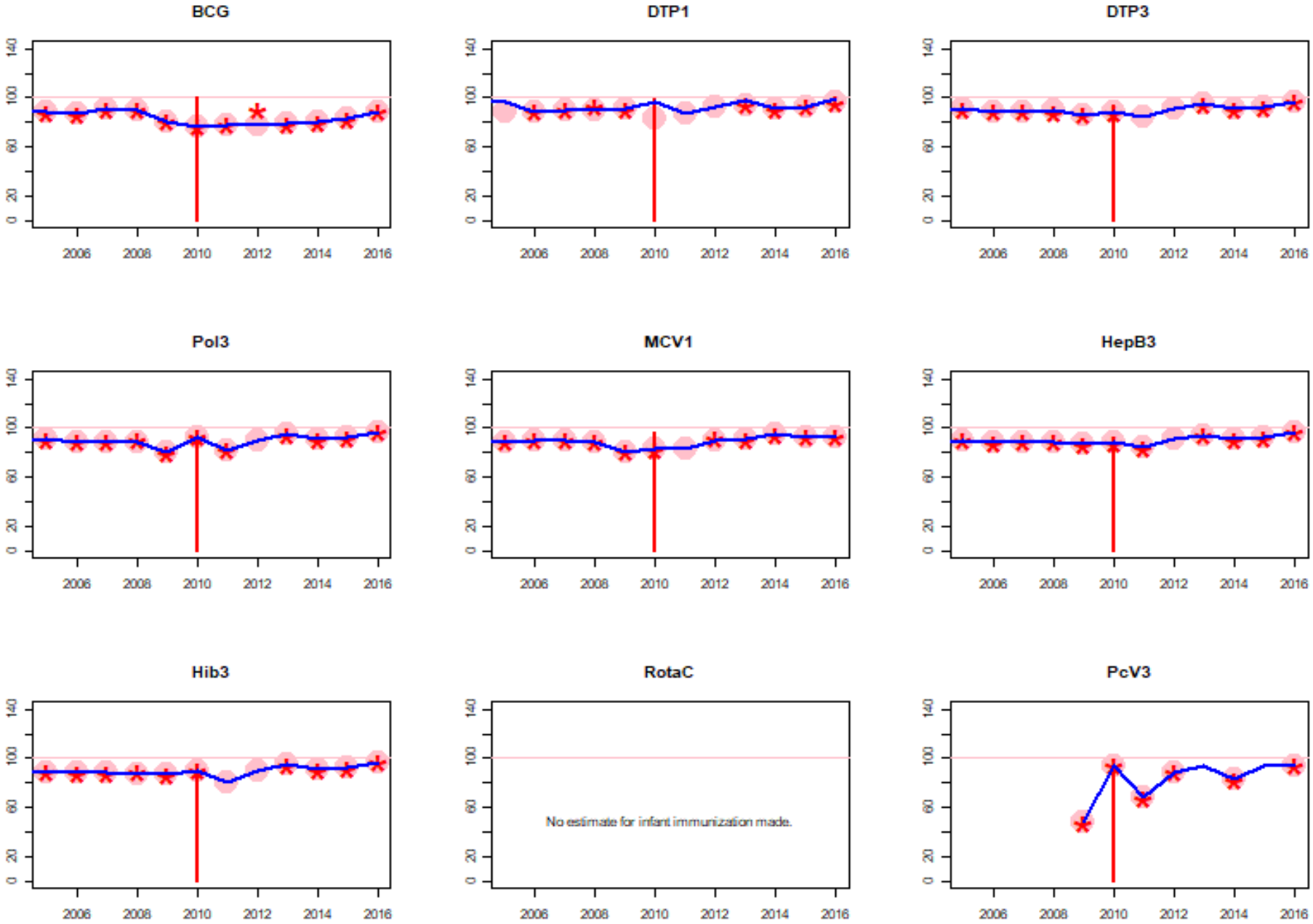
BCG
DTP1
DTP3
Pol3
MCV1
HepB3
Hib3
RotaC
No estimate for infant immunization made.
PcV3
0
20
60
100
140
2006
2008
2010
2012
2014
2016

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

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

*Burton et al. 2009. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.
*Burton et al. 2012. A formal representation of the WHO and UNICEF estimates of national immunization coverage: a computational logic approach.
*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around the WHO and UNICEF estimates of national immunization coverage.

DATA SOURCES.

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

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

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

ABBREVIATIONS

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

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

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

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

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

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

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

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

HepBB: percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are producted 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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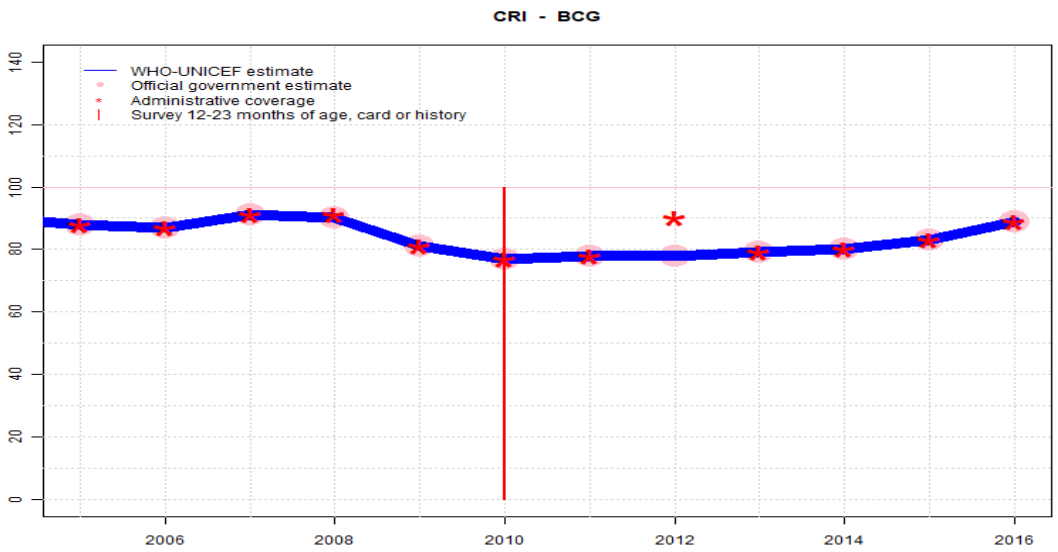
Costa Rica - BCG



