

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

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

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

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

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

## DATA SOURCES.

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

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

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

## ABBREVIATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

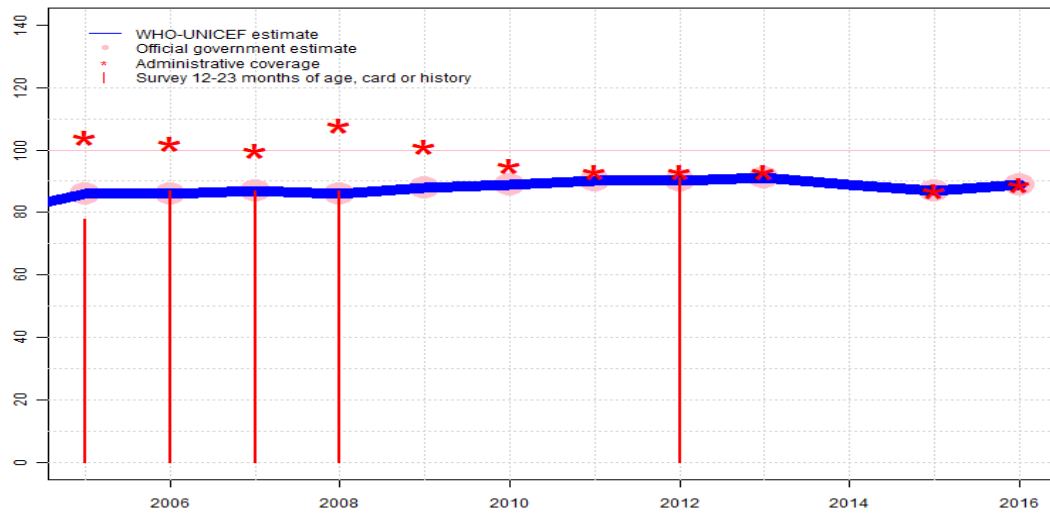
**PcV3:** percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect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

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

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# India - BCG

IND - BCG



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	86	86	87	86	88	89	90	90	91	89	87	89
Estimate GoC	•	•	•••	•	•••	•••	•••	•••	•••	••	••	••
Official	86	86	87	86	88	89	90	90	91	NA	87	89
Administrative	104	102	100	108	101	95	93	93	93	NA	87	89
Survey	78	87	87	87	NA	NA	NA	91	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.

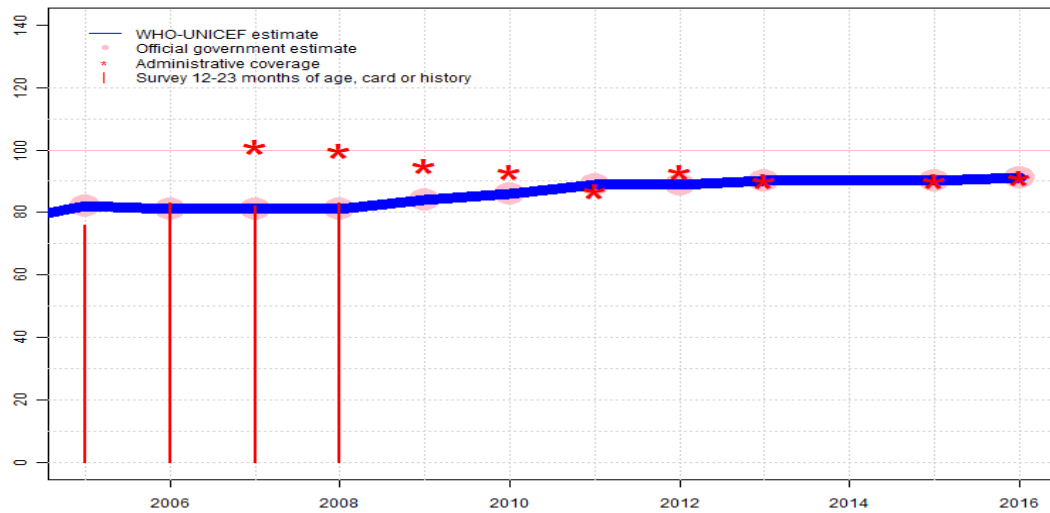
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Results from the National Family Health Survey 2015-16 Fact Sheet suggests coverage of 93 percent. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between data reported by national government. During May 2015, the Government of India conducted a review of state-level administrative and survey-based coverage data to derive a revised time series of official coverage estimates from 1998 through 2013. WHO and UNICEF are aware of recent state-level surveys conducted in high-risk states as well as on-going routine coverage monitoring. GoC=S+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). GoC=R+ S+ D+
- 2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 78 percent based on 1 survey(s). Estimate challenged by: D-

