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

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2018

data received as of July 3, 2017

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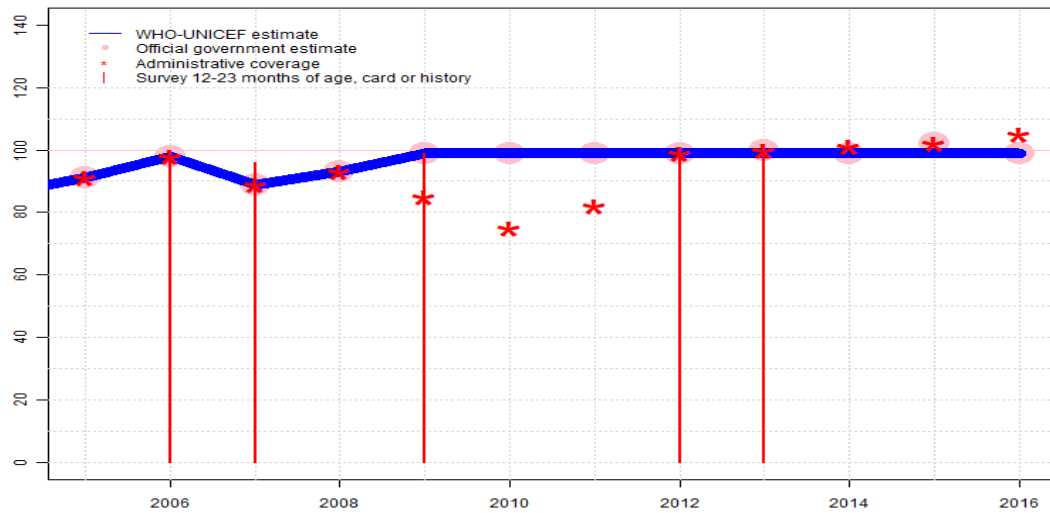
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect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

Rwanda - BCG

RWA - BCG

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	91	98	89	93	99	99	99	99	99	99	99	99
Estimate GoC	•••	•••	•••	•••	•••	•	•••	••	•••	•••	•••	••
Official	91	98	89	93	99	99	99	99	100	99	102	99
Administrative	91	98	89	93	85	75	82	99	100	101	102	105
Survey	NA	98	96	NA	99	NA	NA	99	99	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.
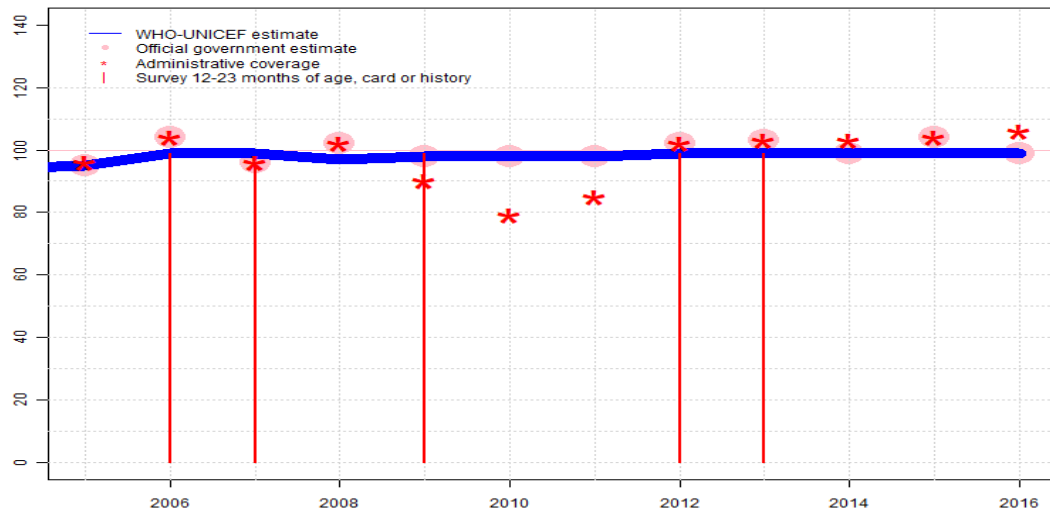
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2016: Estimate based on coverage reported by national government. The final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on interpolation between data reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ S+ D+

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

2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+ D+

2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

2011: Estimate based on coverage reported by national government. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

2010: Estimate based on coverage reported by national government. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 Estimate challenged by: D-

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

2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 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 98 percent based on 1 survey(s). GoC=R+ S+ D+

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

Rwanda - DTP1

RWA - DTP1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	95	99	99	97	98	98	98	99	99	99	99	99
Estimate GoC	•••	•	•	•••	•••	•	•••	••	•••	•••	•••	••
Official	95	104	96	102	98	98	98	102	103	99	104	99
Administrative	96	104	96	102	90	79	85	102	103	103	104	106
Survey	NA	99	95	NA	99	NA	NA	99	99	NA	NA	NA

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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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    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
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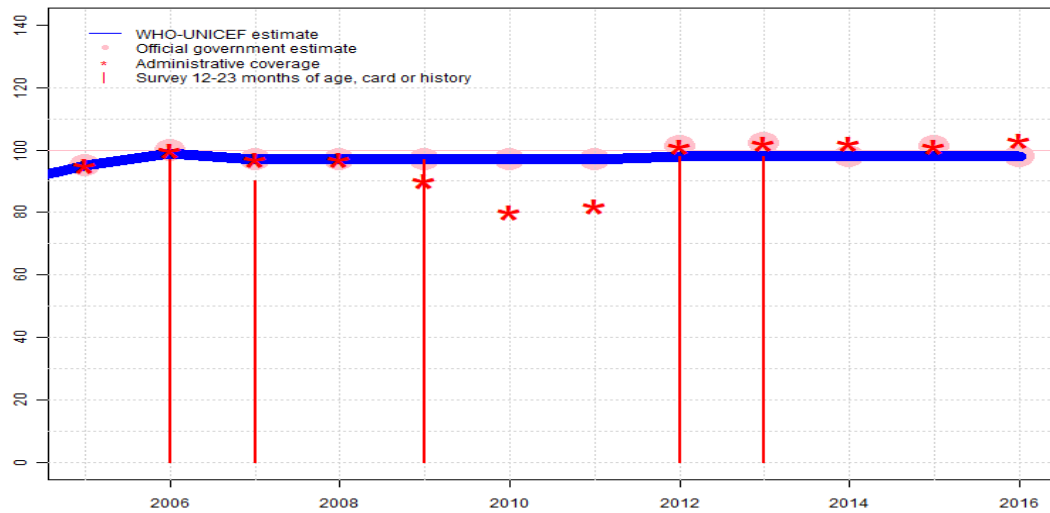
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2015: Estimate based on interpolation between data reported by national government. Reported data excluded because 104 percent greater than 100 percent. GoC=R+ S+ D+

