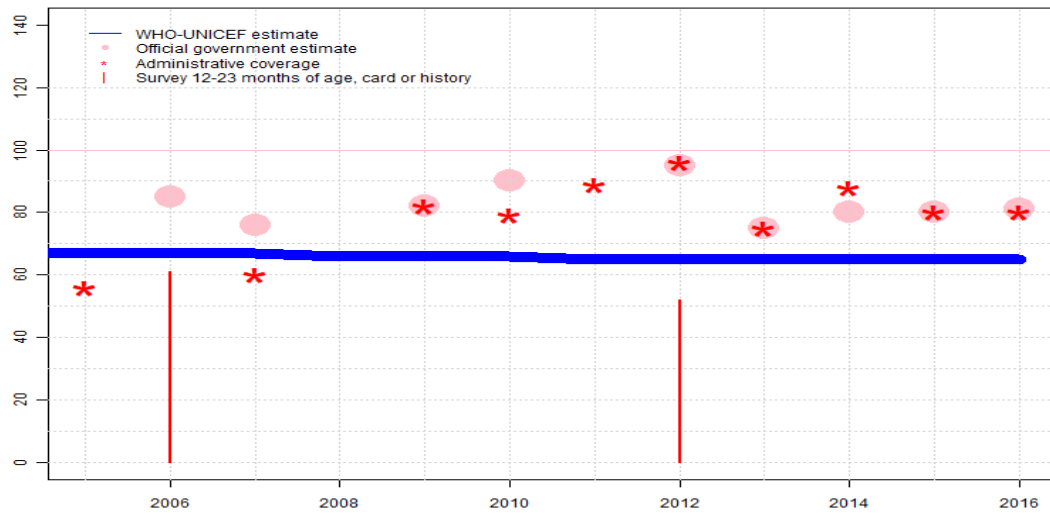
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 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: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 64 percent based on 1 survey(s). 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 3d dose card only coverage of 47 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 and 2012 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2006: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 68 percent based on 1 survey(s). Vanuatu Multiple Indicator Cluster Survey 2007 card or history results of 63 percent modified for recall bias to 68 percent based on 1st dose card or history coverage of 78 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 58 percent. Estimate challenged by: R-
- 2005: Estimate based on interpolation between 1997 and 2006 levels. Fluctuating and inconsistent data suggest poor reporting. Estimate challenged by: R-

Vanuatu - Pol3

VUT - Pol3



Description:

- 2016: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 65 percent based on 1 survey(s). 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 3d 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 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 and 2012 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2006: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 67 percent based on 1 survey(s). Vanuatu Multiple Indicator Cluster Survey 2007 card or history results of 61 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 78 percent, 1st dose card only coverage of 66 percent and 3d dose card only coverage of 57 percent. Estimate challenged by: R-
- 2005: Estimate based on interpolation between 1997 and 2006 levels. Fluctuating and inconsistent data suggest poor reporting. Estimate challenged by: R-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	67	67	67	66	66	66	65	65	65	65	65	65
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	85	76	NA	82	90	NA	95	75	80	80	81
Administrative	56	NA	60	NA	82	79	89	96	75	88	80	80
Survey	NA	61	NA	NA	NA	NA	NA	52	NA	NA	NA	NA