# India - DTP1

IND - DTP1



## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between data reported by national government. During 2014, national immunization schedule included DTP as well as DTP-HepB-Hib. DTP-HepB-Hib combination vaccine introduced during 2013. During May 2015, the Government of India conducted a review of state-level administrative and survey-based coverage data to derive a revised time series of official coverage estimates from 1998 through 2013. WHO and UNICEF are aware of recent state-level surveys conducted in high-risk states as well as on-going routine coverage monitoring. GoC=No accepted empirical data
- 2013: Estimate based on coverage reported by national government. GoC=Assigned by working group. Estimate is supported by D+
- 2012: Estimate based on coverage reported by national government. GoC=Assigned by working group. Estimate is supported by D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government supported by survey. Survey evidence of 83 percent based on 1 survey(s). Stock out reported however insufficient data to reflect impact in the estimate. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 82 percent based on 1 survey(s). GoC=R+ S+
- 2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 83 percent based on 1 survey(s). GoC=R+ S+
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 76 percent based on 1 survey(s). GoC=R+ S+

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	82	81	81	81	84	86	89	89	90	90	90	91
Estimate GoC	●●	●●	●●	●	●	●	●●	●●	●●	●	●●	●●
Official	82	81	81	81	84	86	89	89	90	NA	90	91
Administrative	NA	NA	101	100	95	93	87	93	90	NA	90	91
Survey	76	83	82	83	NA	NA	NA	NA	NA	NA	NA	NA

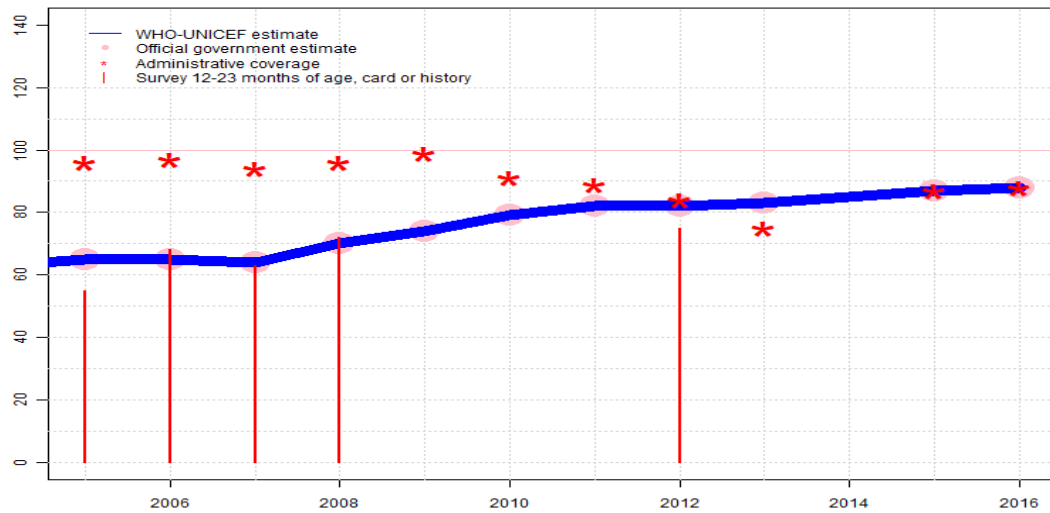
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

# India - DTP3

IND - DTP3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	65	65	64	70	74	79	82	82	83	85	87	88
Estimate GoC	•	•	•	•	•	•	•••	•••	•••	••	••	••
Official	65	65	64	70	74	79	82	82	83	NA	87	88
Administrative	96	97	94	96	99	91	89	84	75	NA	87	88
Survey	55	68	63	72	NA	NA	NA	75	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.

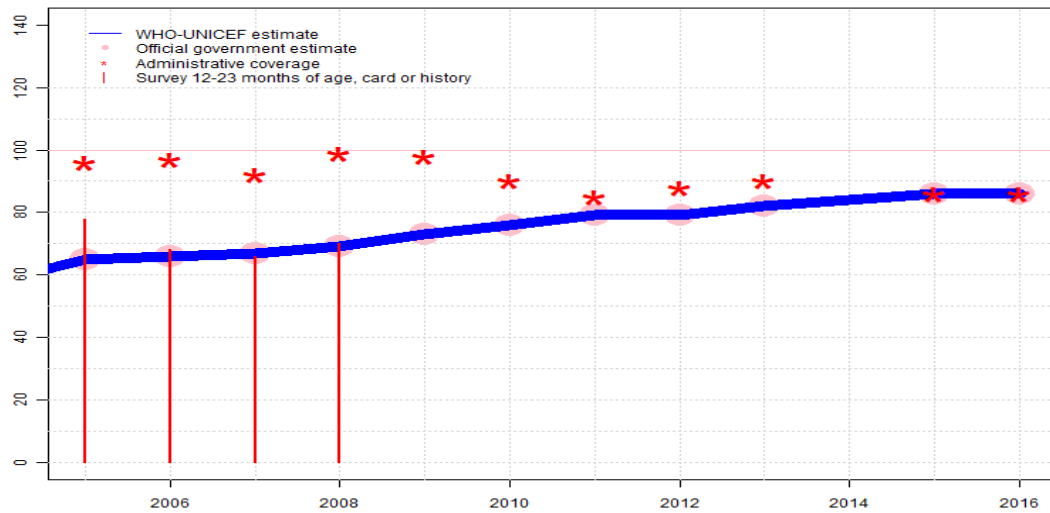
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Results from the National Family Health Survey 2015-16 Fact Sheet suggests coverage of 78 percent. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between data reported by national government. During 2014, national immunization schedule included DTP as well as DTP-HepB-Hib. DTP-HepB-Hib combination vaccine introduced during 2013. During May 2015, the Government of India conducted a review of state-level administrative and survey-based coverage data to derive a revised time series of official coverage estimates from 1998 through 2013. WHO and UNICEF are aware of recent state-level surveys conducted in high-risk states as well as on-going routine coverage monitoring. GoC=S+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 75 percent based on 1 survey(s). GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-S-
- 2008: Estimate based on coverage reported by national government supported by survey. Survey evidence of 72 percent based on 1 survey(s). Stock out reported however insufficient data to reflect impact in the estimate. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 63 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 68 percent based on 1 survey(s). Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 67 percent based on 1 survey(s). India National Family Health Survey (NFHS-3) 2005-2006 card or history results of 55 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 76 percent, 1st dose card only coverage of 98 percent and 3d dose card only coverage of 87 percent. Estimate challenged by: D-