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

2013: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). Reported data excluded because 103 percent greater than 100 percent. GoC=R+ S+ D+

2012: Estimate of 99 percent assigned by working group. Estimate is based on survey results. Reported data excluded because 102 percent greater than 100 percent. The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

2011: Estimate is based on reported data. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

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2008: Estimate based on interpolation between coverage reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ S+ D+

2007: DTP1 coverage estimated based on DTP3 coverage of 97. Estimate challenged by: R-

2006: DTP1 coverage estimated based on DTP3 coverage of 100. Reported data excluded because 104 percent greater than 100 percent. Estimate challenged by: R-

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

Rwanda - DTP3

RWA - DTP3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	95	99	97	97	97	97	97	98	98	98	98	98
Estimate GoC	•••	•••	•••	•••	•••	•••	•••	••	•••	•••	•••	••
Official	95	100	97	97	97	97	97	101	102	98	101	98
Administrative	95	100	97	97	90	80	82	101	102	102	101	103
Survey	NA	97	90	NA	97	NA	NA	98	98	NA	NA	NA

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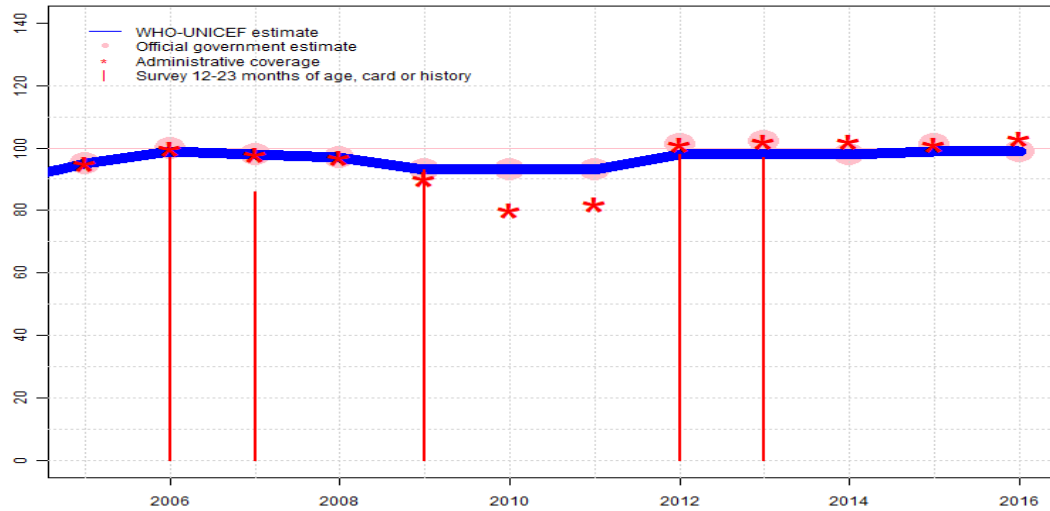
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2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Rwanda Interim Demographic and Health Survey 2007-08 card or history results of 90 percent modifed for recall bias to 94 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 66 percent. GoC=R+ S+ D+

2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). GoC=R+ S+ D+

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

RWA - Pol3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	95	99	98	97	93	93	93	98	98	98	99	99
Estimate GoC	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●	●	●●●	●●●	●●
Official	95	100	98	97	93	93	93	101	102	98	101	99
Administrative	95	100	98	97	90	80	82	101	102	102	101	103
Survey	NA	97	86	NA	93	NA	NA	98	97	NA	NA	NA

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2015: Estimate based on interpolation between data reported by national government. Reported data excluded because 101 percent greater than 100 percent. Estimate of 99 percent changed from previous revision value of 98 percent. GoC=R+ S+ D+

2014: Estimate is based on reported data. GoC=R+ S+ D+

2013: Estimate of 98 percent assigned by working group. Estimate is based on survey results. Rwanda Demographic and Health Survey 2014-15 card or history results of 97 percent modifed for recall bias to 98 percent based on 1st dose card or history coverage of 99 percent, 1st dose card only coverage of 94 percent and 3d dose card only coverage of 93 percent. Reported data excluded because 102 percent greater than 100 percent. Estimate challenged by: R-

2012: Estimate of 98 percent assigned by working group. Estimate is based on survey results. Reported data excluded because 101 percent greater than 100 percent. The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