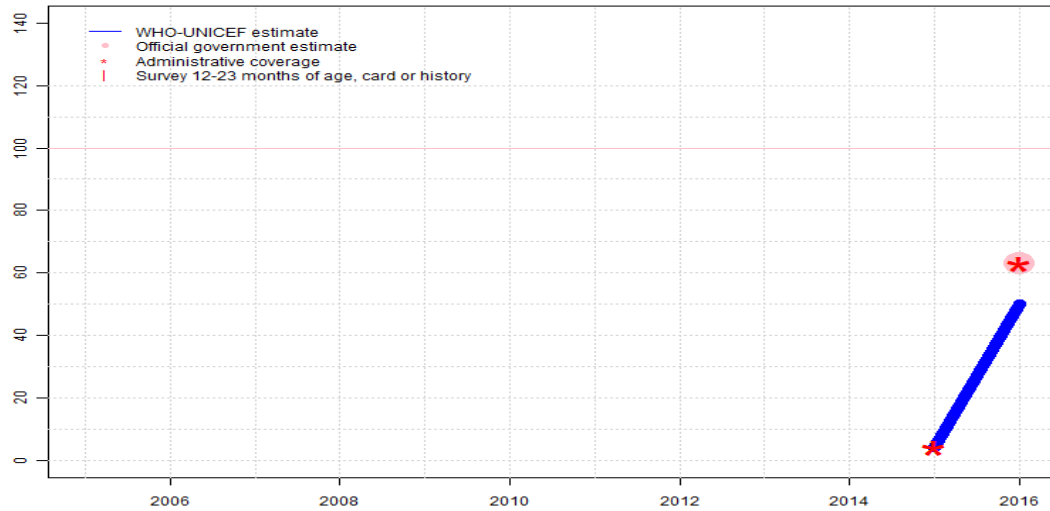
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2015 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.

Vanuatu - IPV1

VUT - IPV1



Description:

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. Reported data excluded. Estimate follows survey result. Reported data excluded due to unexplained sudden change in coverage from 4 level to 63 percent. Estimate challenged by: D-R-

2015: IPV introduced in December 2015. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: R-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	50
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	63
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	63
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

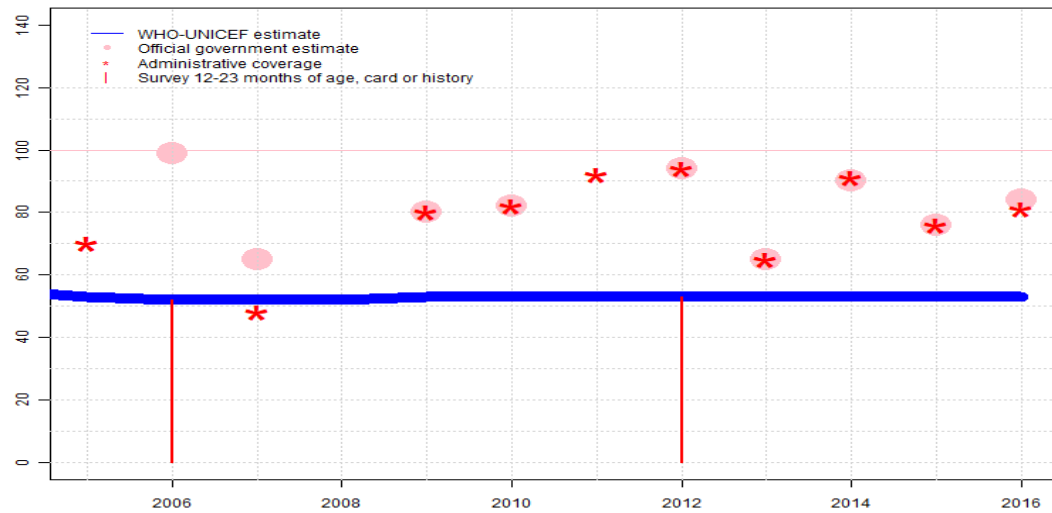
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 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.

Vanuatu - MCV1

VUT - MCV1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	53	52	52	52	53	53	53	53	53	53	53	53
Estimate GoC	•	•	•	••	•	•	•	•	•	•	•	•
Official	NA	99	65	NA	80	82	NA	94	65	90	76	84
Administrative	70	NA	48	NA	80	82	92	94	65	91	76	81
Survey	NA	52	NA	NA	NA	NA	NA	53	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.