# India - Pol3

IND - Pol3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	65	66	67	69	73	76	79	79	82	84	86	86
Estimate GoC	•	•	•	•	•	•	••	•	•	•	••	••
Official	65	66	67	69	73	76	79	79	82	NA	86	86
Administrative	96	97	92	99	98	90	85	88	90	NA	86	86
Survey	78	68	66	70	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.

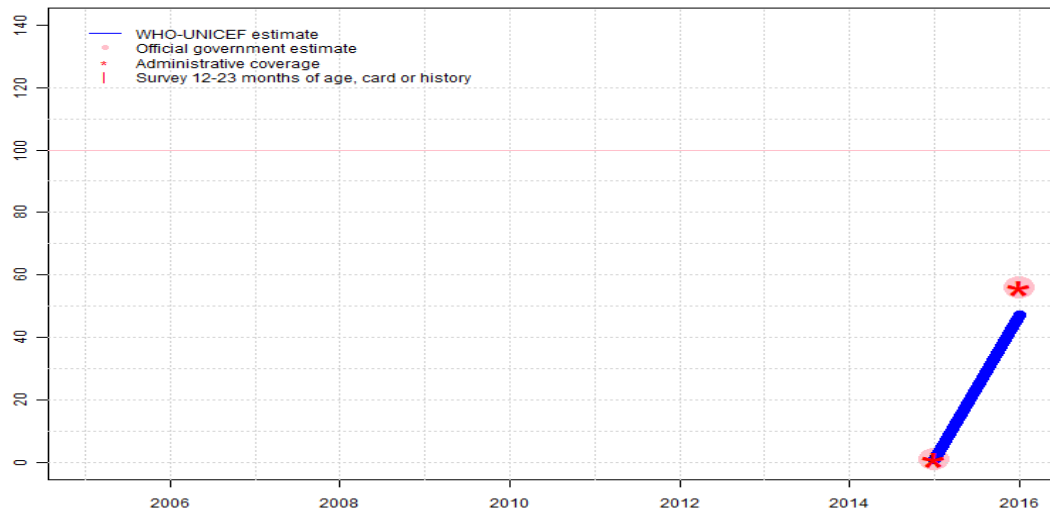
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Results from the National Family Health Survey 2015-16 Fact Sheet suggests coverage of 73 percent. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between data reported by national government. During May 2015, the Government of India conducted a review of state-level administrative and survey-based coverage data to derive a revised time series of official coverage estimates from 1998 through 2013. WHO and UNICEF are aware of recent state-level surveys conducted in high-risk states as well as on-going routine coverage monitoring. GoC=No accepted empirical data
- 2013: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government supported by survey. Survey evidence of 70 percent based on 1 survey(s). Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 66 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 68 percent based on 1 survey(s). Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government. India National Family Health Survey (NFHS-3) 2005-2006 results ignored by working group. The 2005 National Family Health Survey (NFHS-3) 2005-2006 card or history results likely include campaign doses. India National Family Health Survey (NFHS-3) 2005-2006 card or history results of 78 percent modified for recall bias to 83 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 98 percent and 3d dose card only coverage of 87 percent. Estimate challenged by: D-

# India - IPV1

IND - IPV1



## Description:

2016: Programme reports 56 percent coverage achieved in 85 percent of the national target population. Estimate is based on annualized coverage in the national target population. Programme is delivering fractional doses of IPV. Reported data excluded due to unexplained sudden change in coverage from 1 level to 56 percent. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Estimate challenged by: R-

2015: Estimate based on coverage reported by national government. Inactivated polio vaccine introduced in November 2015. GoC=R+ D+

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	47
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	••	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	56
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	56
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.