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

2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Rwanda Interim Demographic and Health Survey 2007-08 card or history results of 86 percent modifed for recall bias to 95 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 66 percent. GoC=R+ S+ D+
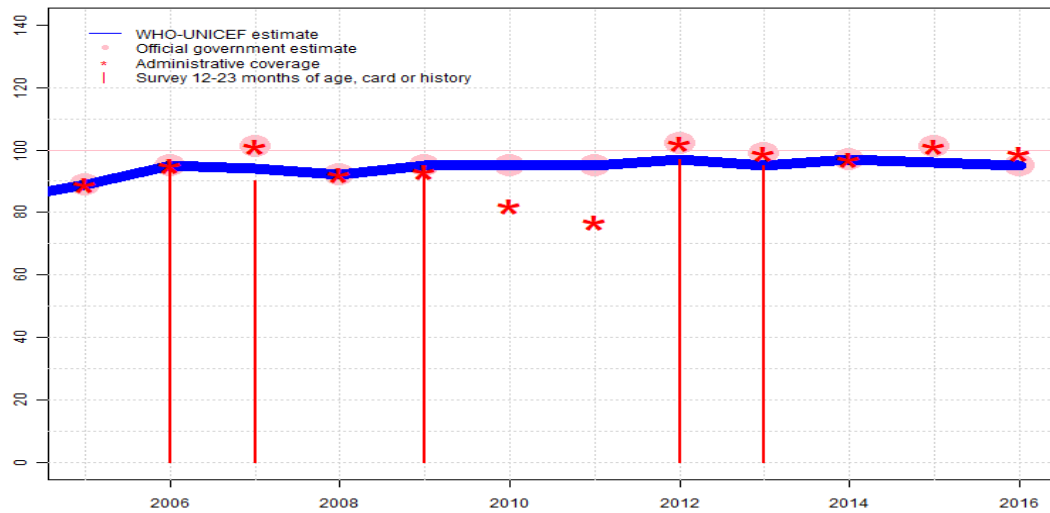
2006: Estimate based on coverage reported by national government supported by survey. Survey
        evidence of 97 percent based on 1 survey(s). GoC=R+ S+ D+
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Rwanda - MCV1

RWA - MCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	89	95	94	92	95	95	95	97	95	97	96	95
Estimate GoC	•••	•••	•••	•••	•••	•••	•••	••	•	•••	•••	••
Official	89	95	101	92	95	95	95	102	99	97	101	95
Administrative	89	95	101	92	93	82	77	102	99	97	101	99
Survey	NA	96	90	NA	95	NA	NA	97	95	NA	NA	NA

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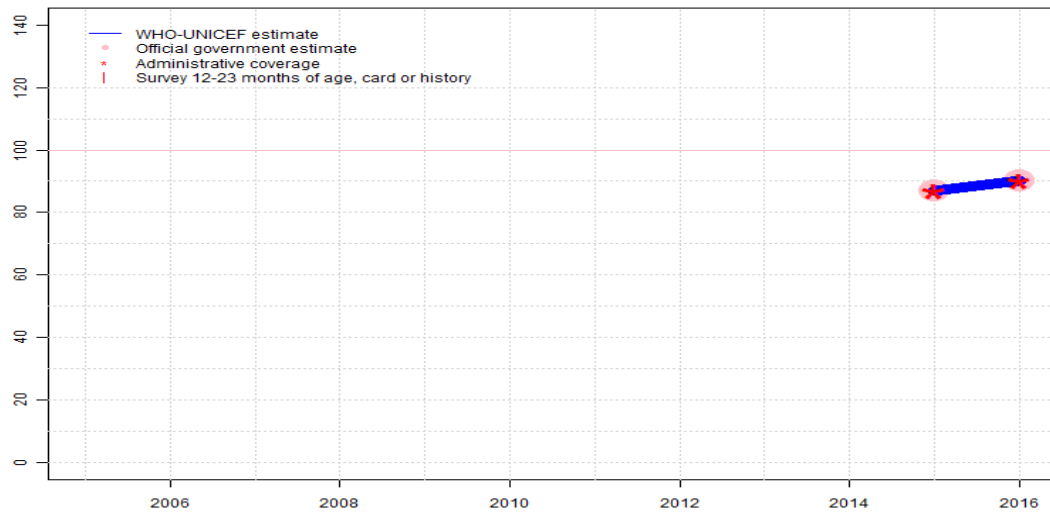of the objective for which they are being used.

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2014: Estimate is based on reported data. GoC=R+ S+ D+

2013: Estimate of 95 percent assigned by working group. Estimate is based on survey results. Reported data excluded. Reported coverage for all other antigens is 100 percent or greater thereby suggesting an underestimated target population size. Estimate challenged by: R-

2012: Estimate of 97 percent assigned by working group. Estimate is based on survey results. Reported data excluded because 102 percent greater than 100 percent. The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

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2007: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 90 percent based on 1 survey(s). Reported data excluded because 101 percent greater than 100 percent. GoC=R+ S+ D+

2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R+ S+ D+

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

RWA - MCV2

- WHO-UNICEF estimate
- Official government estimate
- * Administrative coverage
- | Survey 12-23 months of age, card or history

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 final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on coverage reported by national government. Second dose of MCV introduced during July 2014, reporting started in 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	87	90
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87	90
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87	90
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.

Rwanda - RCV1

RWA - RCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

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. The final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on estimated MCV1. Rubella containing vaccine introduced in July 2014 as measles-rubella combination vaccine. Coverage estimates starting in 2015 for a full birth cohort. Estimate of 96 percent changed from previous revision value of 97 percent. GoC=R+ S+ D+

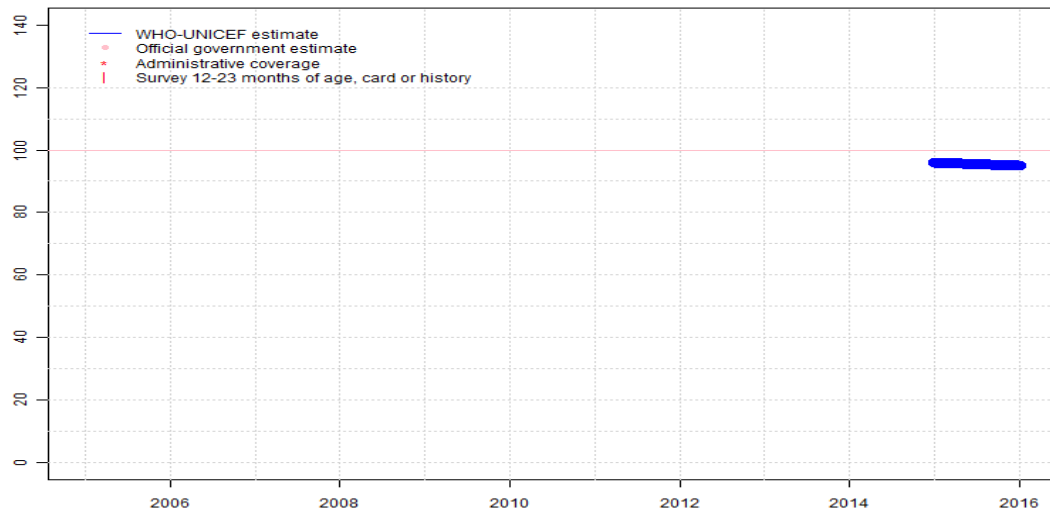|	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96	95
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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

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

RWA - HepBB

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

No estimate for infant immunization made.