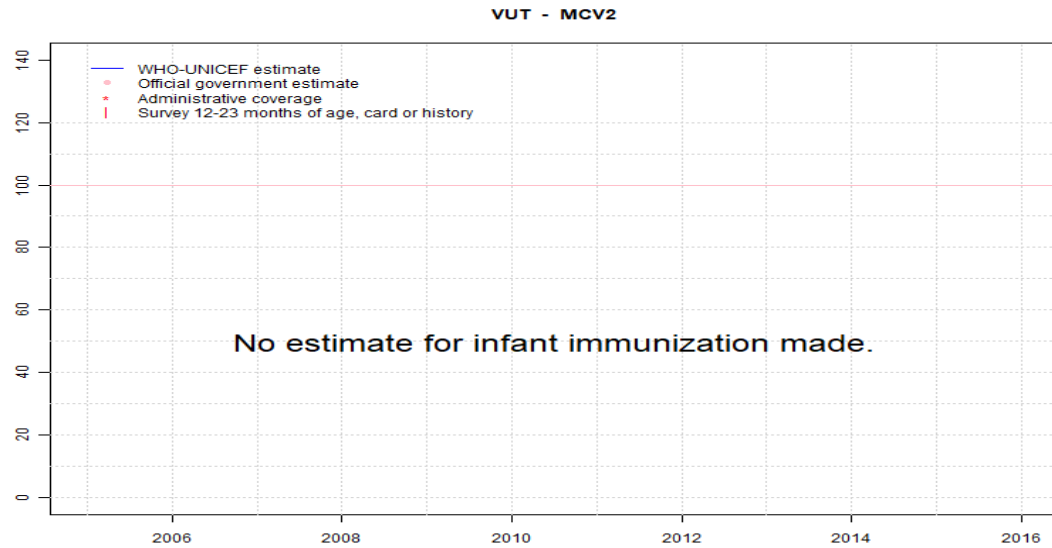
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2016: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Reported data excluded due to an unexplained increase from 65 percent to 90 percent with decrease 76 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. 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: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 53 percent based on 1 survey(s). Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Schedule changed from 9 months to 12 months. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 and 2012 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2006: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 52 percent based on 1 survey(s). Reported data excluded due to an unexplained increase from 70 percent to 99 percent with decrease 65 percent. Reported coverage includes doses administered during the 2006 measles campaign. Estimate challenged by: R-
- 2005: Estimate based on interpolation between 1997 and 2006 levels. Fluctuating and inconsistent data suggest poor reporting. Estimate challenged by: D-R-

Vanuatu - MCV2



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

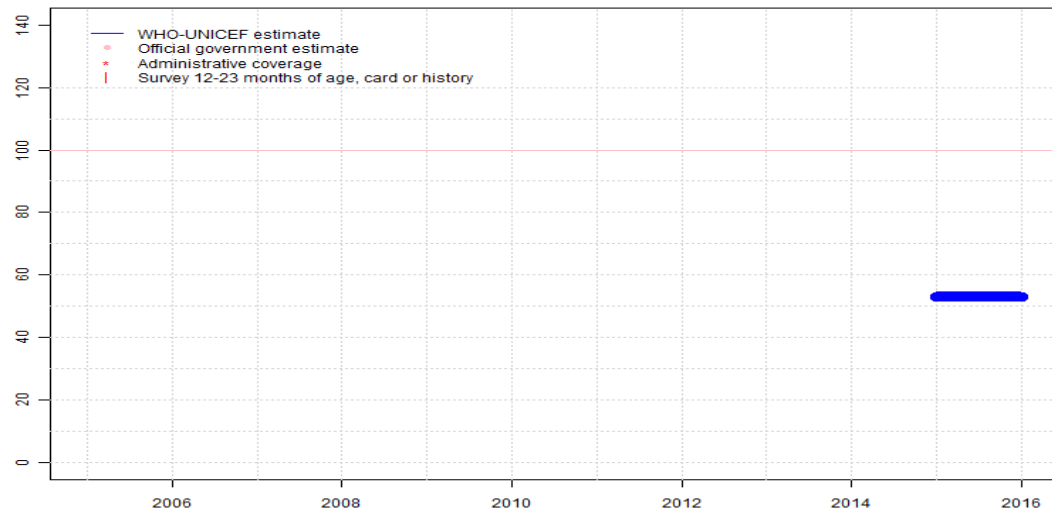
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 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.