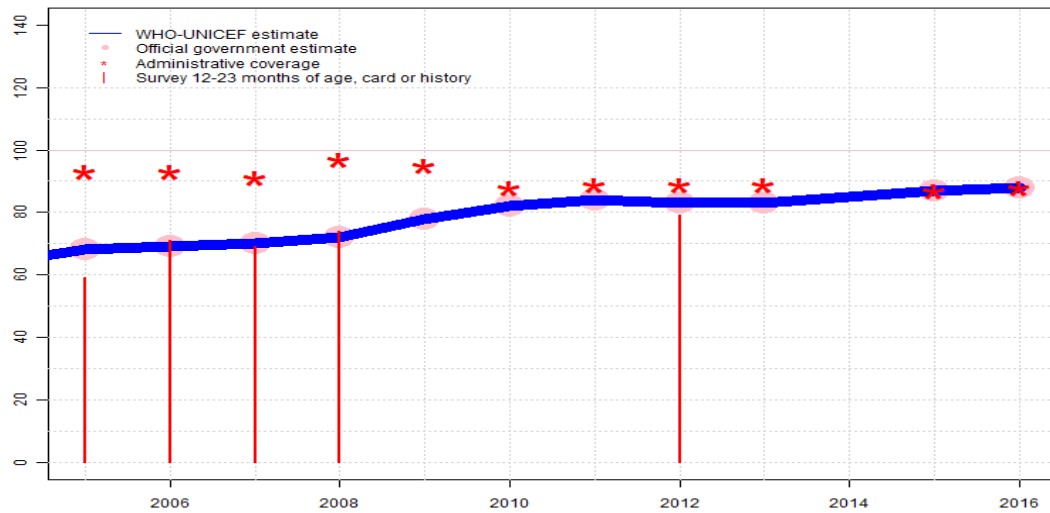
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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



# India - MCV1

IND - MCV1



## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Results from the National Family Health Survey 2015-16 Fact Sheet suggests coverage of 81 percent. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between data reported by national government. During May 2015, the Government of India conducted a review of state-level administrative and survey-based coverage data to derive a revised time series of official coverage estimates from 1998 through 2013. WHO and UNICEF are aware of recent state-level surveys conducted in high-risk states as well as on-going routine coverage monitoring. GoC=S+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 79 percent based on 1 survey(s). GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government supported by survey. Survey evidence of 74 percent based on 1 survey(s). Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 69 percent based on 1 survey(s). Estimate challenged by: D-S-
- 2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 71 percent based on 1 survey(s). Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 59 percent based on 1 survey(s). Estimate challenged by: D-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	68	69	70	72	78	82	84	83	83	85	87	88
Estimate GoC	•	•	•	•	•	•••	•••	•••	•••	••	••	••
Official	68	69	70	72	78	82	84	83	83	NA	87	88
Administrative	93	93	91	97	95	88	89	89	89	NA	87	88
Survey	59	71	69	74	NA	NA	NA	79	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.

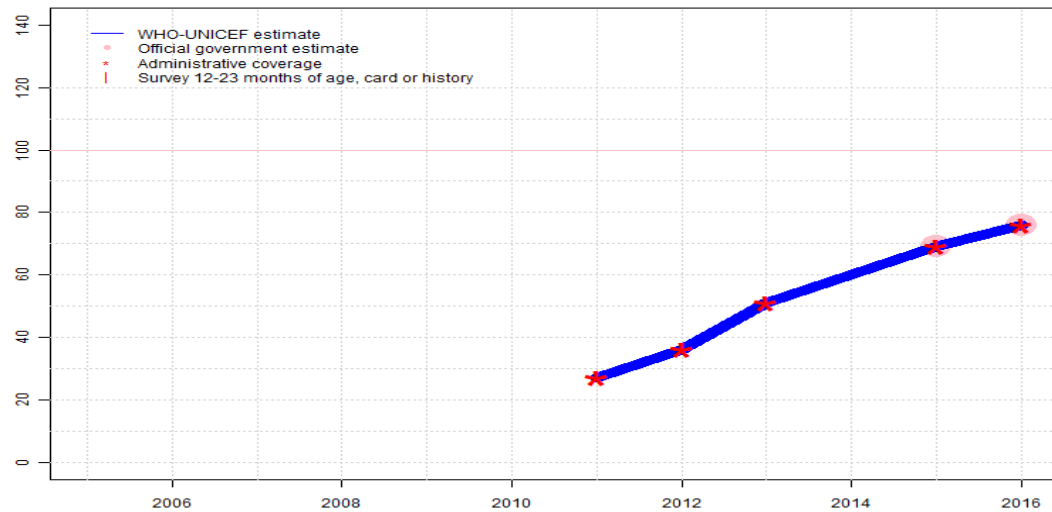
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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



# India - MCV2

IND - MCV2



## Description:

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

2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on interpolation between reported values. GoC=No accepted empirical data

2013: Estimate based on reported administrative estimate. Estimate is based on reported data. GoC=R+ D+

2012: Estimate based on reported administrative estimate. GoC=R+ D+

2011: Estimate based on reported administrative estimate. Measles second dose administered subnationally among children aged 16-24 months. GoC=R+ D+