Estimates of hepatitis B birth dose coverage are produced only for countries with a universal bith 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.

	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.

Rwanda - HepB3

RWA - HepB3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

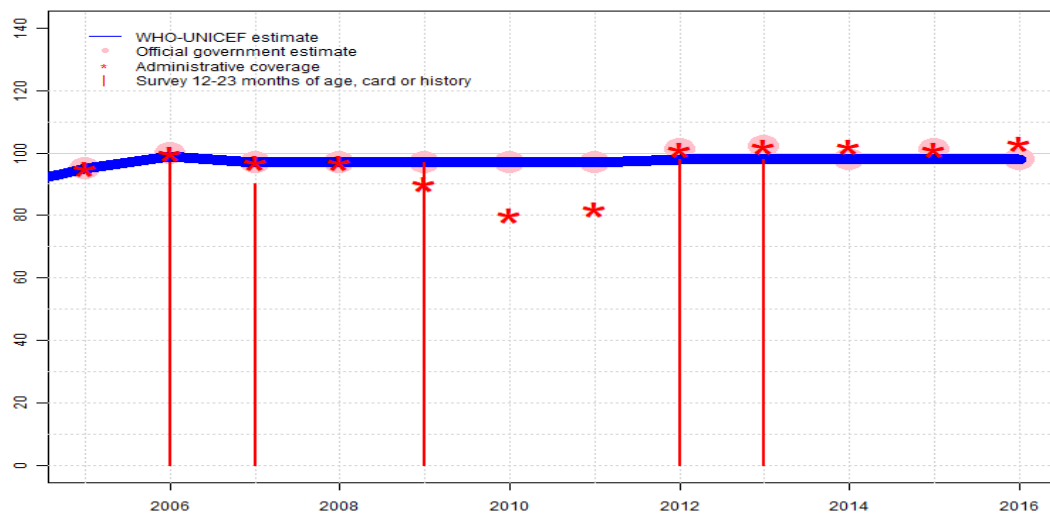|	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	95	99	97	97	97	97	97	98	98	98	98	98
Estimate GoC	•••	•••	•••	•••	•••	•••	•••	••	•••	•••	•••	••
Official	95	100	97	97	97	97	97	101	102	98	101	98
Administrative	95	100	97	97	90	80	82	101	102	102	101	103
Survey	NA	97	90	NA	97	NA	NA	98	98	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.
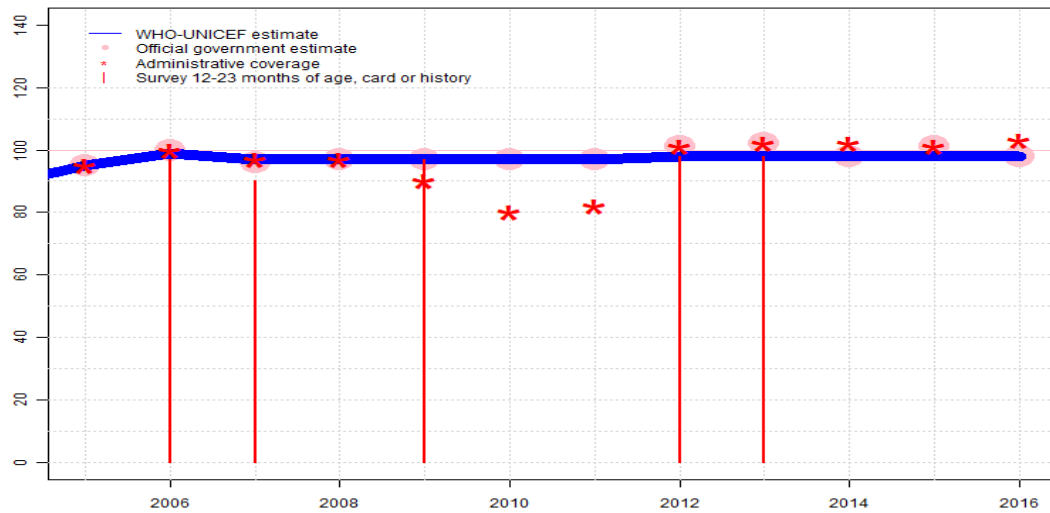
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2016: Estimate based on coverage reported by national government. The final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on interpolation between data reported by national government. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ S+ D+

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

2013: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Reported data excluded because 102 percent greater than 100 percent. GoC=R+ S+ D+

2012: Estimate of 98 percent assigned by working group. Estimate is based on survey results. Reported data excluded because 101 percent greater than 100 percent. The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

2011: Estimate is based on reported data. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

2010: Estimate based on coverage reported by national government. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Rwanda Demographic and Health Survey 2010 card or history results of 97 percent modifed for recall bias to 98 percent based on 1st dose card or history coverage of 99 percent, 1st dose card only coverage of 82 percent and 3d dose card only coverage of 81 percent. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

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

2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Rwanda Interim Demographic and Health Survey 2007-08 card or history results of 90 percent modifed for recall bias to 94 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 66 percent. GoC=R+ S+ D+

2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). GoC=R+ S+ D+

2005: Estimate based on reported data. GoC=R+ S+ D+

Rwanda - Hib3

RWA - Hib3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	95	99	97	97	97	97	97	98	98	98	98	98
Estimate GoC	●●●	●●●	●	●	●●●	●●●	●●●	●●	●●●	●●●	●●●	●●
Official	95	100	96	97	97	97	97	101	102	98	101	98
Administrative	95	100	97	97	90	80	82	101	102	102	101	103
Survey	NA	97	90	NA	97	NA	NA	98	98	NA	NA	NA