Vanuatu - RCV1

VUT - RCV1



Description:

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

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

2015: Estimate based on estimated MCV1. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-

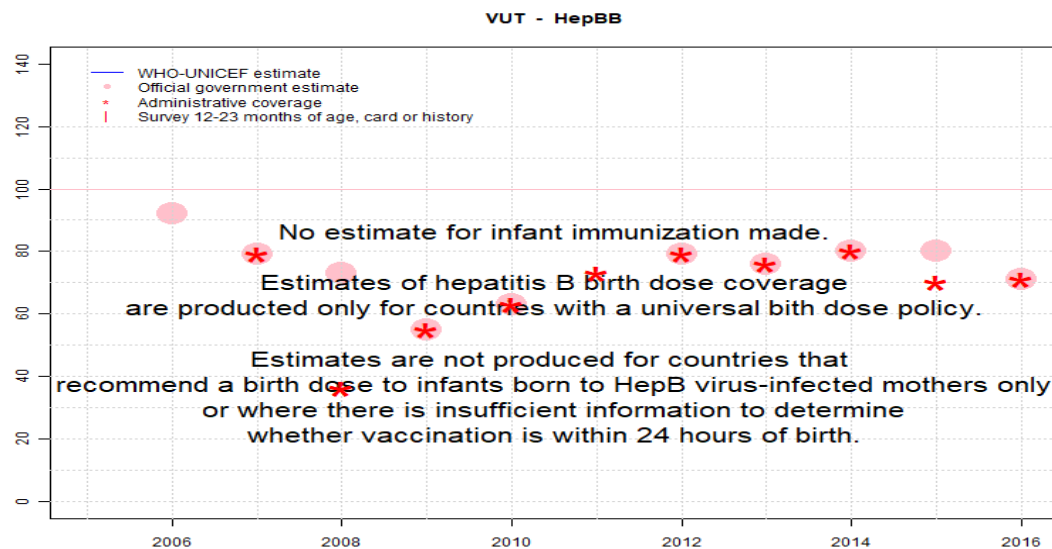
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53	53
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 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.

Vanuatu - HepBB



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	92	79	73	55	63	NA	79	76	80	80	71
Administrative	NA	NA	79	36	55	63	73	79	76	80	70	71
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

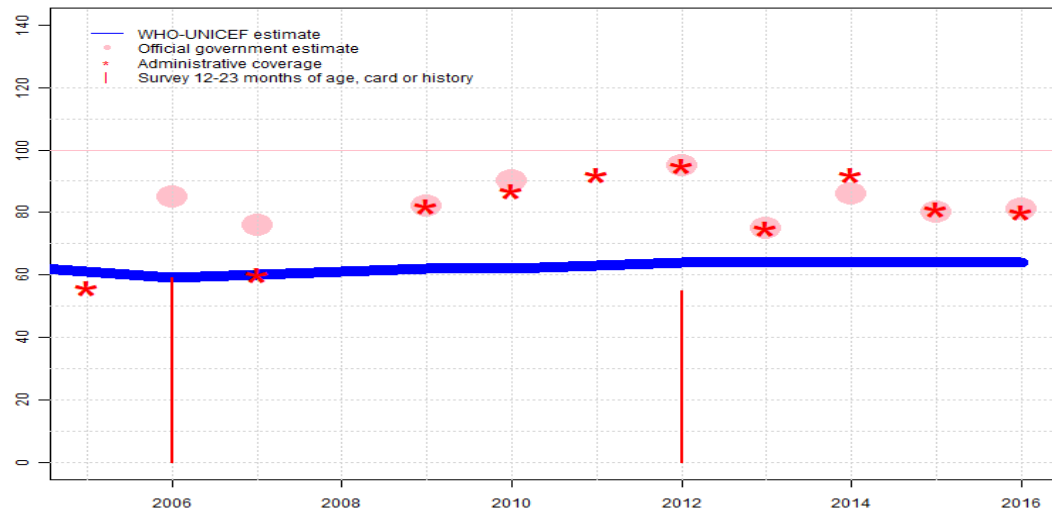
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 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.