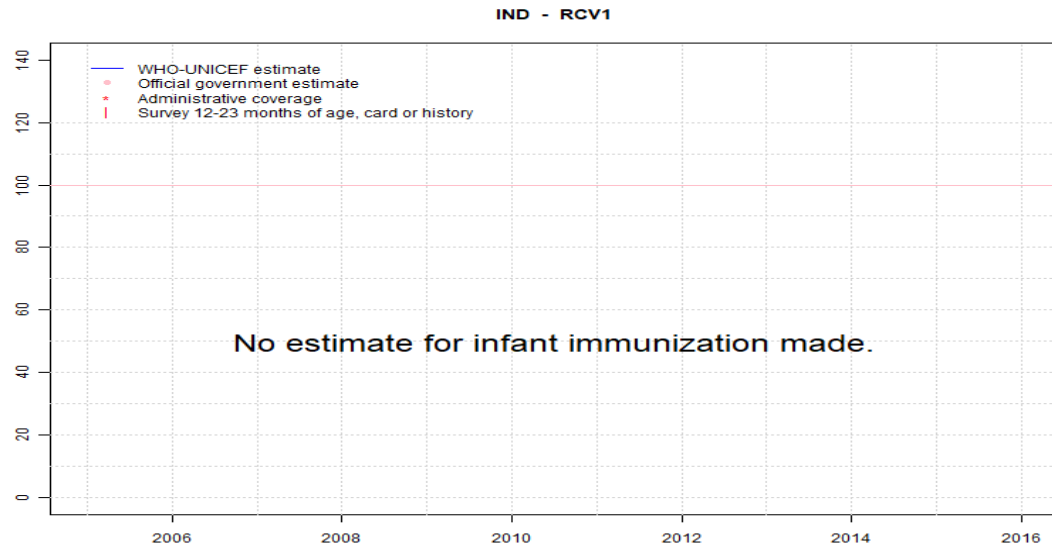
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	27	36	51	60	69	76
Estimate GoC	NA	NA	NA	NA	NA	NA	••	••	••	•	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	69	76
Administrative	NA	NA	NA	NA	NA	NA	27	36	51	NA	69	76
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

# India - RCV1



	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

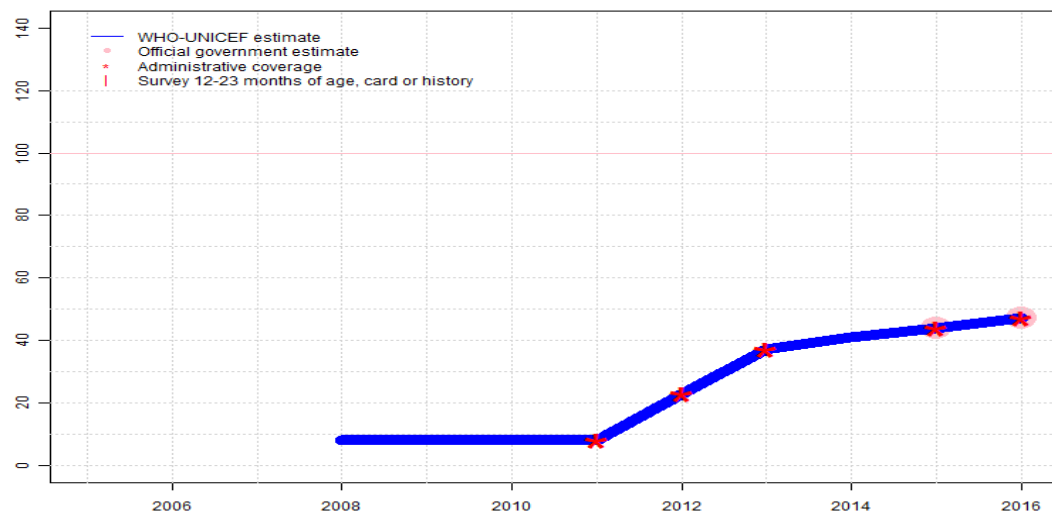
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

# India - HepBB

IND - HepBB



## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2013: Estimate based on reported administrative estimate. Estimate is based on reported data. GoC=R+ D+
- 2012: Estimate based on reported administrative estimate. GoC=R+ D+
- 2011: Estimate based on reported administrative estimate. GoC=R+ D+
- 2010: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- 2009: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- 2008: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	8	8	8	8	23	37	41	44	47
Estimate GoC	NA	NA	NA	•	•	•	••	••	••	•	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44	47
Administrative	NA	NA	NA	NA	NA	NA	8	23	37	NA	44	47
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

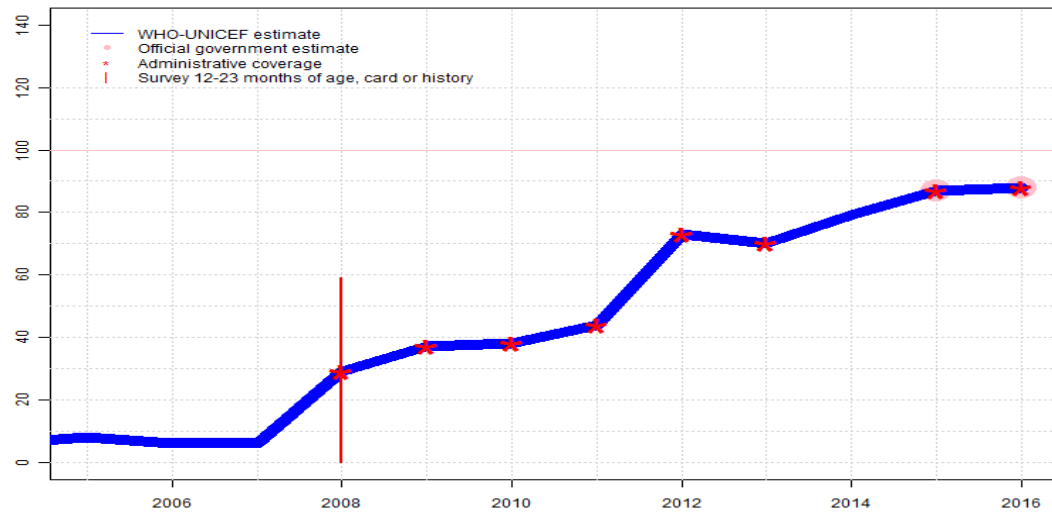
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