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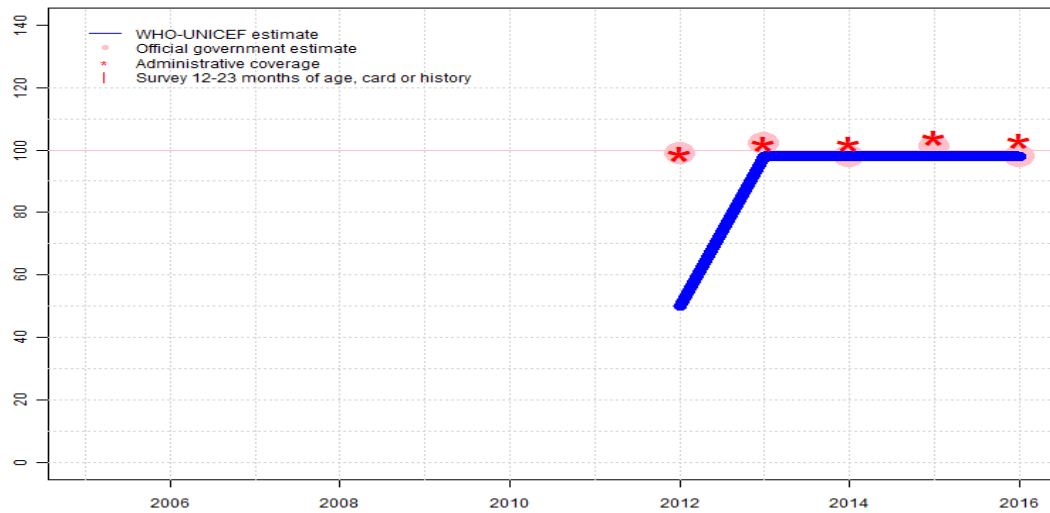
```
In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.
```

Description:

2016: Estimate based on coverage reported by national government. The final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on interpolation between data reported by national government. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ S+ D+

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

2013: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Reported data excluded because 102 percent greater than 100 percent. GoC=R+ S+ D+

2012: Estimate of 98 percent assigned by working group. Estimate is based on survey results. Reported data excluded because 101 percent greater than 100 percent. The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

2011: Estimate is based on reported data. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

2010: Estimate based on coverage reported by national government. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Rwanda Demographic and Health Survey 2010 card or history results of 97 percent modifed for recall bias to 98 percent based on 1st dose card or history coverage of 99 percent, 1st dose card only coverage of 82 percent and 3d dose card only coverage of 81 percent. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+ D+

2008: Reported data calibrated to 2007 and 2009 levels. Estimate challenged by: R-

2007: Estimate of 97 percent assigned by working group. Estimate is based on administrative coverage, consistent with reported DTP3 and HepB3 levels. Rwanda Interim Demographic and Health Survey 2007-08 card or history results of 90 percent modifed for recall bias to 94 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 66 percent. Estimate challenged by: R-

2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). GoC=R+ S+ D+

2005: Estimate based on reported data. GoC=R+ S+ D+

Rwanda - RotaC

RWA - RotaC

- —— WHO-UNICEF estimate
- Official government estimate
- * Administrative coverage
- I Survey 12-23 months of age, card or history

Description:

2016: Estimate based on coverage reported by national government. The final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on interpolation between reported values. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ D+

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

2013: Estimate based on extrapolation from data reported by national government. Reported data excluded because 102 percent greater than 100 percent. GoC=R+ D+

2012: Ninety nine percent coverage was achieved in children eligible during the last six months of the year. The WHO and UNICEF estimate of 50 percent represents the same doses on an annualized basis. Reported data excluded. . The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. Rotavirus vaccine introduced on 25 May 2012 as part of a three-dose series. GoC=Assigned by working group. .

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	50	98	98	98	98
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	99	102	98	101	98
Administrative	NA	NA	NA	NA	NA	NA	NA	99	102	102	104	103
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.

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

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Rwanda - PcV3

RWA - PcV3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- * Administrative coverage
- | Survey 12-23 months of age, card or history

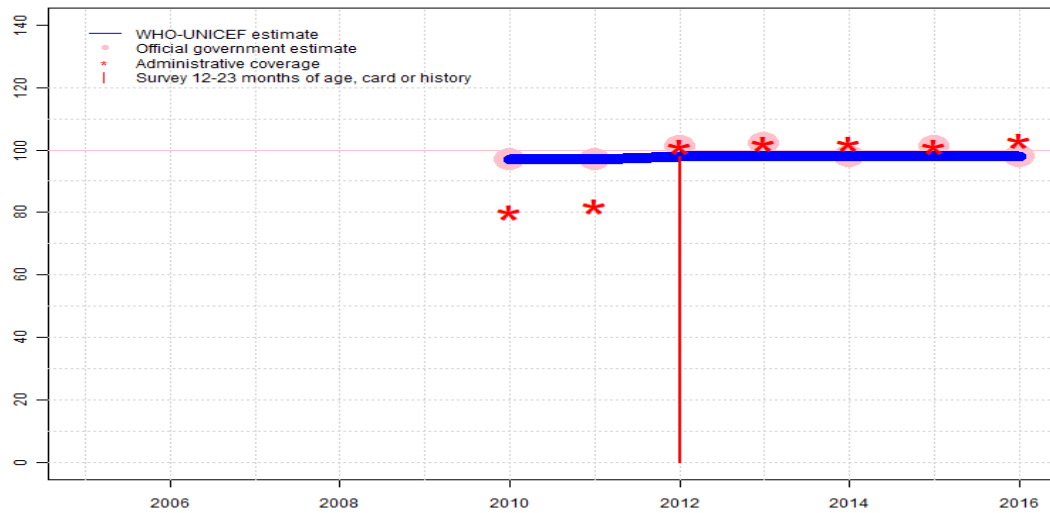|	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	97	97	98	98	98	98	98
Estimate GoC	NA	NA	NA	NA	NA	●●●	●●	●●	●	●●●	●●	●●
Official	NA	NA	NA	NA	NA	97	97	101	102	98	101	98
Administrative	NA	NA	NA	NA	NA	80	82	101	102	102	101	103
Survey	NA	NA	NA	NA	NA	NA	NA	98	NA	NA	NA	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 final results of the 2012 Census were released by the National Institute of Statistics of Rwanda in April 2014. WHO and UNICEF recommend a revision of the reported coverage time series using updated population estimates. GoC=R+ D+