Vanuatu - HepB3

VUT - HepB3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	61	59	60	61	62	62	63	64	64	64	64	64
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	85	76	NA	82	90	NA	95	75	86	80	81
Administrative	56	NA	60	NA	82	87	92	95	75	92	81	80
Survey	NA	59	NA	NA	NA	NA	NA	55	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: 2015 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.

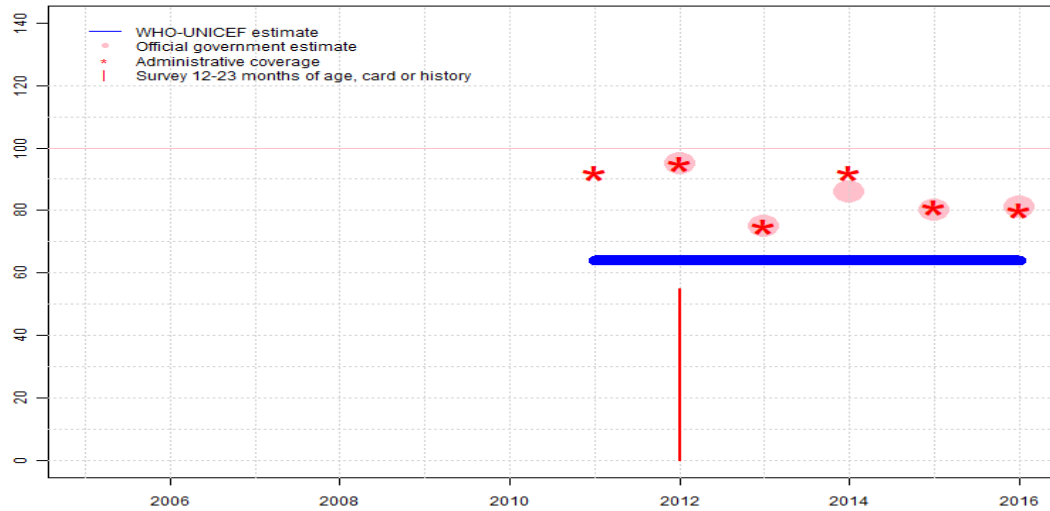
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 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: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 64 percent based on 1 survey(s). 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 3d dose card only coverage of 47 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2009: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2006 and 2012 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2006 and 2012 levels. Reported data excluded. Estimate follows survey result. Estimate challenged by: R-
- 2006: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 59 percent based on 1 survey(s). Estimate challenged by: R-
- 2005: Estimate based on interpolation between 1997 and 2006 levels. Fluctuating and inconsistent data suggest poor reporting. Estimate challenged by: D-R-

Vanuatu - Hib3

VUT - Hib3



Description:

- 2016: Estimates based on DTP3 coverage. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2015: Estimates based on DTP3 coverage. Reported data excluded. Estimate follows survey result. WHO and UNICEF working group is aware of the ongoing EPI coverage survey and await the final results. Estimate challenged by: D-R-
- 2014: Estimates based on DTP3 coverage. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2013: Estimates based on DTP3 coverage. 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: Estimates based on DTP3 coverage. 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 3d dose card only coverage of 47 percent. Reported data excluded. Estimate follows survey result. Estimate challenged by: D-R-
- 2011: Estimates 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-

