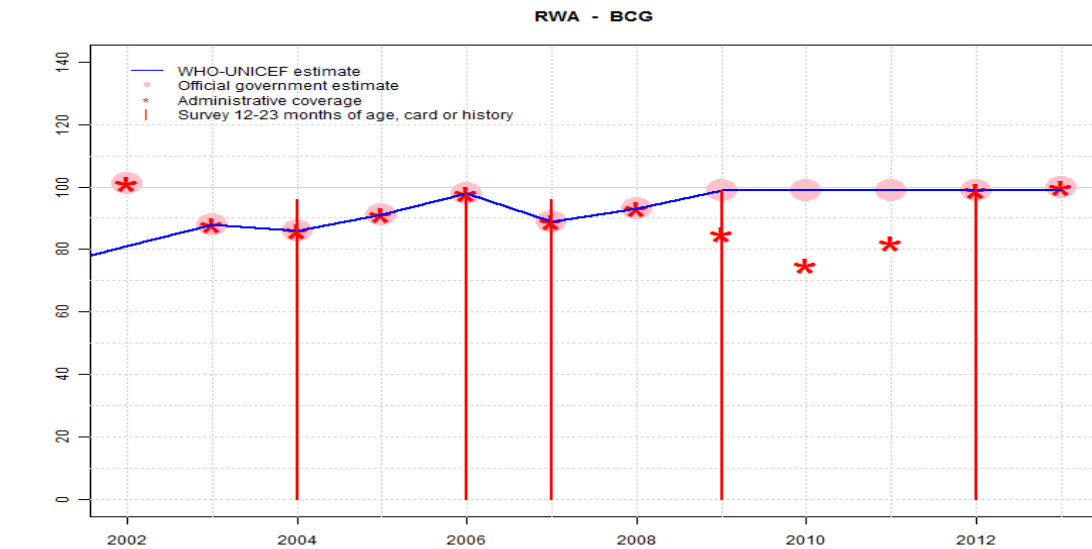


# Rwanda - BCG



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	81	88	86	91	98	89	93	99	99	99	99	99
Estimate GoC	•	•••	•••	•••	•••	•••	•••	••	••	••	••	•
Official	101	88	86	91	98	89	93	99	99	99	99	100
Administrative	101	88	86	91	98	89	93	85	75	82	99	100
Survey	NA	NA	96	NA	98	96	NA	99	NA	NA	99	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: 2012 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.

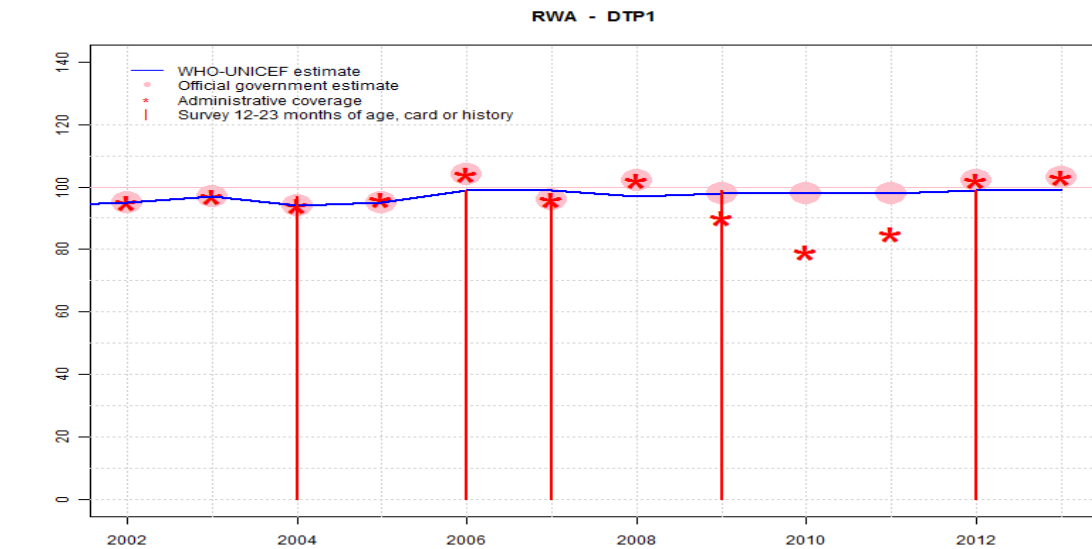
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on interpolation between coverage reported by national government. Reported data excluded. 101 percent greater than 100 percent. Reported data excluded. Unexplained increase from 74 percent to 101 percent with decrease 88 percent. Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: 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+
- 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+
- 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+
- 2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.