# India - HepB3

IND - HepB3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	8	6	6	29	37	38	44	73	70	79	87	88
Estimate GoC	•	•	•	••	••	••	••	••	••	•	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87	88
Administrative	NA	NA	NA	29	37	38	44	73	70	NA	87	88
Survey	NA	NA	NA	59	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.

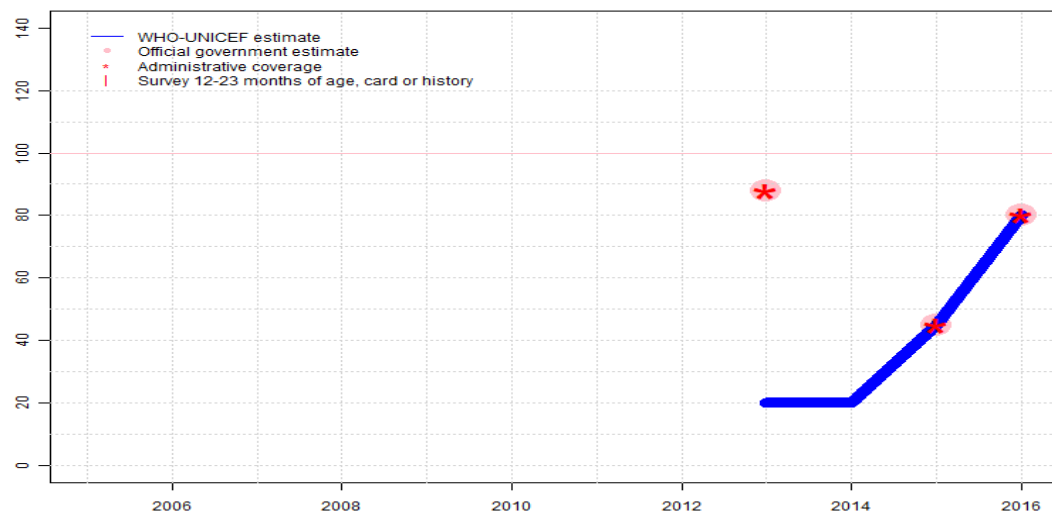
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on interpolation between reported values. National immunization schedule included pediatric monovalent HepB vaccine in addition to DTP-HepB-Hib. GoC=No accepted empirical data
- 2013: Estimate based on reported administrative estimate. GoC=R+ D+
- 2012: Estimate based on reported administrative estimate. GoC=R+ D+
- 2011: Estimate based on reported administrative estimate. Hepatitis B vaccine introduced in all states from 2011. HepB vaccine was introduced in Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, West Bengal from 2007-2008. GoC=R+ D+
- 2010: Estimate based on reported administrative estimate. GoC=R+ D+
- 2009: Estimate based on reported administrative estimate. GoC=R+ D+
- 2008: Estimate based on reported administrative estimate. India 2009 Coverage Evaluation Survey results ignored by working group. Population sample for HepB is not nationally representative. It represents 10 states and 3 union territories. GoC=R+ D+
- 2007: Sixty-nine percent coverage reached in 7 percent of the national target population. GoC=No accepted empirical data
- 2006: Seventy-two percent coverage reached in 8 percent of the national target population. GoC=No accepted empirical data
- 2005: Seventy-eight percent coverage reached in 2.3 million children. GoC=No accepted empirical data

# India - Hib3

IND - Hib3



## Description:

- 2016: Estimate based on coverage reported by national government. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Estimate is based on reported data following introduction. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate reflects annualized coverage using the reported number of children vaccinated and the reported target population for third dose of DTP containing vaccine. GoC=No accepted empirical data
- 2013: Estimate reflects annualized coverage using the reported number of children vaccinated and the reported target population for third dose of DTP containing vaccine. Eighty-eight percent coverage achieved in 23 percent of the national target population. Hib vaccine introduced subnationally in two states during 2011 and in eight states during 2013. Reporting began in 2013. 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	20	20	45	80
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	•	•	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	88	NA	45	80
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	88	NA	45	80
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