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	88	87	91	90	81	77	78	78	79	80	83	89
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●	●●	●●	●●	●●
Official	88	87	91	90	81	77	78	78	79	80	83	89
Administrative	88	87	91	91	81	77	78	90	79	80	83	89
Survey	NA	NA	NA	NA	NA	100	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.

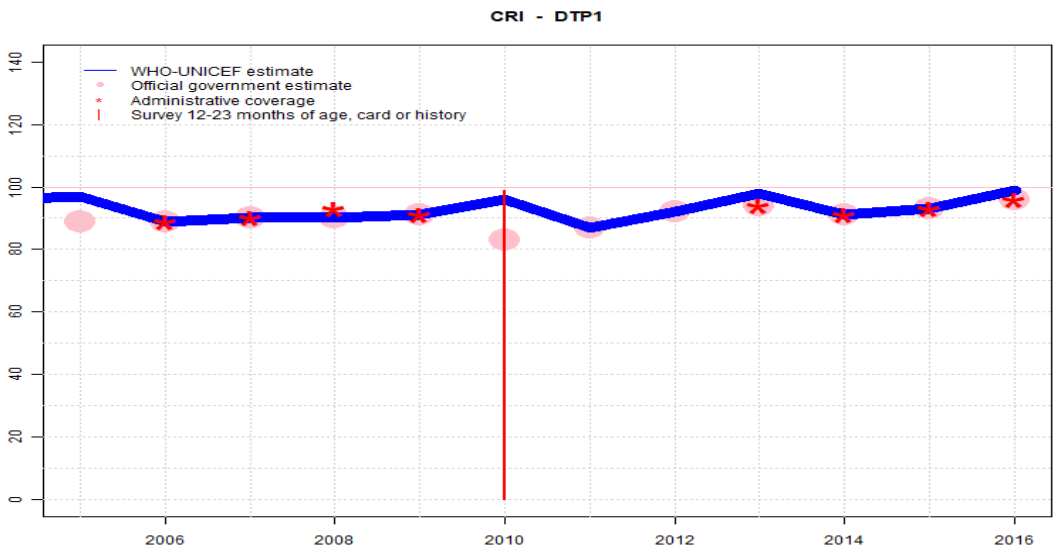
● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+
2015: Estimate based on coverage reported by national government. GoC=R+ D+
2014: Estimate based on coverage reported by national government. GoC=R+ D+
2013: Estimate based on coverage reported by national government. GoC=R+ 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. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported. GoC=R+ D+
2009: Estimate based on coverage reported by national government. Decline is due to change in BCG vaccination procedure in some hospitals (HIV testing required before vaccination) GoC=R+ D+
2008: Estimate based on coverage reported by national government. GoC=R+ D+
2007: Estimate based on coverage reported by national government. GoC=R+ D+
2006: Estimate based on coverage reported by national government. GoC=R+ D+
2005: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - DTP1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	97	89	90	90	91	96	87	92	98	91	93	99
Estimate GoC	•	••	••	••	••	•	••	••	•	••	••	•
Official	89	89	90	90	91	83	87	92	94	91	93	96
Administrative	NA	89	90	93	91	NA	NA	NA	94	91	93	96
Survey	NA	NA	NA	NA	NA	99	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.

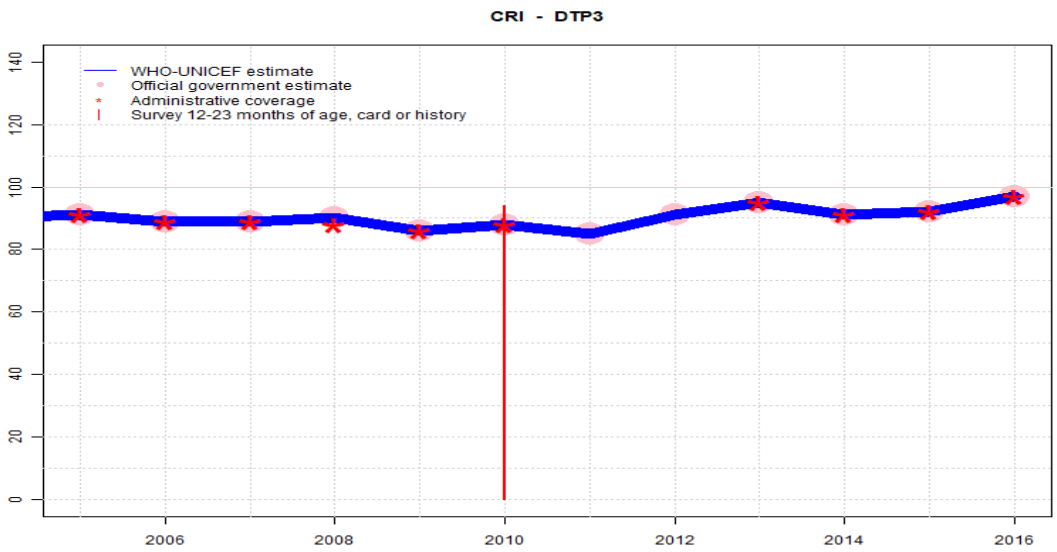
• There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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: DTP1 coverage estimated based on DTP3 coverage of 97. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. Estimate challenged by: R-
2015: Estimate based on coverage reported by national government. GoC=R+ D+
2014: Estimate based on coverage reported by national government. GoC=R+ D+
2013: DTP1 coverage estimated based on DTP3 coverage of 95. Estimate challenged by: R-
2012: Estimate based on coverage reported by national government. GoC=R+
2011: Estimate based on coverage reported by national government. GoC=R+
2010: DTP1 coverage estimated based on DTP3 coverage of 88. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported. Estimate challenged by: R-
2009: Estimate based on coverage reported by national government. GoC=R+ D+
2008: Estimate based on coverage reported by national government. GoC=R+ D+
2007: Estimate based on coverage reported by national government. GoC=R+ D+
2006: Estimate based on coverage reported by national government. GoC=R+ D+
2005: DTP1 coverage estimated based on DTP3 coverage of 91. Estimate challenged by: R-

