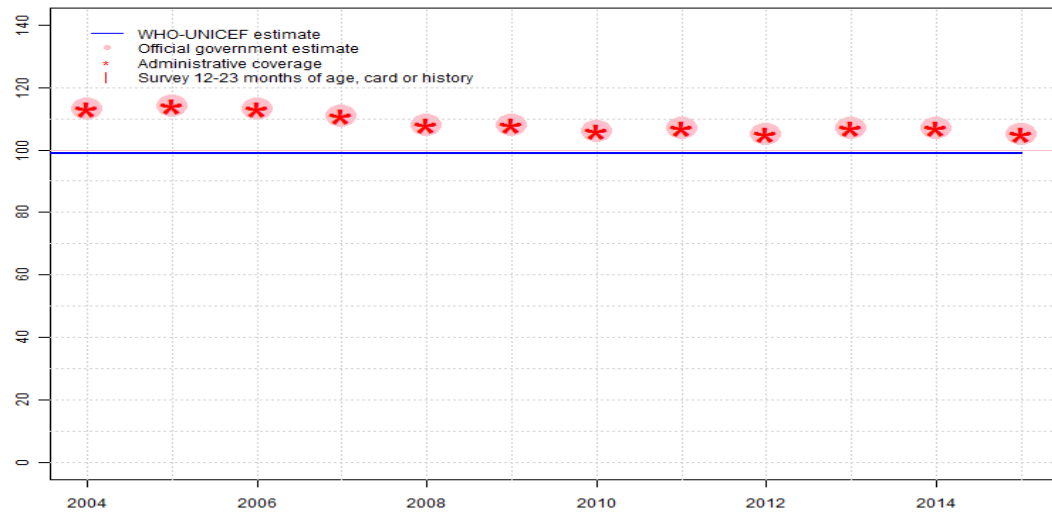


Brazil - BCG

BRA - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	113	114	113	111	108	108	106	107	105	107	107	105
Administrative	113	114	113	111	108	108	106	107	105	107	107	105
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

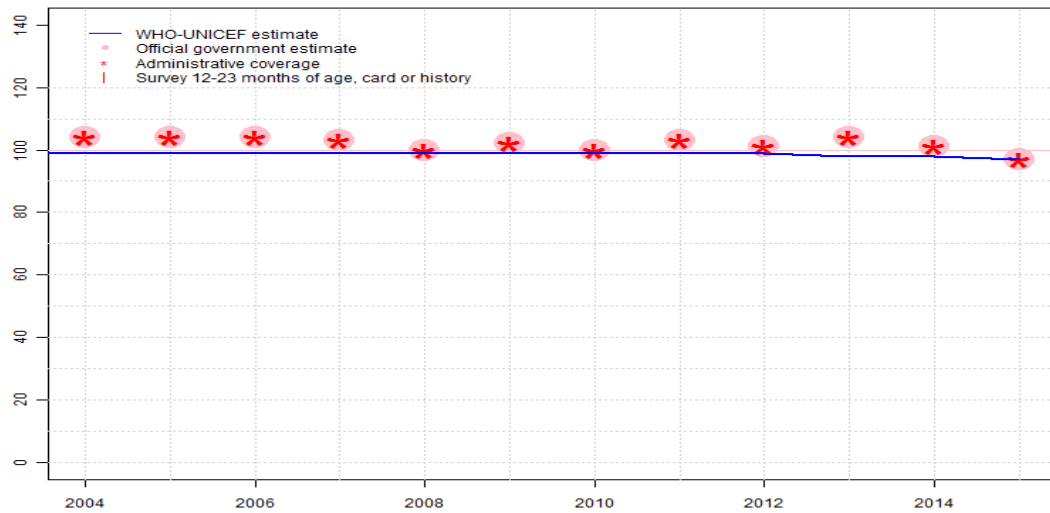
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Reported data calibrated to 1997 levels. Reported data excluded. 113 percent greater than 100 percent. GoC=D+
- 2005: Reported data calibrated to 1997 levels. Reported data excluded. 114 percent greater than 100 percent. GoC=D+
- 2006: Reported data calibrated to 1997 levels. Reported data excluded. 113 percent greater than 100 percent. GoC=D+
- 2007: Reported data calibrated to 1997 levels. Reported data excluded. 111 percent greater than 100 percent. GoC=D+
- 2008: Reported data calibrated to 1997 levels. Reported data excluded. 108 percent greater than 100 percent. GoC=D+
- 2009: Reported data calibrated to 1997 levels. Reported data excluded. 108 percent greater than 100 percent. GoC=D+
- 2010: Reported data calibrated to 1997 levels. Reported data excluded. 106 percent greater than 100 percent. GoC=D+
- 2011: Reported data calibrated to 1997 levels. Reported data excluded. 107 percent greater than 100 percent. GoC=D+
- 2012: Reported data calibrated to 1997 levels. Reported data excluded. 105 percent greater than 100 percent. GoC=D+
- 2013: Reported data calibrated to 1997 levels. Reported data excluded. 107 percent greater than 100 percent. GoC=D+
- 2014: Reported data calibrated to 1997 levels. Reported data excluded. 107 percent greater than 100 percent. GoC=D+
- 2015: Reported data calibrated to 1997 levels. Reported data excluded. 105 percent greater than 100 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. Program reports 1 month stockout. GoC=D+