- 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. .
- 2013: 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. Estimate challenged by: D-

# Rwanda - DTP1



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	95	97	94	95	99	99	97	98	98	98	99	99
Estimate GoC	●●●	●●●	●●●	●●●	●	●	●●	●●	●●	●●	●●	●
Official	95	97	94	95	104	96	102	98	98	98	102	103
Administrative	95	97	94	96	104	96	102	90	79	85	102	103
Survey	NA	NA	97	NA	99	95	NA	99	NA	NA	99	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: 2012 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:

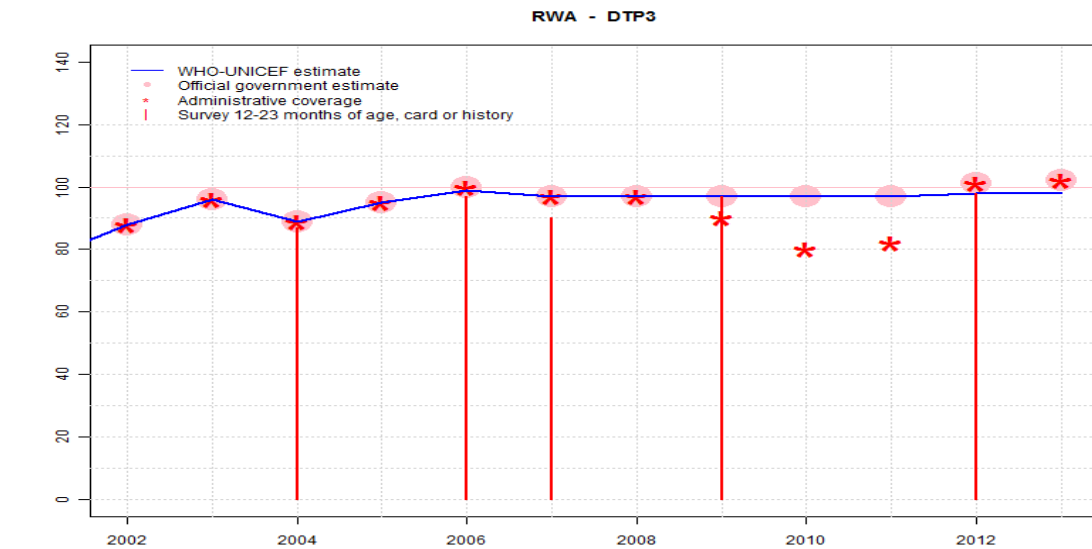
- 2002: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2006: DTP1 coverage estimated based on DTP3 coverage of 100. Reported data excluded. 104 percent greater than 100 percent. Estimate challenged by: R-
- 2007: DTP1 coverage estimated based on DTP3 coverage of 97. Estimate challenged by: R-
- 2008: Estimate based on interpolation between coverage reported by national government. Reported data excluded. 102 percent greater than 100 percent. GoC=S+ D+
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 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. .

2013: Reported data calibrated to 2012 levels. Reported data excluded. 103 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - DTP3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	88	96	89	95	99	97	97	97	97	97	98	98
Estimate GoC	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●	●●	●●	●●	●
Official	88	96	89	95	100	97	97	97	97	97	101	102
Administrative	88	96	89	95	100	97	97	90	80	82	101	102
Survey	NA	NA	87	NA	97	90	NA	97	NA	NA	98	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: 2012 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.