Costa Rica - DTP3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	91	89	89	90	86	88	85	91	95	91	92	97
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	91	89	89	90	86	88	85	91	95	91	92	97
Administrative	91	89	89	88	86	88	NA	NA	95	91	92	97
Survey	NA	NA	NA	NA	NA	94	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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+

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

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on coverage reported by national government. GoC=R+ D+

2012: Estimate based on coverage reported by national government. GoC=R+

2011: Estimate based on coverage reported by national government. GoC=R+

2010: Estimate based on coverage reported by national government. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported.Costa Rica Multiple Indicator Cluster Survey 2011 card or history results of 94 percent modifed for recall bias to 99 percent based on 1st dose card or history coverage of 99 percent, 1st dose card only coverage of 92 percent and 3d dose card only coverage of 92 percent. GoC=R+ D+

2009: Estimate based on coverage reported by national government. GoC=R+ D+

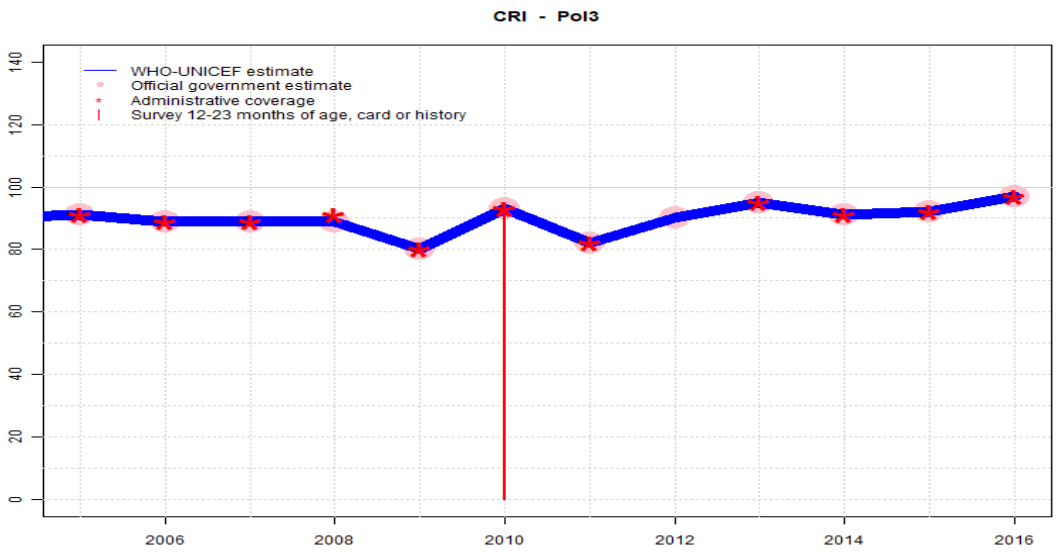
2008: Estimate based on coverage reported by national government. GoC=R+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ D+

2006: Estimate based on coverage reported by national government. GoC=R+ D+

2005: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - Pol3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	91	89	89	89	80	93	82	90	95	91	92	97
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	91	89	89	89	80	93	82	90	95	91	92	97
Administrative	91	89	89	91	80	93	82	NA	95	91	92	97
Survey	NA	NA	NA	NA	NA	95	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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+

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

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on coverage reported by national government. GoC=R+ D+

2012: Estimate based on coverage reported by national government. GoC=R+

2011: Estimate based on coverage reported by national government. Decline in coverage is consistent with patterns in coverage for other antigens. GoC=R+ D+

2010: Estimate based on coverage reported by national government. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported.Costa Rica Multiple Indicator Cluster Survey 2011 card or history results of 95 percent modifed for recall bias to 97 percent based on 1st dose card or history coverage of 100 percent, 1st dose card only coverage of 94 percent and 3d dose card only coverage of 91 percent. Increase in coverage most likely a return to 2008 pre-stockout levels. GoC=R+ D+

2009: Estimate based on coverage reported by national government. Vaccine stock out for 3-6 months GoC=R+ D+