2015: Estimate based on interpolation between data reported by national government. Reported data excluded because 101 percent greater than 100 percent. GoC=R+ D+

2014: Estimate is based on reported data. GoC=R+ S+ D+

2013: Reported data calibrated to 2012 and 2014 levels. Reported data excluded because 102 percent greater than 100 percent. Estimate challenged by: R-

2012: Estimate of 98 percent assigned by working group. Estimate is based on survey results. Integrated Post Measles-Rubella campaign and Routine Immunization Coverage Evaluation Survey 2013 card or history results of 98 percent modifed for recall bias to 97 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 75 percent and 3d dose card only coverage of 74 percent. Reported data excluded because 101 percent greater than 100 percent. The number of children vaccinated with BCG was used as the proxy of target populations for all other antigens. This measure is temporary pending the availability of the 2012 census results. GoC=Assigned by working group. .

2011: Estimate is based on reported data. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 GoC=R+ S+

2010: Estimate based on reported data. Official government estimates of coverage from 2009-2011 are based on the 2010 DHS results of coverage among children 12-23 months of age vaccinated by 12 months of age documented by card or caretaker recall. Administrative coverage levels from 2009-2011 Pneumococcal conjugate vaccine introduced in 2009. Reporting started in 2010.. GoC=R+ S+ D+

Rwanda - survey details

2013 Rwanda Demographic and Health Survey 2014-15

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99	12-23 m	1581	94
BCG	Card	94	12-23 m	1485	94
BCG	Card or History	99	12-23 m	1581	94
BCG	History	5	12-23 m	96	94
DTP1	C or H <12 months	99	12-23 m	1581	94
DTP1	Card	94	12-23 m	1485	94
DTP1	Card or History	99	12-23 m	1581	94
DTP1	History	5	12-23 m	96	94
DTP3	C or H <12 months	98	12-23 m	1581	94
DTP3	Card	93	12-23 m	1485	94
DTP3	Card or History	98	12-23 m	1581	94
DTP3	History	5	12-23 m	96	94
HepB1	C or H <12 months	99	12-23 m	1581	94
HepB1	Card	94	12-23 m	1485	94
HepB1	Card or History	99	12-23 m	1581	94
HepB1	History	5	12-23 m	96	94
HepB3	C or H <12 months	98	12-23 m	1581	94
HepB3	Card	93	12-23 m	1485	94
HepB3	Card or History	98	12-23 m	1581	94
HepB3	History	5	12-23 m	96	94
Hib1	C or H <12 months	99	12-23 m	1581	94
Hib1	Card	94	12-23 m	1485	94
Hib1	Card or History	99	12-23 m	1581	94
Hib1	History	5	12-23 m	96	94
Hib3	C or H <12 months	98	12-23 m	1581	94
Hib3	Card	93	12-23 m	1485	94
Hib3	Card or History	98	12-23 m	1581	94
Hib3	History	5	12-23 m	96	94
MCV1	C or H <12 months	89	12-23 m	1581	94
MCV1	Card	90	12-23 m	1485	94
MCV1	Card or History	95	12-23 m	1581	94
MCV1	History	5	12-23 m	96	94
Pol1	C or H <12 months	99	12-23 m	1581	94
Pol1	Card	94	12-23 m	1485	94
Pol1	Card or History	99	12-23 m	1581	94
Pol1	History	5	12-23 m	96	94
Pol3	C or H <12 months	97	12-23 m	1581	94
Pol3	Card	93	12-23 m	1485	94
Pol3	Card or History	97	12-23 m	1581	94
Pol3	History	3	12-23 m	96	94

2012 Integrated Post Measles-Rubella campaign and Routine Immunization Coverage Evaluation Survey 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	99	12-23 m	-	80
BCG	Card or History	99	12-23 m	8563	80
BCG	Scar	98	12-23 m	-	80
DTP1	Card	75	12-23 m	-	80
DTP1	Card or History	99	12-23 m	8563	80
DTP3	Card	74	12-23 m	-	80
DTP3	Card or History	98	12-23 m	8563	80
HepB1	Card	75	12-23 m	-	80
HepB1	Card or History	99	12-23 m	8563	80
HepB3	Card	74	12-23 m	-	80
HepB3	Card or History	98	12-23 m	8563	80
Hib1	Card	75	12-23 m	-	80
Hib1	Card or History	99	12-23 m	8563	80
Hib3	Card	74	12-23 m	-	80
Hib3	Card or History	98	12-23 m	8563	80
MCV1	Card	71	12-23 m	-	80
MCV1	Card or History	97	12-23 m	8563	80
PcV1	Card	75	12-23 m	-	80
PcV1	Card or History	98	12-23 m	8563	80
PcV3	Card	74	12-23 m	-	80
PcV3	Card or History	98	12-23 m	8563	80
Pol3	Card	74	12-23 m	-	80
Pol3	Card or History	98	12-23 m	8563	80

2012 Rwanda Demographic and Health Survey 2014-15

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99	24-35 m	1555	94
DTP1	C or H <12 months	98	24-35 m	1555	94
DTP3	C or H <12 months	98	24-35 m	1555	94

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
HepB1	C or H <12 months	98	24-35 m	1555	94
HepB3	C or H <12 months	98	24-35 m	1555	94
Hib1	C or H <12 months	98	24-35 m	1555	94
Hib3	C or H <12 months	98	24-35 m	1555	94
MCV1	C or H <12 months	92	24-35 m	1555	94
Pol1	C or H <12 months	99	24-35 m	1555	94
Pol3	C or H <12 months	94	24-35 m	1555	94