Brazil - DTP1

BRA - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	99	99	99	99	99	99	99	99	99	98	98	97
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●	●●	●●	●●	●●
Official	104	104	104	103	100	102	100	103	101	104	101	97
Administrative	104	104	104	103	100	102	100	103	101	104	101	97
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

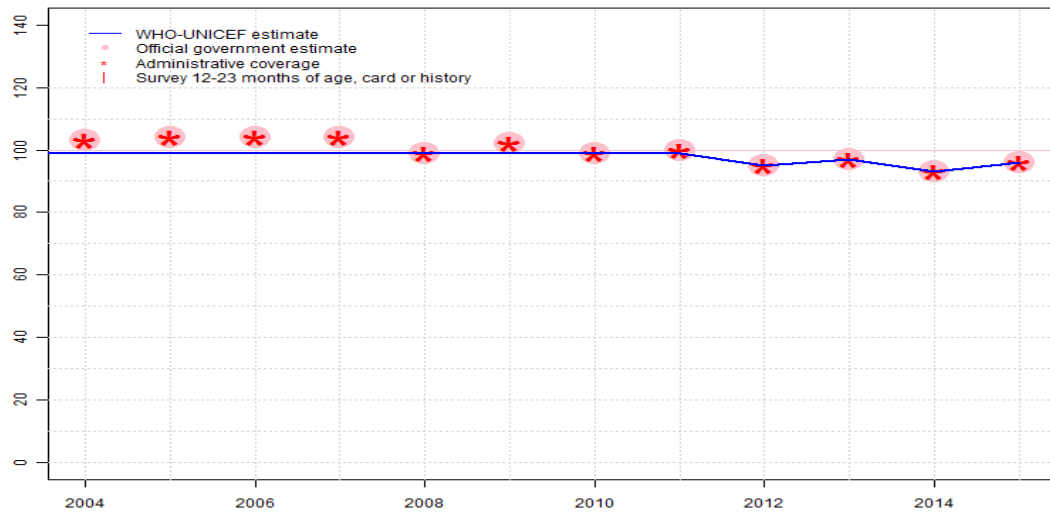
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2005: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2006: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2007: Estimate based on interpolation between data reported by national government. Reported data excluded. 103 percent greater than 100 percent. GoC=D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. 102 percent greater than 100 percent. GoC=D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: DTP1 coverage estimated based on DTP3 coverage of 100. Reported data excluded. 103 percent greater than 100 percent. Estimate challenged by: R-
- 2012: Estimate based on interpolation between data reported by national government. Reported data excluded. 101 percent greater than 100 percent. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. GoC=D+
- 2013: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. Estimate of 98 percent changed from previous revision value of 99 percent. GoC=D+
- 2014: Estimate based on interpolation between data reported by national government. Reported data excluded. 101 percent greater than 100 percent. Estimate of 98 percent changed from previous revision value of 99 percent. GoC=D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - DTP3

BRA - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	99	99	99	99	99	99	99	99	95	97	93	96
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	103	104	104	104	99	102	99	100	95	97	93	96
Administrative	103	104	104	104	99	102	99	100	95	97	93	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- 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.