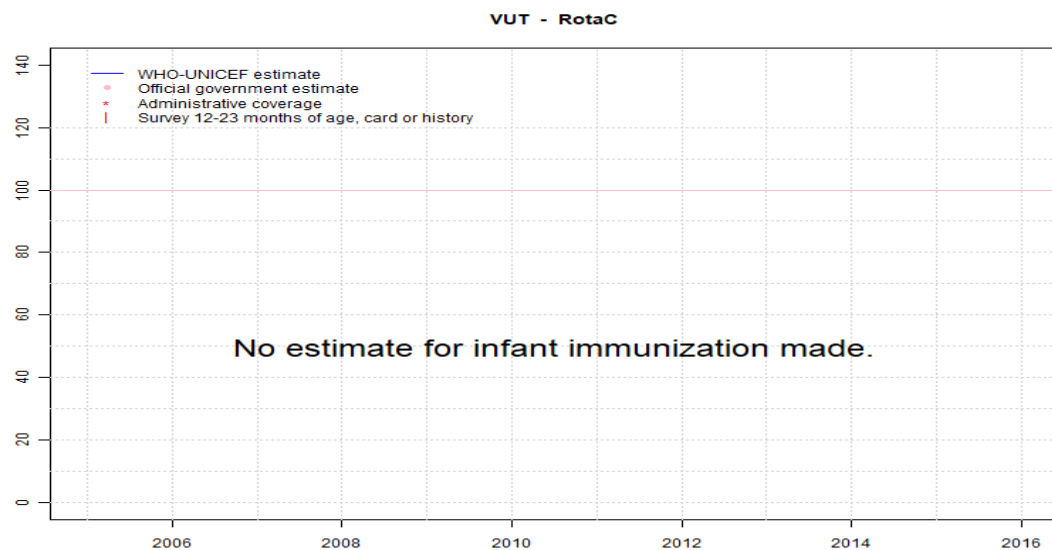
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	64	64	64	64	64	64
Estimate GoC	NA	NA	NA	NA	NA	NA	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	95	75	86	80	81
Administrative	NA	NA	NA	NA	NA	NA	92	95	75	92	81	80
Survey	NA	NA	NA	NA	NA	NA	NA	55	NA	NA	NA	NA

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: 2015 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.

Vanuatu - RotaC



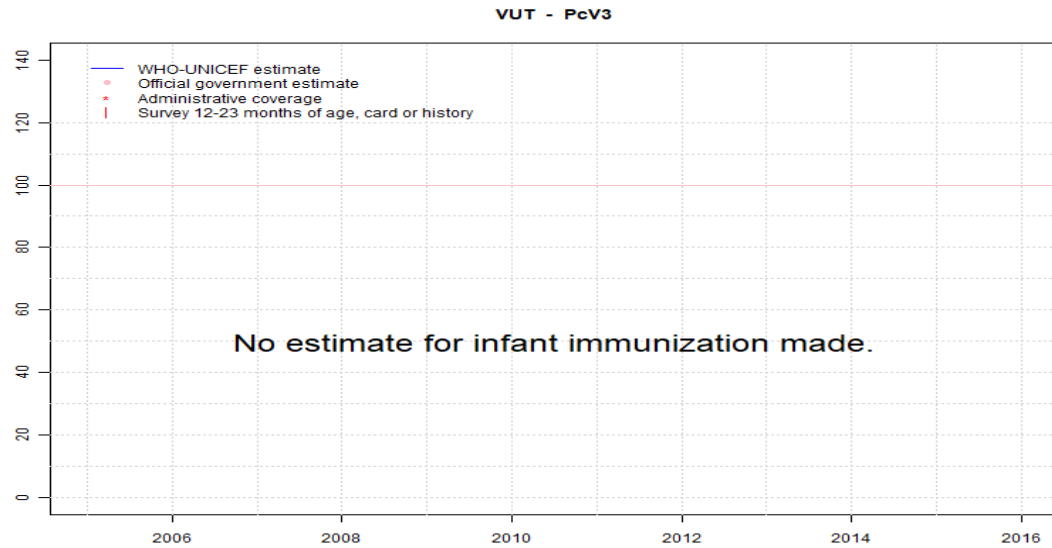
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 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.

Vanuatu - PcV3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 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.