2011 Rwanda Demographic and Health Survey 2014-15

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	98	36-47 m	1602	94
DTP1	C or H <12 months	99	36-47 m	1602	94
DTP3	C or H <12 months	97	36-47 m	1602	94
HepB1	C or H <12 months	99	36-47 m	1602	94
HepB3	C or H <12 months	97	36-47 m	1602	94
Hib1	C or H <12 months	99	36-47 m	1602	94
Hib3	C or H <12 months	97	36-47 m	1602	94
MCV1	C or H <12 months	91	36-47 m	1602	94
Pol1	C or H <12 months	99	36-47 m	1602	94
Pol3	C or H <12 months	94	36-47 m	1602	94

2010 Rwanda Demographic and Health Survey 2014-15

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	98	48-59 m	1314	94
DTP1	C or H <12 months	98	48-59 m	1314	94
DTP3	C or H <12 months	96	48-59 m	1314	94
HepB1	C or H <12 months	98	48-59 m	1314	94
HepB3	C or H <12 months	96	48-59 m	1314	94
Hib1	C or H <12 months	98	48-59 m	1314	94
Hib3	C or H <12 months	96	48-59 m	1314	94
MCV1	C or H <12 months	90	48-59 m	1314	94
Pol1	C or H <12 months	98	48-59 m	1314	94
Pol3	C or H <12 months	91	48-59 m	1314	94

2009 Rwanda Demographic and Health Survey 2010

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99	12-23 m	1616	82
BCG	Card	82	12-23 m	1616	82
BCG	Card or History	99	12-23 m	1616	82
BCG	History	17	12-23 m	1616	82
DTP1	C or H <12 months	98	12-23 m	1616	82
DTP1	Card	82	12-23 m	1616	82
DTP1	Card or History	99	12-23 m	1616	82
DTP1	History	17	12-23 m	1616	82
DTP3	C or H <12 months	96	12-23 m	1616	82
DTP3	Card	81	12-23 m	1616	82
DTP3	Card or History	97	12-23 m	1616	82
DTP3	History	16	12-23 m	1616	82
HepB1	C or H <12 months	98	12-23 m	1616	82
HepB1	Card	82	12-23 m	1616	82
HepB1	Card or History	99	12-23 m	1616	82
HepB1	History	17	12-23 m	1616	82
HepB3	C or H <12 months	96	12-23 m	1616	82
HepB3	Card	81	12-23 m	1616	82
HepB3	Card or History	97	12-23 m	1616	82
HepB3	History	16	12-23 m	1616	82
Hib1	C or H <12 months	98	12-23 m	1616	82
Hib1	Card	82	12-23 m	1616	82
Hib1	Card or History	99	12-23 m	1616	82
Hib1	History	17	12-23 m	1616	82
Hib3	C or H <12 months	96	12-23 m	1616	82
Hib3	Card	81	12-23 m	1616	82
Hib3	Card or History	97	12-23 m	1616	82
Hib3	History	16	12-23 m	1616	82
MCV1	C or H <12 months	90	12-23 m	1616	82
MCV1	Card	79	12-23 m	1616	82
MCV1	Card or History	95	12-23 m	1616	82
MCV1	History	16	12-23 m	1616	82
Pol1	C or H <12 months	99	12-23 m	1616	82
Pol1	Card	82	12-23 m	1616	82
Pol1	Card or History	99	12-23 m	1616	82
Pol1	History	17	12-23 m	1616	82
Pol3	C or H <12 months	93	12-23 m	1616	82

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
Pol3	Card	81	12-23 m	1616	82
Pol3	Card or History	93	12-23 m	1616	82
Pol3	History	12	12-23 m	1616	82

2007 Rwanda Interim Demographic and Health Survey 2007-08

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	95	12-23 m	1226	67
BCG	Card	67	12-23 m	1226	67
BCG	Card or History	96	12-23 m	1226	67
BCG	History	29	12-23 m	1226	67
DTP1	C or H <12 months	94	12-23 m	1226	67
DTP1	Card	67	12-23 m	1226	67
DTP1	Card or History	95	12-23 m	1226	67
DTP1	History	28	12-23 m	1226	67
DTP3	C or H <12 months	88	12-23 m	1226	67
DTP3	Card	66	12-23 m	1226	67
DTP3	Card or History	90	12-23 m	1226	67
DTP3	History	24	12-23 m	1226	67
HepB1	C or H <12 months	94	12-23 m	1226	67
HepB1	Card	67	12-23 m	1226	67
HepB1	Card or History	95	12-23 m	1226	67
HepB1	History	28	12-23 m	1226	67
HepB3	C or H <12 months	88	12-23 m	1226	67
HepB3	Card	66	12-23 m	1226	67
HepB3	Card or History	90	12-23 m	1226	67
HepB3	History	24	12-23 m	1226	67
Hib1	C or H <12 months	94	12-23 m	1226	67
Hib1	Card	67	12-23 m	1226	67
Hib1	Card or History	95	12-23 m	1226	67
Hib1	History	28	12-23 m	1226	67
Hib3	C or H <12 months	88	12-23 m	1226	67
Hib3	Card	66	12-23 m	1226	67
Hib3	Card or History	90	12-23 m	1226	67
Hib3	History	24	12-23 m	1226	67
MCV1	C or H <12 months	83	12-23 m	1226	67
MCV1	Card	64	12-23 m	1226	67
MCV1	Card or History	90	12-23 m	1226	67
MCV1	History	26	12-23 m	1226	67
Pol1	C or H <12 months	95	12-23 m	1226	67
Pol1	Card	67	12-23 m	1226	67
Pol1	Card or History	96	12-23 m	1226	67
Pol1	History	29	12-23 m	1226	67
Pol3	C or H <12 months	84	12-23 m	1226	67
Pol3	Card	66	12-23 m	1226	67
Pol3	Card or History	86	12-23 m	1226	67
Pol3	History	20	12-23 m	1226	67