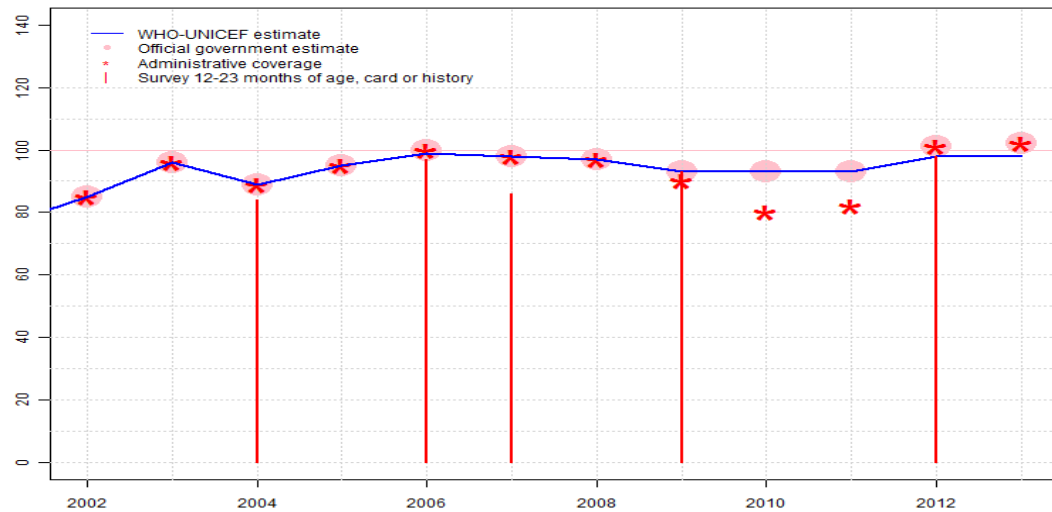
## Description:

- 2002: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 93 percent based on 1 survey(s). Rwanda Demographic and Health Survey 2005 card or history results of 87 percent modified for recall bias to 93 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 76 percent and 3d dose card only coverage of 73 percent. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. 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+
- 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 modified 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+
- 2008: Estimate based on coverage reported by national government. 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 modified 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.

- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 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. .
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. 102 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - Pol3

RWA - Pol3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	85	96	89	95	99	98	97	93	93	93	98	98
Estimate GoC	•••	•••	•••	•••	•••	•••	•••	••	••	••	••	•
Official	85	96	89	95	100	98	97	93	93	93	101	102
Administrative	85	96	89	95	100	98	97	90	80	82	101	102
Survey	NA	NA	84	NA	97	86	NA	93	NA	NA	98	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: 2012 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.

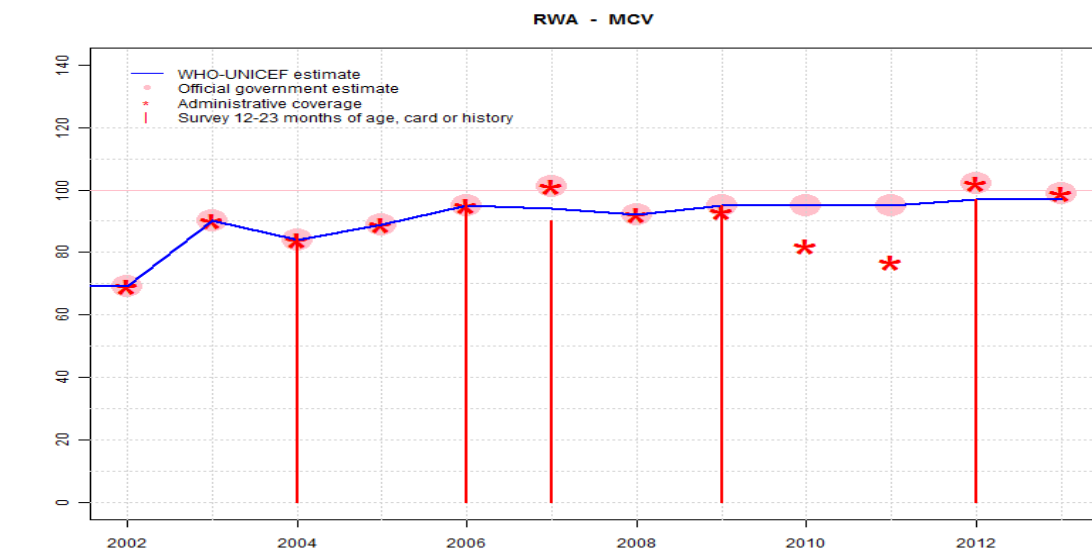
## Description:

- 2002: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Rwanda Demographic and Health Survey 2005 card or history results of 84 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 76 percent and 3d dose card only coverage of 73 percent. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. 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+
- 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 modified 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+
- 2008: Estimate based on coverage reported by national government. 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 93 percent modified 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.



- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 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. .
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. 102 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - MCV



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	69	90	84	89	95	94	92	95	95	95	97	97
Estimate GoC	••	•••	•••	•••	•••	••	•••	••	••	••	••	•
Official	69	90	84	89	95	101	92	95	95	95	102	99
Administrative	69	90	84	89	95	101	92	93	82	77	102	99
Survey	NA	NA	86	NA	96	90	NA	95	NA	NA	97	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: 2012 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.

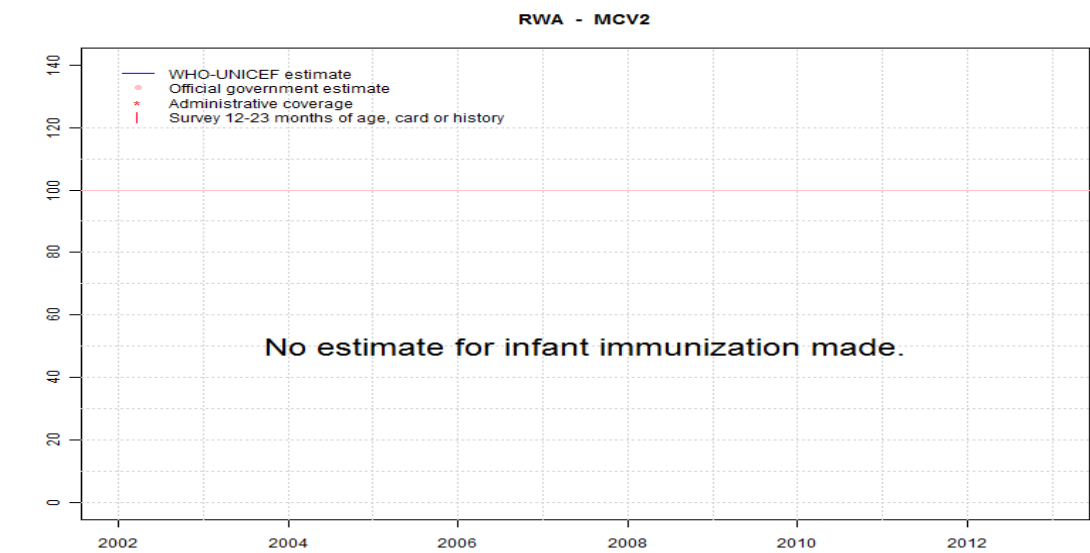
## Description:

- 2002: Estimate based on coverage reported by national government. GoC=R+ D+
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 86 percent based on 1 survey(s). GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. 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+
- 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. 101 percent greater than 100 percent. GoC=S+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 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. .

2013: Reported data calibrated to 2012 levels. Reported data excluded. Reported coverage for all other antigens is 100 percent or greater thereby suggesting an underestimated target population size. 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. Estimate challenged by: D-