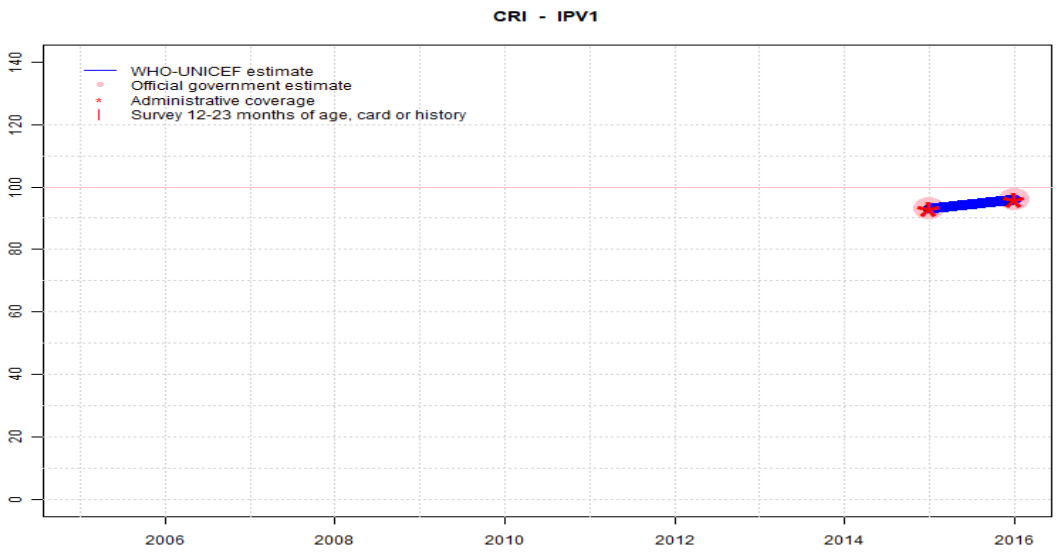
2008: Estimate based on coverage reported by national government. GoC=R+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ D+

2006: Estimate based on coverage reported by national government. GoC=R+ D+

2005: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - IPV1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93	96
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93	96
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93	96
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.

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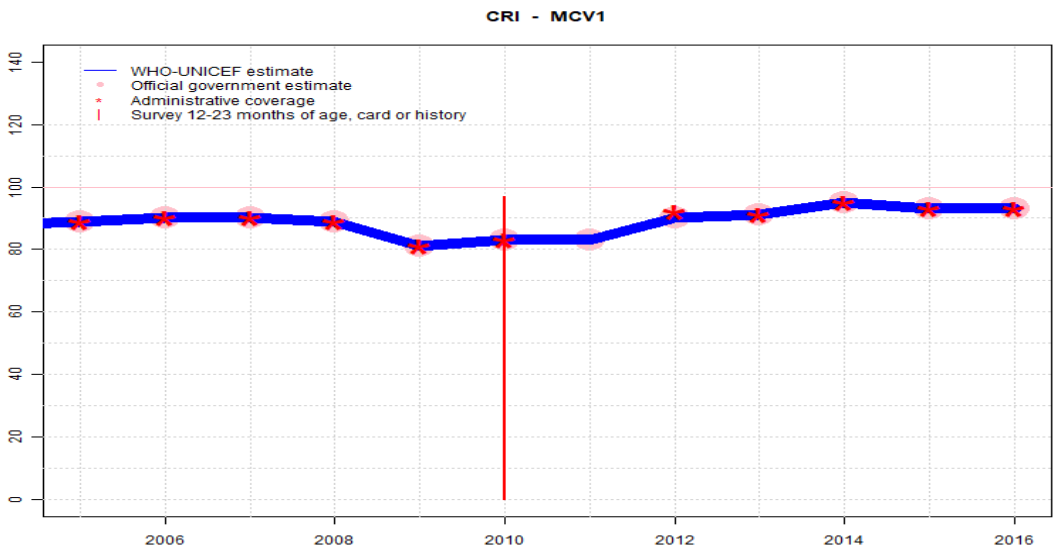
Description:

2016: Estimate based on coverage reported by national government. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+

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

Costa Rica - MCV1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	89	90	90	89	81	83	83	90	91	95	93	93
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	89	90	90	89	81	83	83	90	91	95	93	93
Administrative	89	90	90	89	81	83	NA	92	91	95	93	93
Survey	NA	NA	NA	NA	NA	97	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.

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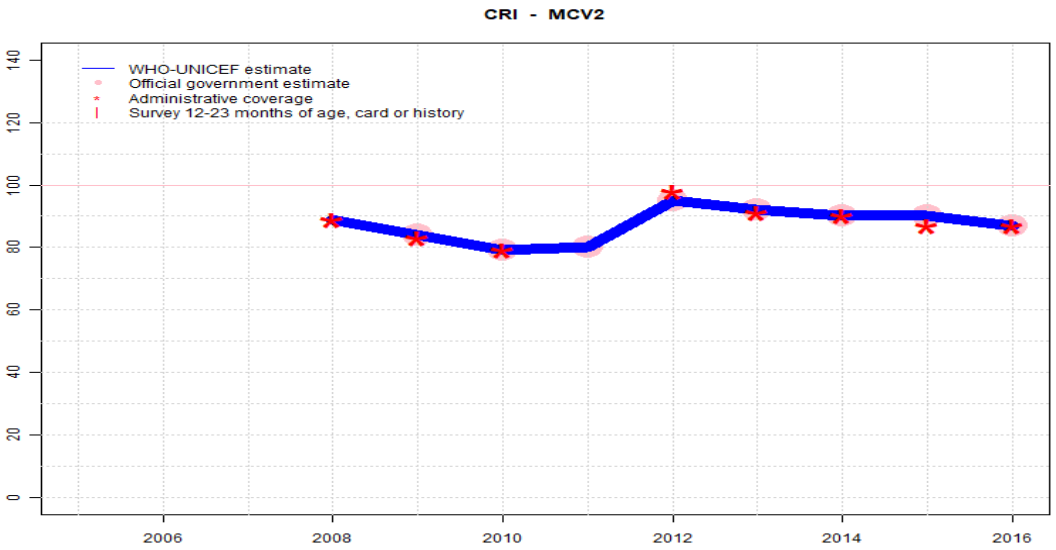
Description:

2016: Estimate based on coverage reported by national government. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+
2015: Estimate based on coverage reported by national government. GoC=R+ D+
2014: Estimate based on coverage reported by national government. GoC=R+ D+
2013: Estimate based on coverage reported by national government. GoC=R+ D+
2012: Estimate based on coverage reported by national government. GoC=R+ D+
2011: Estimate based on coverage reported by national government. GoC=R+
2010: Estimate based on coverage reported by national government. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported. GoC=R+ D+
2009: Estimate based on coverage reported by national government. GoC=R+ D+
2008: Estimate based on coverage reported by national government. GoC=R+ D+
2007: Estimate based on coverage reported by national government. GoC=R+ D+
2006: Estimate based on coverage reported by national government. GoC=R+ D+
2005: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - MCV2



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	89	84	79	80	95	92	90	90	87
Estimate GoC	NA	NA	NA	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	84	79	80	95	92	90	90	87
Administrative	NA	NA	NA	89	83	79	NA	98	91	90	87	87
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.

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

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

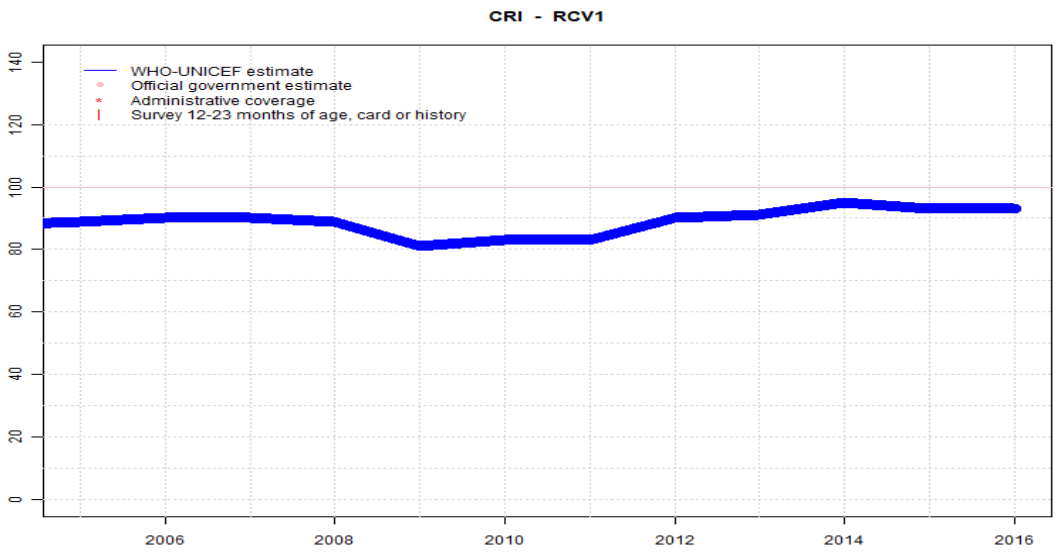
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

2016: Estimate based on coverage reported by national government. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+
2015: Estimate based on coverage reported by national government. GoC=R+ D+
2014: Estimate based on coverage reported by national government. GoC=R+ D+
2013: Estimate based on coverage reported by national government. GoC=R+ D+
2012: Estimate based on coverage reported by national government. GoC=R+ D+
2011: Estimate based on coverage reported by national government. GoC=R+
2010: Estimate based on coverage reported by national government. GoC=R+ D+
2009: Estimate based on coverage reported by national government. GoC=R+ D+
2008: Estimate based on reported administrative estimate. GoC=R+ D+

Costa Rica - RCV1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	89	90	90	89	81	83	83	90	91	95	93	93
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

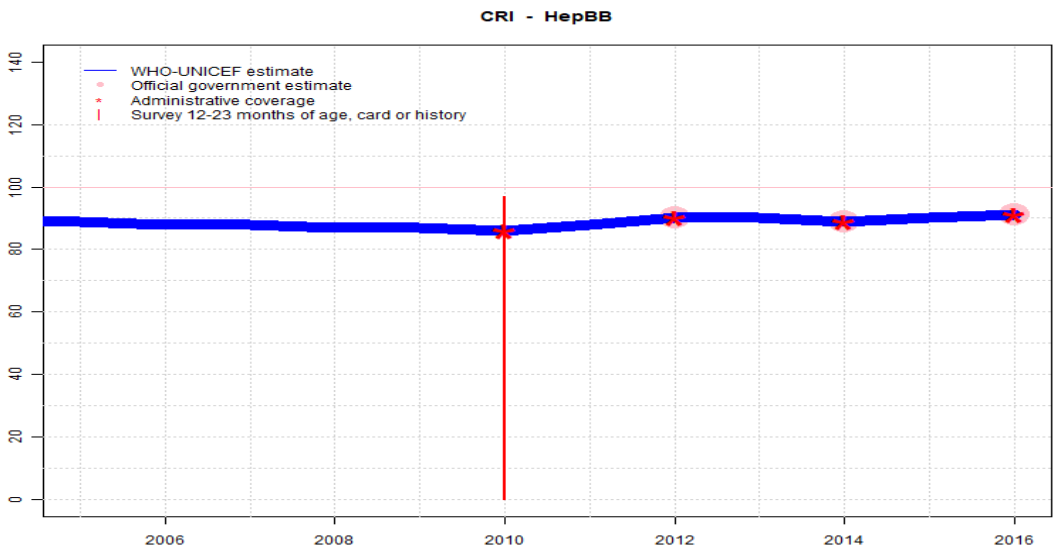
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+
2015: Estimate based on estimated MCV1. GoC=R+ D+
2014: Estimate based on estimated MCV1. GoC=R+ D+
2013: Estimate based on estimated MCV1. GoC=R+ D+
2012: Estimate based on estimated MCV1. GoC=R+ D+
2011: Estimate based on estimated MCV1. GoC=R+
2010: Estimate based on estimated MCV1. GoC=R+ D+
2009: Estimate based on estimated MCV1. GoC=R+ D+
2008: Estimate based on estimated MCV1. GoC=R+ D+
2007: Estimate based on estimated MCV1. GoC=R+ D+
2006: Estimate based on estimated MCV1. GoC=R+ D+
2005: Estimate based on estimated MCV1. GoC=R+ D+