Vanuatu - survey details

2012 Vanuatu Demographic and Health Survey 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	72	12-23 m	303	57
BCG	Card	51	12-23 m	174	57
BCG	Card or History	73	12-23 m	303	57
BCG	History	22	12-23 m	129	57
DTP1	C or H <12 months	75	12-23 m	303	57
DTP1	Card	56	12-23 m	174	57
DTP1	Card or History	76	12-23 m	303	57
DTP1	History	20	12-23 m	129	57
DTP3	C or H <12 months	49	12-23 m	303	57
DTP3	Card	47	12-23 m	174	57
DTP3	Card or History	55	12-23 m	303	57
DTP3	History	8	12-23 m	129	57
HepB1	C or H <12 months	75	12-23 m	303	57
HepB1	Card	56	12-23 m	174	57
HepB1	Card or History	76	12-23 m	303	57
HepB1	History	20	12-23 m	129	57
HepB3	C or H <12 months	49	12-23 m	303	57
HepB3	Card	47	12-23 m	174	57
HepB3	Card or History	55	12-23 m	303	57
HepB3	History	8	12-23 m	129	57
Hib1	C or H <12 months	75	12-23 m	303	57
Hib1	Card	56	12-23 m	174	57
Hib1	Card or History	76	12-23 m	303	57
Hib1	History	20	12-23 m	129	57
Hib3	C or H <12 months	49	12-23 m	303	57
Hib3	Card	47	12-23 m	174	57
Hib3	Card or History	55	12-23 m	303	57
Hib3	History	8	12-23 m	129	57
MCV1	C or H <12 months	12	12-23 m	303	57
MCV1	Card	35	12-23 m	174	57
MCV1	Card or History	53	12-23 m	303	57
MCV1	History	18	12-23 m	129	57
Pol1	C or H <12 months	73	12-23 m	303	57
Pol1	Card	55	12-23 m	174	57
Pol1	Card or History	74	12-23 m	303	57
Pol1	History	18	12-23 m	129	57
Pol3	C or H <12 months	45	12-23 m	303	57
Pol3	Card	48	12-23 m	174	57

Pol3	Card or History	52	12-23 m	303	57
Pol3	History	4	12-23 m	129	57

2006 Vanuatu Multiple Indicator Cluster Survey 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	79	12-23 m	359	69
BCG	Card	68	12-23 m	359	69
BCG	Card or History	81	12-23 m	359	69
BCG	History	13	12-23 m	359	69
DTP1	C or H <12 months	74	12-23 m	359	69
DTP1	Card	67	12-23 m	359	69
DTP1	Card or History	78	12-23 m	359	69
DTP1	History	11	12-23 m	359	69
DTP3	C or H <12 months	58	12-23 m	359	69
DTP3	Card	58	12-23 m	359	69
DTP3	Card or History	63	12-23 m	359	69
DTP3	History	5	12-23 m	359	69
HepB1	C or H <12 months	65	12-23 m	359	69
HepB1	Card	66	12-23 m	359	69
HepB1	Card or History	66	12-23 m	359	69
HepB1	History	0	12-23 m	359	69
HepB3	C or H <12 months	55	12-23 m	359	69
HepB3	Card	59	12-23 m	359	69
HepB3	Card or History	59	12-23 m	359	69
HepB3	History	0	12-23 m	359	69
MCV1	C or H <12 months	37	12-23 m	359	69
MCV1	Card	44	12-23 m	359	69
MCV1	Card or History	52	12-23 m	359	69
MCV1	History	9	12-23 m	359	69
Pol1	C or H <12 months	76	12-23 m	359	69
Pol1	Card	66	12-23 m	359	69
Pol1	Card or History	78	12-23 m	359	69
Pol1	History	12	12-23 m	359	69
Pol3	C or H <12 months	55	12-23 m	359	69
Pol3	Card	57	12-23 m	359	69
Pol3	Card or History	61	12-23 m	359	69
Pol3	History	4	12-23 m	359	69

Vanuatu - survey details

Further information and estimates for previous years are available at:

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

http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html