2006 Enqête nationale de couverture vaccinale à Rwanda, 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	94	12-23 m	1049	82
BCG	Card or History	98	12-23 m	1049	82
DTP1	Card	99	12-23 m	1049	82
DTP1	Card or History	99	12-23 m	1049	82
DTP3	Card	97	12-23 m	1049	82
DTP3	Card or History	97	12-23 m	1049	82
HepB1	Card	99	12-23 m	1049	82
HepB1	Card or History	99	12-23 m	1049	82
HepB3	Card	97	12-23 m	1049	82
HepB3	Card or History	97	12-23 m	1049	82
Hib1	Card	99	12-23 m	1049	82
Hib1	Card or History	99	12-23 m	1049	82
Hib3	Card	97	12-23 m	1049	82
Hib3	Card or History	97	12-23 m	1049	82
MCV1	Card	95	12-23 m	1049	82
MCV1	Card or History	96	12-23 m	1049	82
Pol1	Card	98	12-23 m	1049	82
Pol1	Card or History	98	12-23 m	1049	82
Pol3	Card	97	12-23 m	1049	82
Pol3	Card or History	97	12-23 m	1049	82

2004 Rwanda Demographic and Health Survey 2005

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	96	12-23 m	1626	76

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	75	12-23 m	1626	76
BCG	Card or History	96	12-23 m	1626	76
BCG	History	21	12-23 m	1626	76
DTP1	C or H <12 months	96	12-23 m	1626	76
DTP1	Card	76	12-23 m	1626	76
DTP1	Card or History	97	12-23 m	1626	76
DTP1	History	21	12-23 m	1626	76
DTP3	C or H <12 months	86	12-23 m	1626	76
DTP3	Card	73	12-23 m	1626	76
DTP3	Card or History	87	12-23 m	1626	76
DTP3	History	14	12-23 m	1626	76
MCV1	C or H <12 months	79	12-23 m	1626	76
MCV1	Card	67	12-23 m	1626	76
MCV1	Card or History	86	12-23 m	1626	76
MCV1	History	19	12-23 m	1626	76
Pol1	C or H <12 months	96	12-23 m	1626	76
Pol1	Card	76	12-23 m	1626	76
Pol1	Card or History	96	12-23 m	1626	76
Pol1	History	21	12-23 m	1626	76
Pol3	C or H <12 months	84	12-23 m	1626	76
Pol3	Card	73	12-23 m	1626	76
Pol3	Card or History	84	12-23 m	1626	76
Pol3	History	12	12-23 m	1626	76

2002 Rwanda, Evaluation de la campagne contre la rougeole et la vaccination de routine, 2003 - documentation not available

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99	12-23 m	-	79
DTP1	C or H <12 months	97	12-23 m	-	79
DTP3	C or H <12 months	92	12-23 m	-	79
MCV1	C or H <12 months	92	12-23 m	-	79
Pol3	C or H <12 months	87	12-23 m	-	79

1999 Enquête à Indicateurs Multiples (MICS2), Rapport Final, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	71	12-23 m	596	72
BCG	Card or History	91	12-23 m	596	72
BCG	History	20	12-23 m	596	72
DTP1	Card	70	12-23 m	596	72
DTP1	Card or History	90	12-23 m	596	72
DTP1	History	20	12-23 m	596	72
DTP3	Card	68	12-23 m	596	72
DTP3	Card or History	81	12-23 m	596	72
DTP3	History	14	12-23 m	596	72
MCV1	Card	63	12-23 m	596	72
MCV1	Card or History	82	12-23 m	596	72
MCV1	History	19	12-23 m	596	72
Pol1	Card	70	12-23 m	596	72
Pol1	Card or History	92	12-23 m	596	72
Pol1	History	21	12-23 m	596	72
Pol3	Card	68	12-23 m	596	72
Pol3	Card or History	80	12-23 m	596	72
Pol3	History	11	12-23 m	596	72

1999 Enquête Démographique et de Santé Rwanda 2000 (EDSR-II), 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	96	12-23 m	1330	66
BCG	Card	66	12-23 m	1330	66
BCG	Card or History	97	12-23 m	1330	66
BCG	History	31	12-23 m	1330	66
DTP1	C or H <12 months	95	12-23 m	1330	66
DTP1	Card	66	12-23 m	1330	66
DTP1	Card or History	96	12-23 m	1330	66
DTP1	History	30	12-23 m	1330	66
DTP3	C or H <12 months	85	12-23 m	1330	66
DTP3	Card	63	12-23 m	1330	66
DTP3	Card or History	86	12-23 m	1330	66
DTP3	History	23	12-23 m	1330	66
MCV1	C or H <12 months	80	12-23 m	1330	66
MCV1	Card	59	12-23 m	1330	66
MCV1	Card or History	87	12-23 m	1330	66
MCV1	History	28	12-23 m	1330	66
Pol1	C or H <12 months	96	12-23 m	1330	66

Pol1	Card	66	12-23 m	1330	66
Pol1	Card or History	96	12-23 m	1330	66
Pol1	History	31	12-23 m	1330	66
Pol3	C or H <12 months	87	12-23 m	1330	66
Pol3	Card	64	12-23 m	1330	66
Pol3	Card or History	88	12-23 m	1330	66
Pol3	History	24	12-23 m	1330	66

1998 Enquête Démographique et de Santé Rwanda 2000 (EDSR-II), 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	94	24-35 m	1232	66
DTP1	C or H <12 months	91	24-35 m	1232	66
DTP3	C or H <12 months	79	24-35 m	1232	66
MCV1	C or H <12 months	80	24-35 m	1232	66
Pol1	C or H <12 months	93	24-35 m	1232	66
Pol3	C or H <12 months	80	24-35 m	1232	66

1998 Rapport d'Evaluation de la Couverture Vaccinale au Niveau des Onze
      Regions Sanitaires, Mai-Juni 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	94	12-23 m	-	-
DTP1	Card or History	93	12-23 m	-	-
DTP3	Card or History	85	12-23 m	-	-
MCV1	Card or History	78	12-23 m	-	-
Pol1	Card or History	93	12-23 m	-	-
Pol3	Card or History	85	12-23 m	-	-

1997 Enquête Démographique et de Santé Rwanda 2000 (EDSR-II), 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	96	36-47 m	1297	66
DTP1	C or H <12 months	92	36-47 m	1297	66
DTP3	C or H <12 months	80	36-47 m	1297	66
MCV1	C or H <12 months	74	36-47 m	1297	66
Pol1	C or H <12 months	94	36-47 m	1297	66
Pol3	C or H <12 months	82	36-47 m	1297	66

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