Costa Rica - HepBB



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	89	88	88	87	87	86	88	90	90	89	90	91
Estimate GoC	•	•	•	•	•	••	•	••	•	••	•	••
Official	NA	NA	NA	NA	NA	NA	NA	90	NA	89	NA	91
Administrative	NA	NA	NA	NA	NA	86	NA	90	NA	89	NA	91
Survey	NA	NA	NA	NA	NA	97	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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+

2015: Estimate based on interpolation between reported values. Estimate of 90 percent changed from previous revision value of 89 percent. GoC=No accepted empirical data

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on interpolation between reported values. GoC=No accepted empirical data

2012: Estimate based on coverage reported by national government. GoC=R+ D+

2011: Estimate based on interpolation between reported values. GoC=No accepted empirical data

2010: Estimate based on reported administrative estimate. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported. GoC=R+ D+

2009: Estimate based on interpolation between reported values. GoC=No accepted empirical data

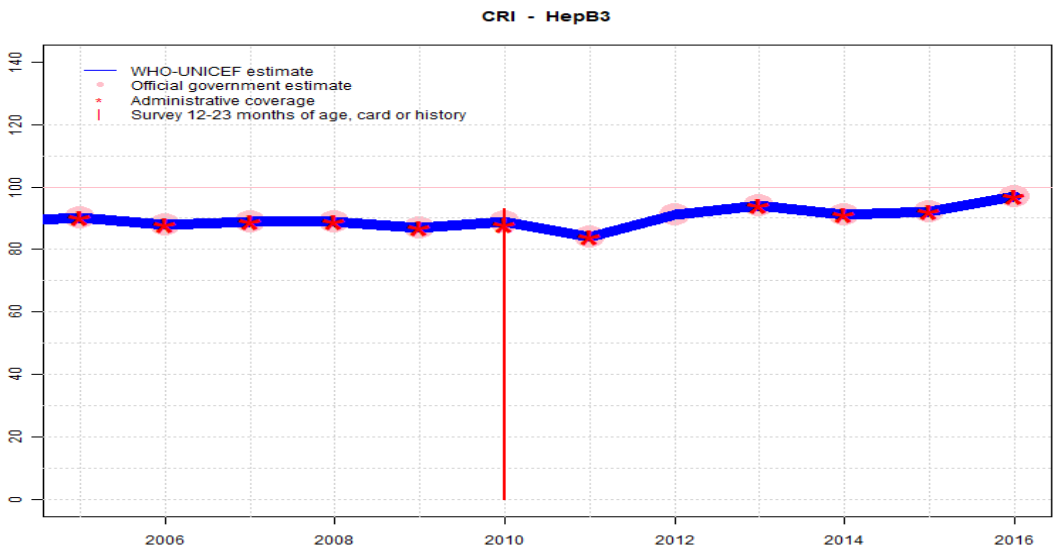
2008: Estimate based on interpolation between reported values. GoC=No accepted empirical data

2007: Estimate based on interpolation between reported values. GoC=No accepted empirical data

2006: Estimate based on interpolation between reported values. GoC=No accepted empirical data

2005: Estimate based on interpolation between reported values. GoC=No accepted empirical data

Costa Rica - HepB3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	90	88	89	89	87	89	84	91	94	91	92	97
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	90	88	89	89	87	89	84	91	94	91	92	97
Administrative	90	88	89	89	87	88	84	NA	94	91	92	97
Survey	NA	NA	NA	NA	NA	93	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.