# Rwanda - MCV2



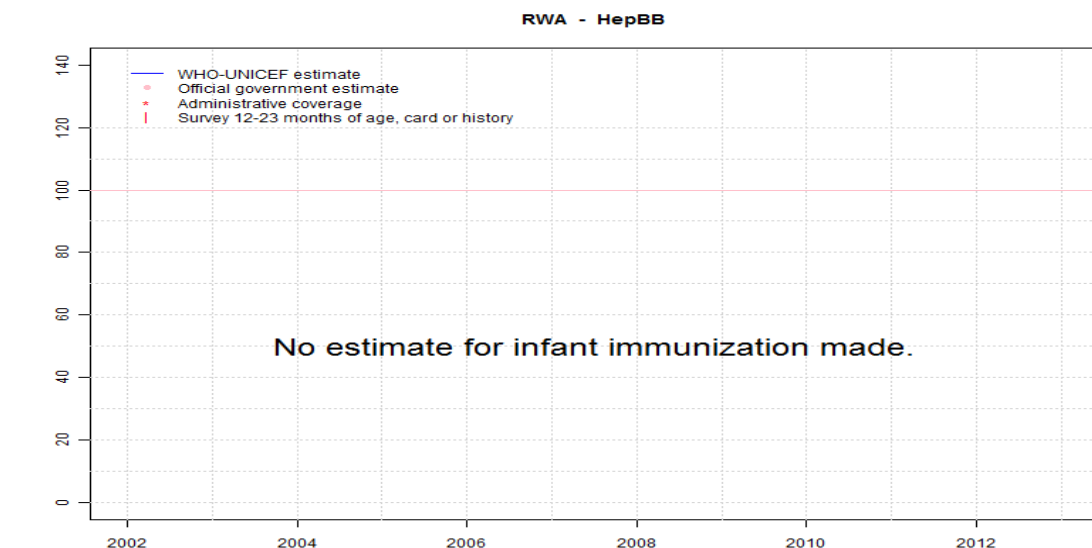
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2012 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 - HepBB



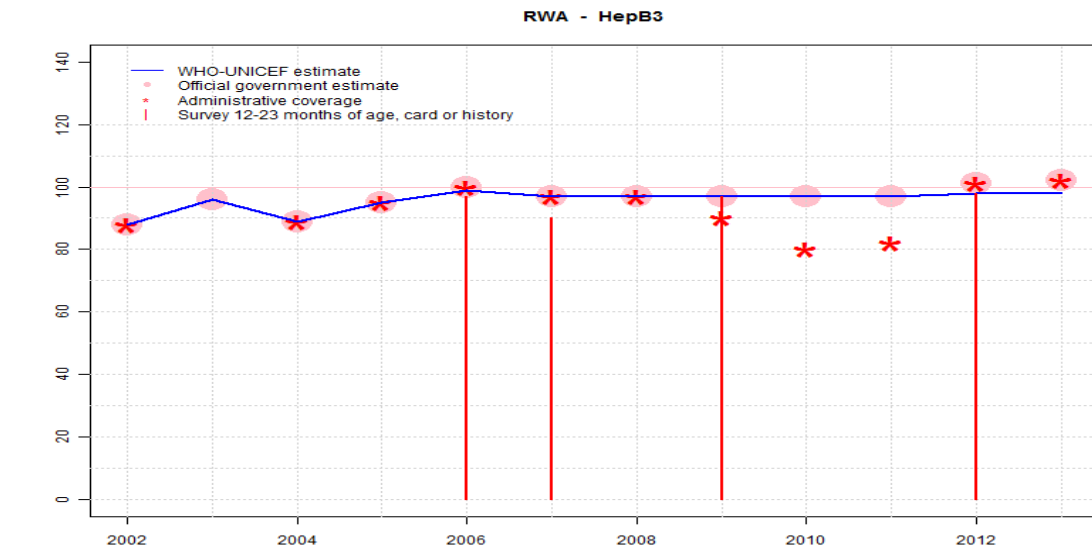
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2012 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



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	88	96	89	95	99	97	97	97	97	97	98	98
Estimate GoC	••	••	•••	•••	•••	•••	•••	••	••	••	••	•
Official	88	96	89	95	100	97	97	97	97	97	101	102
Administrative	88	NA	89	95	100	97	97	90	80	82	101	102
Survey	NA	NA	NA	NA	97	90	NA	97	NA	NA	98	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: 2012 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:

- 2002: Estimate based on reported data. HepB vaccine introduced in 2002 Vaccine presentation is DTP-HepB-Hib. GoC=R+ D+
- 2003: Estimate based on reported data. GoC=R+
- 2004: Estimate based on reported data. GoC=R+ S+ D+
- 2005: Estimate based on reported data. 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+
- 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 modified 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+
- 2008: Estimate based on coverage reported by national government. 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 modified 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 101 percent