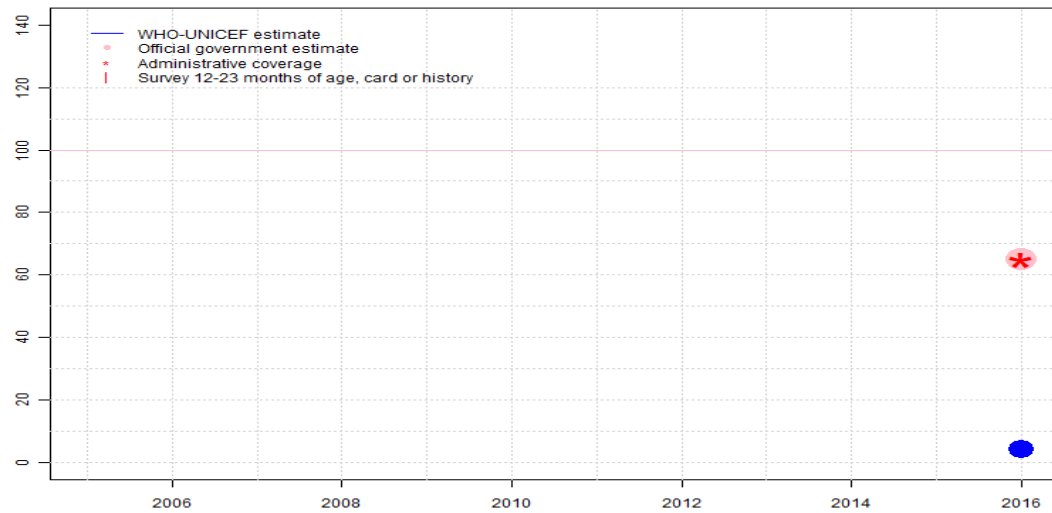
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

# India - RotaC

IND - RotaC



## Description:

2016: Rotavirus vaccine was introduced during 2016 through a phased approach in four states. Programme reports 65 percent coverage achieved in six percent of the national target population. Estimate is based on annualized coverage achieved in the national target population. The reporting cycle for the Government of India is from April 1 through March 31. Reported data for April-December 2015 are provisional. Estimate challenged by: R-

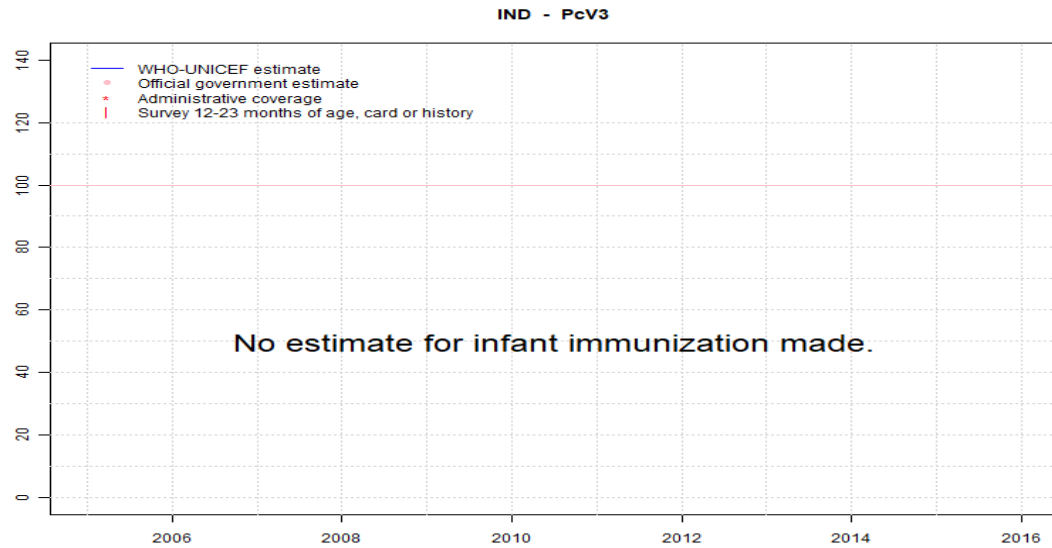
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	65
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	65
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

# India - 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.



# India - survey details

## 2012 Rapid Survey on Children, 2013-2014

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	91	12-23 m	17311	84
DTP3	Card or History	75	12-23 m	17311	84
MCV1	Card or History	79	12-23 m	17311	84

DTP3	Card or History	68	12-23 m	22888	71
MCV1	Card or History	71	12-23 m	22888	71
Pol1	Card or History	82	12-23 m	22888	71
Pol3	Card or History	68	12-23 m	22888	71

## 2005 India National Family Health Survey (NFHS-3) 2005-2006

### 2008 India 2009 Coverage Evaluation Survey

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87	12-23 m	22604	52
DTP1	Card or History	83	12-23 m	22604	52
DTP3	Card or History	72	12-23 m	22604	52
HepB1	Card or History	71	12-23 m	22604	52
HepB3	Card or History	59	12-23 m	22604	52
MCV1	Card or History	74	12-23 m	22604	52
Pol3	Card or History	70	12-23 m	22604	52