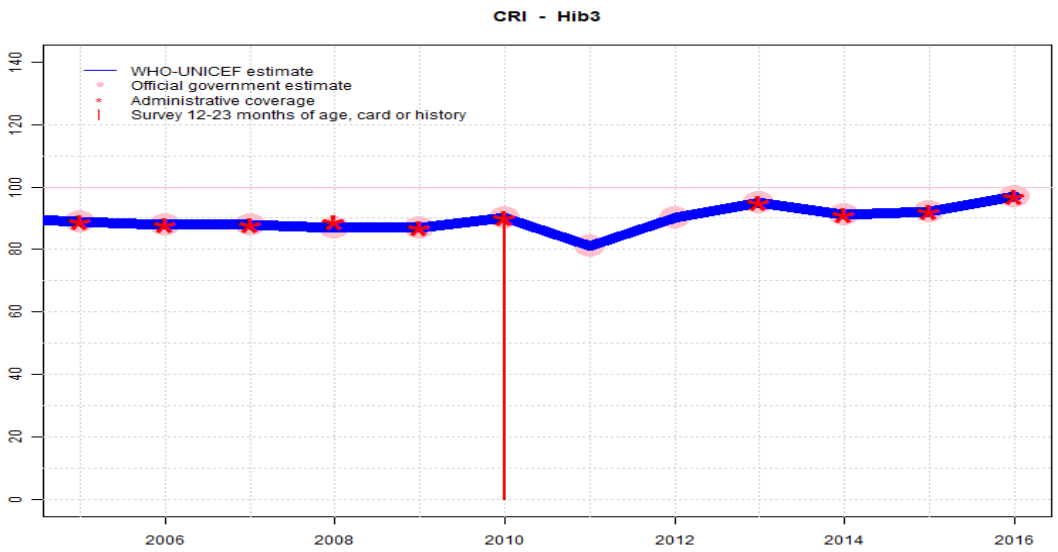
● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+
2015: Estimate based on coverage reported by national government. GoC=R+ D+
2014: Estimate based on coverage reported by national government. GoC=R+ D+
2013: Estimate based on coverage reported by national government. GoC=R+ D+
2012: Estimate based on coverage reported by national government. GoC=R+
2011: Estimate based on coverage reported by national government. GoC=R+ D+
2010: Estimate based on coverage reported by national government. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported. GoC=R+ D+
2009: Estimate based on coverage reported by national government. GoC=R+ D+
2008: Estimate based on coverage reported by national government. GoC=R+ D+
2007: Estimate based on coverage reported by national government. GoC=R+ D+
2006: Estimate based on coverage reported by national government. GoC=R+ D+
2005: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - Hib3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	89	88	88	87	87	90	81	90	95	91	92	97
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	89	88	88	87	87	90	81	90	95	91	92	97
Administrative	89	88	88	89	87	90	NA	NA	95	91	92	97
Survey	NA	NA	NA	NA	NA	92	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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+

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

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on coverage reported by national government. GoC=R+ D+

2012: Estimate based on coverage reported by national government. GoC=R+

2011: Estimate based on coverage reported by national government. Decline in coverage is consistent with patterns in coverage for other antigens. GoC=R+

2010: Estimate based on coverage reported by national government. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported.Costa Rica Multiple Indicator Cluster Survey 2011 card or history results of 92 percent modifed for recall bias to 94 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 94 percent and 3d dose card only coverage of 91 percent. GoC=R+ D+

2009: Estimate based on coverage reported by national government. GoC=R+ D+

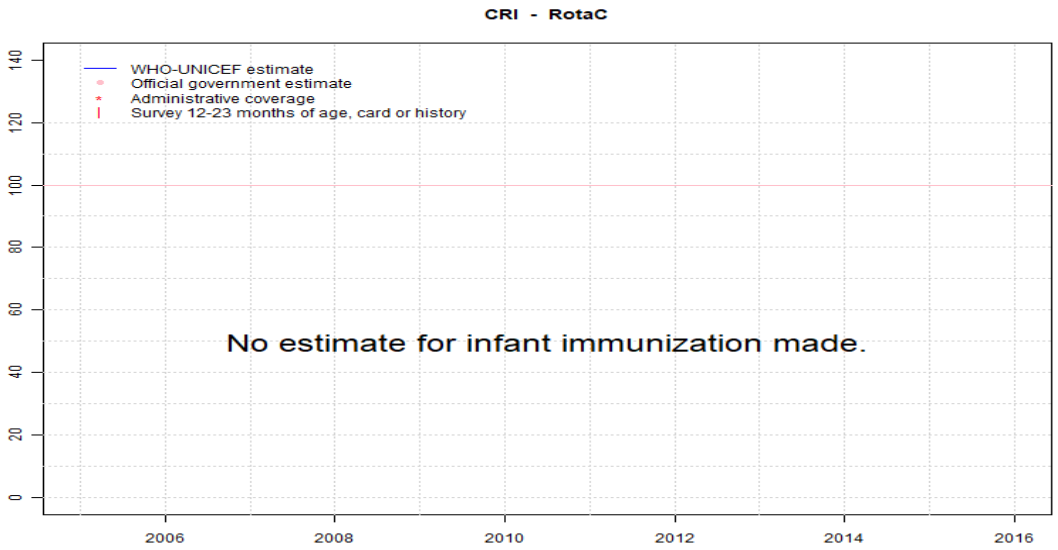
2008: Estimate based on coverage reported by national government. GoC=R+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ D+

2006: Estimate based on coverage reported by national government. GoC=R+ D+

2005: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - 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.