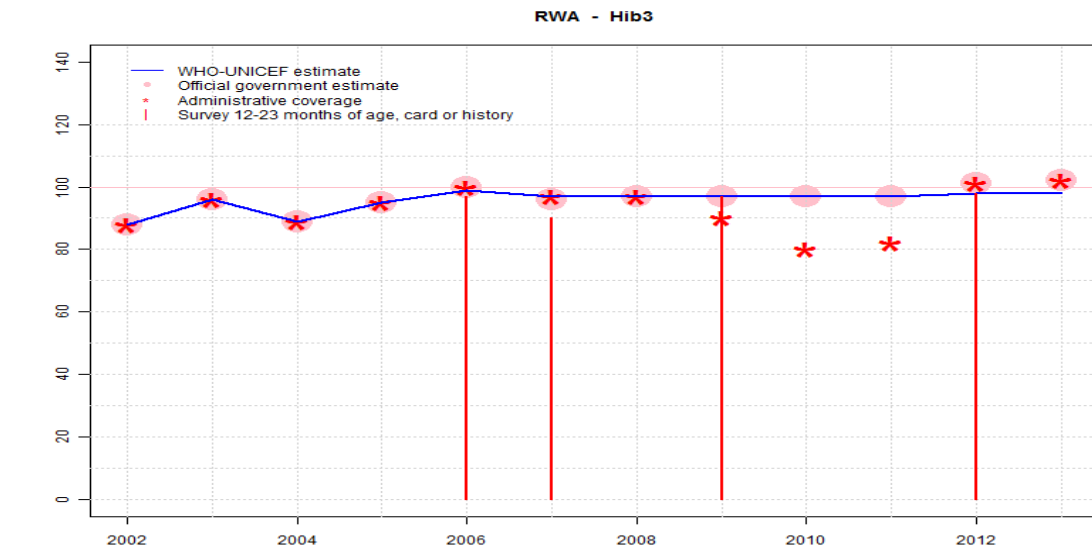
# Rwanda - HepB3

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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. .

2013: Reported data calibrated to 2012 levels. Reported data excluded. 102 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - Hib3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	88	96	89	95	99	97	97	97	97	97	98	98
Estimate GoC	••	••	•••	•••	•••	•	••	••	••	••	••	•
Official	88	96	89	95	100	96	97	97	97	97	101	102
Administrative	88	96	89	95	100	97	97	90	80	82	101	102
Survey	NA	NA	NA	NA	97	90	NA	97	NA	NA	98	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: 2012 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:

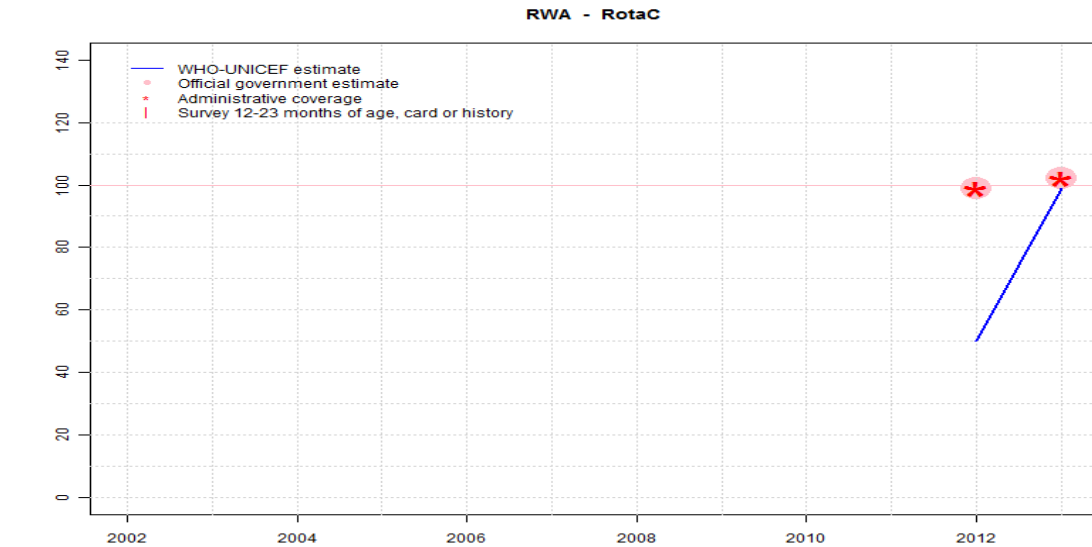
- 2002: Estimate based on reported data. Hib vaccine introduced in 2002 Vaccine presentation is DTP-HepB-Hib. GoC=R+ D+
- 2003: Estimate based on reported data. GoC=R+
- 2004: Estimate based on reported data. GoC=R+ S+ D+
- 2005: Estimate based on reported data. GoC=R+ S+ D+
- 2006: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). GoC=R+ S+ D+
- 2007: 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 modified 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-
- 2008: Reported data calibrated to 2007 and 2009 levels. GoC=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 modified 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 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. .