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	76	12-23 m	10419	38
BCG	Card	97	12-23 m	10419	38
BCG	Card or History	78	12-23 m	10419	38
BCG	History	67	12-23 m	10419	38
DTP1	C or H <12 months	73	12-23 m	10419	38
DTP1	Card	98	12-23 m	10419	38
DTP1	Card or History	76	12-23 m	10419	38
DTP1	History	62	12-23 m	10419	38
DTP3	C or H <12 months	52	12-23 m	10419	38
DTP3	Card	87	12-23 m	10419	38
DTP3	Card or History	55	12-23 m	10419	38
DTP3	History	36	12-23 m	10419	38
MCV1	C or H <12 months	48	12-23 m	10419	38
MCV1	Card	81	12-23 m	10419	38
MCV1	Card or History	59	12-23 m	10419	38
MCV1	History	45	12-23 m	10419	38
Pol1	C or H <12 months	89	12-23 m	10419	38
Pol1	Card	98	12-23 m	10419	38
Pol1	Card or History	93	12-23 m	10419	38
Pol1	History	90	12-23 m	10419	38
Pol3	C or H <12 months	73	12-23 m	10419	38
Pol3	Card	87	12-23 m	10419	38
Pol3	Card or History	78	12-23 m	10419	38
Pol3	History	73	12-23 m	10419	38

### 2007 India District-Level Household and Facility Survey 2007-2008 (DHLS-3)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87	12-23 m	65628	43
DTP1	Card or History	82	12-23 m	65628	43
DTP3	Card or History	63	12-23 m	65628	43
MCV1	Card or History	69	12-23 m	65628	43
Pol1	Card or History	93	12-23 m	65628	43
Pol3	Card or History	66	12-23 m	65628	43

### 2006 India Coverage Evaluation Survey 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87	12-23 m	22888	71
DTP1	Card or History	83	12-23 m	22888	71

### 2004 India Coverage Evaluation Survey 2005

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	83	12-23 m	15676	71

# India - survey details

DTP1	Card or History	80	12-23 m	15676	71
DTP3	Card or History	67	12-23 m	15676	71
MCV1	Card or History	68	12-23 m	15676	71
Pol1	Card or History	79	12-23 m	15676	71
Pol3	Card or History	61	12-23 m	15676	71

## 2002 Reproductive and Child Health (District Level Household Survey 2002-2004) - India

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	75	12-23 m	62505	31
DTP1	Card or History	73	12-23 m	62505	31
DTP3	Card or History	58	12-23 m	62505	31
MCV1	Card or History	56	12-23 m	62505	31
Pol3	Card or History	57	12-23 m	62505	31

## 2001 Routine Immunization and Maternal Care, CES, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	74	12-23 m	-	54
DTP1	C or H <12 months	71	12-23 m	-	54
DTP3	C or H <12 months	64	12-23 m	-	54
MCV1	C or H <12 months	61	12-23 m	-	54
Pol3	C or H <12 months	68	12-23 m	-	54

## 2000 Routine Immunization and Maternal Care, CES, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	73	12-23 m	-	57
DTP1	C or H <12 months	71	12-23 m	-	57
DTP3	C or H <12 months	64	12-23 m	-	57
MCV1	C or H <12 months	56	12-23 m	-	57
Pol3	C or H <12 months	70	12-23 m	-	57

## 1999 India, Multiple Indicator Cluster Survey India (MICS-II) 2000

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	68	12-23 m	-	-
DTP1	Card or History	64	12-23 m	-	-
DTP3	Card or History	47	12-23 m	-	-
MCV1	Card or History	50	12-23 m	-	-
Pol1	Card or History	70	12-23 m	-	-
Pol3	Card or History	59	12-23 m	-	-

## 1997 Evaluation of Routine Immunization 1998-99

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	72	12-23 m	7855	48
DTP1	Card or History	73	12-23 m	7855	48
DTP3	Card or History	69	12-23 m	7855	48
MCV1	Card or History	55	12-23 m	7855	48
Pol1	Card or History	73	12-23 m	7855	48
Pol3	Card or History	69	12-23 m	7855	48

## 1997 National Family Health Survey, India 1998-99

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	69	12-23 m	10076	34
BCG	Card	95	12-23 m	3393	34
BCG	Card or History	72	12-23 m	10076	34
BCG	History	60	12-23 m	6684	34
DTP1	C or H <12 months	69	12-23 m	10076	34
DTP1	Card	99	12-23 m	3393	34
DTP1	Card or History	71	12-23 m	10076	34
DTP1	History	58	12-23 m	6684	34
DTP3	C or H <12 months	52	12-23 m	10076	34
DTP3	Card	86	12-23 m	3393	34
DTP3	Card or History	55	12-23 m	10076	34
DTP3	History	40	12-23 m	6684	34
MCV1	C or H <12 months	42	12-23 m	10076	34

## India - survey details

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MCV1	Card	73	12-23 m	3393	34	Pol1	History	76	12-23 m	6684	34
MCV1	Card or History	51	12-23 m	10076	34	Pol3	C or H <12 months	59	12-23 m	10076	34
MCV1	History	39	12-23 m	6684	34	Pol3	Card	85	12-23 m	3393	34
Pol1	C or H <12 months	80	12-23 m	10076	34	Pol3	Card or History	63	12-23 m	10076	34
Pol1	Card	98	12-23 m	3393	34	Pol3	History	51	12-23 m	6684	34
Pol1	Card or History	84	12-23 m	10076	34						

Further information and estimates for previous years are available at:

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

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