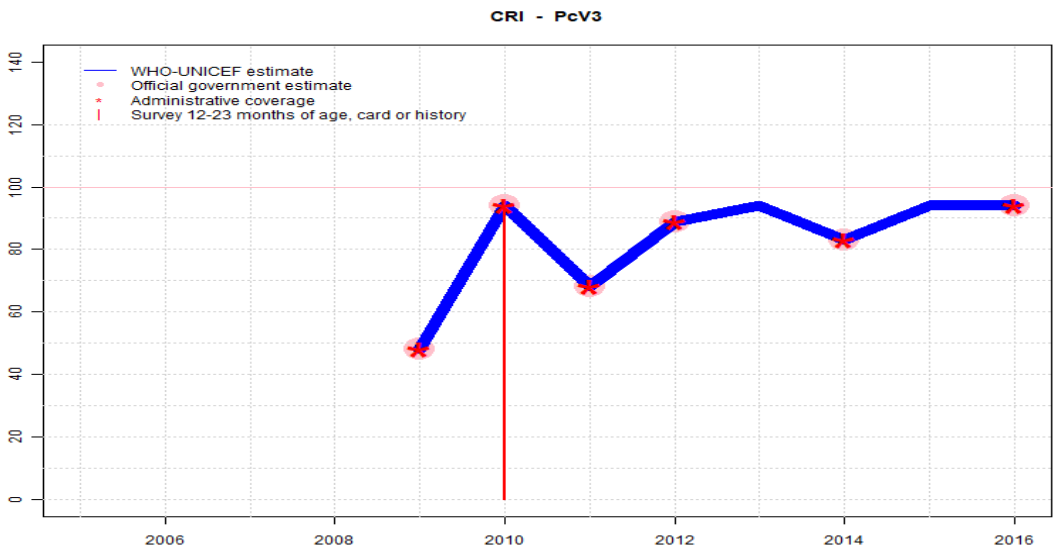
●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

Costa Rica - PcV3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	48	94	68	89	94	83	94	94
Estimate GoC	NA	NA	NA	NA	●●	●●	●●	●●	●	●●	●	●●
Official	NA	NA	NA	NA	48	94	68	89	NA	83	NA	94
Administrative	NA	NA	NA	NA	48	94	68	89	NA	83	NA	94
Survey	NA	NA	NA	NA	NA	93	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. WHO and UNICEF are aware of a planned Multiple Indicator Cluster Survey during 2018 and await the final results. GoC=R+ D+

2015: The WHO and UNICEF estimate is based on the reported second dose of PcV. GoC=No accepted empirical data

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Presentation changed from a 3+1 (2,4,6 months and 15 months of age) dose, 7 valent presentation to a 2+1 (2,4 months and 15 months of age) dose, 13 valent presentation in 2012. The WHO and UNICEF estimate is based on the reported second dose of PcV. GoC=No accepted empirical data

2012: Estimate based on coverage reported by national government. GoC=R+ D+

2011: Estimate based on coverage reported by national government. Vaccine stock-out for 1 month. GoC=R+

2010: Estimate based on coverage reported by national government. Costa Rica Multiple Indicator Cluster Survey 2011 results ignored by working group. Survey results suggest national estimates may be conservative and actual coverage may be higher than reported.Costa Rica Multiple Indicator Cluster Survey 2011 card or history results of 93 percent modifed for recall bias to 96 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 91 percent and 3d dose card only coverage of 91 percent. . GoC=R+ D+

2009: Estimate based on coverage reported by national government. GoC=R+ D+

Costa Rica - survey details

2010 Costa Rica Encuesta de Indicadores Múltiples por Conglomerados 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	100	18-29 m	437	94
BCG	Card	93	18-29 m	-	94
BCG	Card or History	100	18-29 m	437	94
BCG	History	7	18-29 m	-	94
DTP1	C or H <12 months	96	18-29 m	437	94
DTP1	Card	92	18-29 m	-	94
DTP1	Card or History	99	18-29 m	437	94
DTP1	History	6	18-29 m	-	94
DTP3	C or H <12 months	92	18-29 m	437	94
DTP3	Card	92	18-29 m	-	94
DTP3	Card or History	94	18-29 m	437	94
DTP3	History	2	18-29 m	-	94
HepB1	C or H <12 months	97	18-29 m	437	94
HepB1	Card	96	18-29 m	-	94
HepB1	Card or History	98	18-29 m	437	94
HepB1	History	3	18-29 m	-	94
HepB3	C or H <12 months	89	18-29 m	437	94
HepB3	Card	91	18-29 m	-	94
HepB3	Card or History	93	18-29 m	437	94
HepB3	History	2	18-29 m	-	94
HepBB	C or H <12 months	97	18-29 m	437	94
HepBB	Card	94	18-29 m	-	94
HepBB	Card or History	97	18-29 m	437	94
HepBB	History	3	18-29 m	-	94
Hib1	C or H <12 months	96	18-29 m	437	94
Hib1	Card	94	18-29 m	-	94
Hib1	Card or History	97	18-29 m	437	94
Hib1	History	4	18-29 m	-	94
Hib3	C or H <12 months	88	18-29 m	437	94
Hib3	Card	91	18-29 m	-	94
Hib3	Card or History	92	18-29 m	437	94
Hib3	History	2	18-29 m	-	94
MCV1	C or H <18 months	93	18-29 m	437	94
MCV1	Card	92	18-29 m	-	94
MCV1	Card or History	97	18-29 m	437	94
MCV1	History	6	18-29 m	-	94
PcV1	C or H <12 months	94	18-29 m	437	94
PcV1	Card	91	18-29 m	-	94
PcV1	Card or History	96	18-29 m	437	94
PcV1	History	5	18-29 m	-	94
PcV3	C or H <12 months	89	18-29 m	437	94
PcV3	Card	91	18-29 m	-	94
PcV3	Card or History	93	18-29 m	437	94
PcV3	History	2	18-29 m	-	94
Pol1	C or H <12 months	99	18-29 m	437	94
Pol1	Card	94	18-29 m	-	94
Pol1	Card or History	100	18-29 m	437	94
Pol1	History	6	18-29 m	-	94
Pol3	C or H <12 months	93	18-29 m	437	94
Pol3	Card	91	18-29 m	-	94
Pol3	Card or History	95	18-29 m	437	94
Pol3	History	4	18-29 m	-	94

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