2013: Reported data calibrated to 2012 levels. Reported data excluded. 102 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - RotaC



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	99
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99	102
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99	102
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: 2012 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.

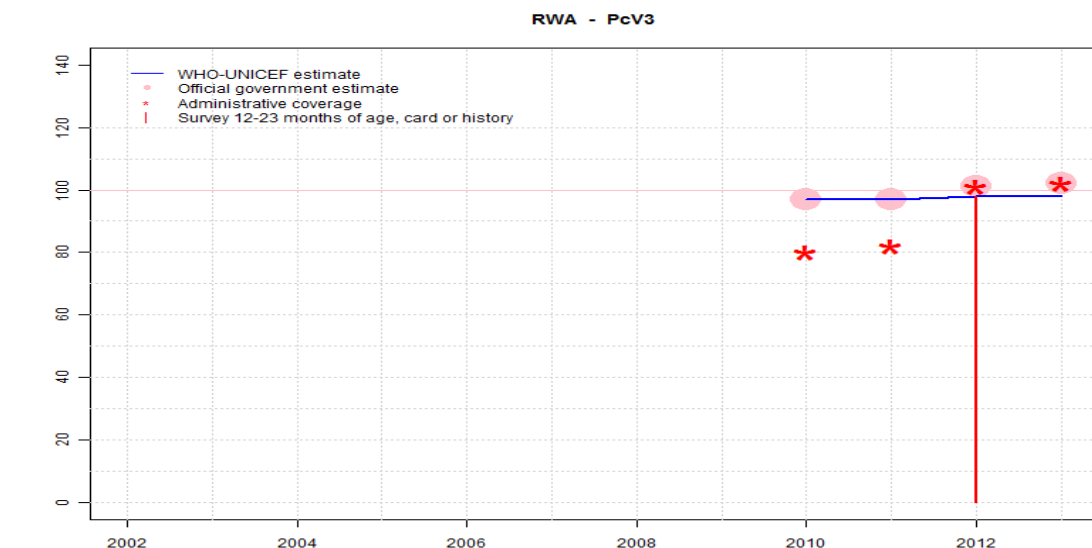
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

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. 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. .

2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. 102 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - PcV3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	97	97	98	98
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	••	••	••	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	97	97	101	102
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	80	82	101	102
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	98	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: 2012 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:

- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 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=Assigned by working group. WHO and UNICEF estimate supported by official government estimate and DHS 2010 survey.
- 2012: Estimate is based on survey results. Reported data excluded. 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. .
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. 102 percent greater than 100 percent. 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. Estimate challenged by: D-

# Rwanda - survey details

## 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	8563	80
BCG	Card or History	99	12-23 m	8563	80
BCG	Scar	98	12-23 m	8563	80
DTP1	Card	75	12-23 m	8563	80
DTP1	Card or History	99	12-23 m	8563	80
DTP3	Card	74	12-23 m	8563	80
DTP3	Card or History	98	12-23 m	8563	80
HepB1	Card	75	12-23 m	8563	80
HepB1	Card or History	99	12-23 m	8563	80
HepB3	Card	74	12-23 m	8563	80
HepB3	Card or History	98	12-23 m	8563	80
Hib1	Card	75	12-23 m	8563	80
Hib1	Card or History	99	12-23 m	8563	80
Hib3	Card	74	12-23 m	8563	80
Hib3	Card or History	98	12-23 m	8563	80
MCV	Card	71	12-23 m	8563	80
MCV	Card or History	97	12-23 m	8563	80
PcV3	Card	74	12-23 m	8563	80
PcV3	Card or History	98	12-23 m	8563	80
Pol3	Card	74	12-23 m	8563	80
Pol3	Card or History	98	12-23 m	8563	80

## 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
MCV	C or H <12 months	90	12-23 m	1616	82
MCV	Card	79	12-23 m	1616	82
MCV	Card or History	95	12-23 m	1616	82
MCV	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
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

# Rwanda - survey details

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
MCV	C or H <12 months	83	12-23 m	1226	67
MCV	Card	64	12-23 m	1226	67
MCV	Card or History	90	12-23 m	1226	67
MCV	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 Enquête 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
MCV	Card	95	12-23 m	1049	82
MCV	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
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
MCV	C or H <12 months	79	12-23 m	1626	76
MCV	Card	67	12-23 m	1626	76

# Rwanda - survey details

MCV	Card or History	86	12-23 m	1626	76
MCV	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
MCV	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 préliminaire, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	73	12-23 m	596	61
BCG	Card or History	92	12-23 m	596	61
BCG	History	19	12-23 m	596	61
DTP1	Card	72	12-23 m	596	61
DTP1	Card or History	91	12-23 m	596	61
DTP1	History	19	12-23 m	596	61
DTP3	Card	69	12-23 m	596	61
DTP3	Card or History	81	12-23 m	596	61
DTP3	History	12	12-23 m	596	61
MCV	Card	64	12-23 m	596	61
MCV	Card or History	83	12-23 m	596	61
MCV	History	19	12-23 m	596	61

Pol1	Card	72	12-23 m	596	61
Pol1	Card or History	92	12-23 m	596	61
Pol1	History	20	12-23 m	596	61
Pol3	Card	70	12-23 m	596	61
Pol3	Card or History	89	12-23 m	596	61
Pol3	History	11	12-23 m	596	61

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
MCV	C or H <12 months	80	12-23 m	1330	66
MCV	Card	59	12-23 m	1330	66
MCV	Card or History	87	12-23 m	1330	66
MCV	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

# Rwanda - survey details

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
MCV	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	-	-

MCV	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
MCV	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 prior to 2002 are available at:

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

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

## Rwanda

### WHO/UNICEF Estimates of Protection at Birth (PAB) against tetanus

In countries where tetanus is recommended for girls and women coverage is usually reported as "TT2+", i.e. the proportion of (pregnant) women who have received their second or superior TT dose in a given year. TT2 + coverage, however, can under-represent the actual proportion of births that are protected against tetanus as it does not include women who have previously received protective doses, women who received one dose without documentation of previous doses, and women who received doses in TT (or Td) supplemental immunization activities (SIA). In addition, girls who have received DTP in their childhood and are entering childbearing age, may be protected with TT booster doses.

WHO and UNICEF have developed a model that takes into account the above scenarios, and calculates the proportion of births in a given year that can be considered as having been protected against tetanus - "Protection at Birth".

In this model, annual cohorts of women are followed from infancy through their life. A proportion receive DTP in infancy (estimated based on the WHO-UNICEF estimates of DTP3 coverage). In addition some of these women also receive TT through routine services when they are pregnant and may also receive TT during SIAs. The model also adjusts reported data, taking into account coverage patterns in other years, and/or results available through surveys. The duration of protection is then calculated, based on WHO estimates of the duration of protection by doses ever received. The proportion of births that are protected against tetanus as a result of maternal immunization reflects the tetanus immunization received by the mother throughout her life rather than simply the TT immunizations received during the current pregnancy.

Year	PAB coverage estimate (%)
2002	79
2003	77
2004	77
2005	79
2006	82
2007	82
2008	85
2009	85
2010	85
2011	85
2012	85
2013	85

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<sup>1</sup> This model is described in: Griffiths U., Wolfson L., Quddus A., Younus M., Hafiz R.. Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan. Bulletin of the World Health Organization 2004; 82:643-651.