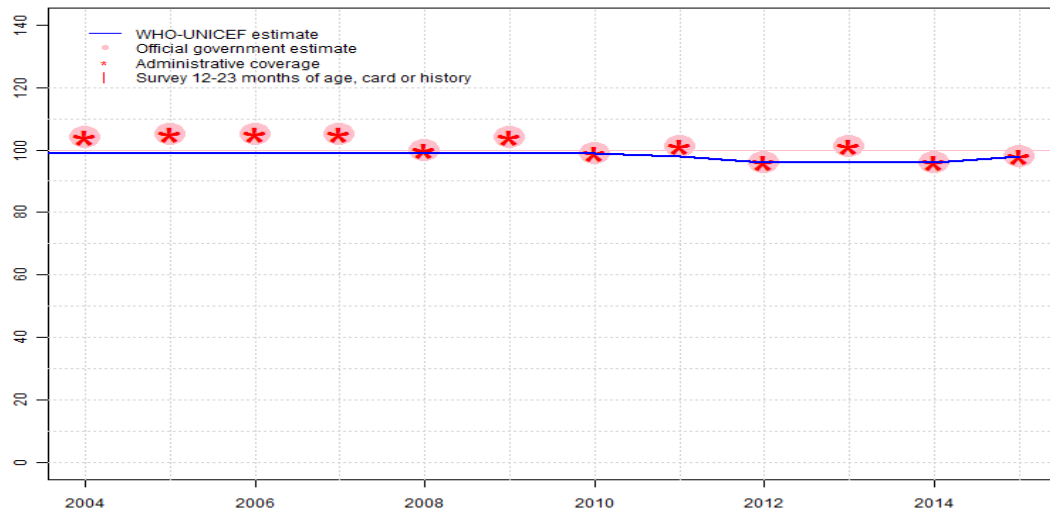
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on interpolation between data reported by national government. Reported data excluded. 103 percent greater than 100 percent. GoC=D+
- 2005: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2006: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2007: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. 102 percent greater than 100 percent. GoC=D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - Pol3

BRA - Pol3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	99	99	99	99	99	99	99	98	96	96	96	98
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	104	105	105	105	100	104	99	101	96	101	96	98
Administrative	104	105	105	105	100	104	99	101	96	101	96	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

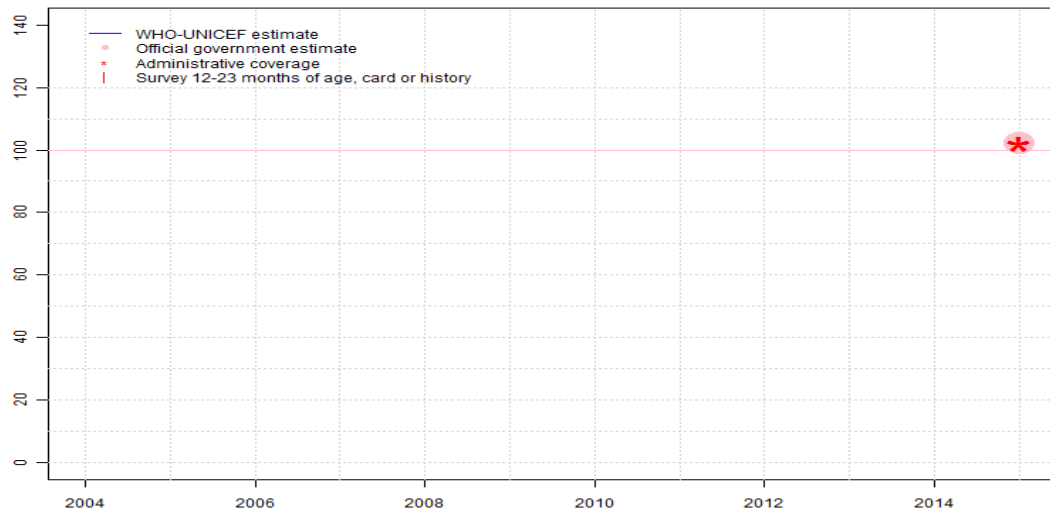
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2005: Estimate based on interpolation between data reported by national government. Reported data excluded. 105 percent greater than 100 percent. GoC=D+
- 2006: Estimate based on interpolation between data reported by national government. Reported data excluded. 105 percent greater than 100 percent. GoC=D+
- 2007: Estimate based on interpolation between data reported by national government. Reported data excluded. 105 percent greater than 100 percent. GoC=D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: Estimate based on interpolation between data reported by national government. Reported data excluded. 101 percent greater than 100 percent. GoC=D+
- 2012: Estimate based on coverage reported by national government. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. GoC=R+ D+
- 2013: Estimate based on interpolation between data reported by national government. Reported data excluded. 101 percent greater than 100 percent. GoC=D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - IPV1

BRA - IPV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	97
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	102
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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: 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.

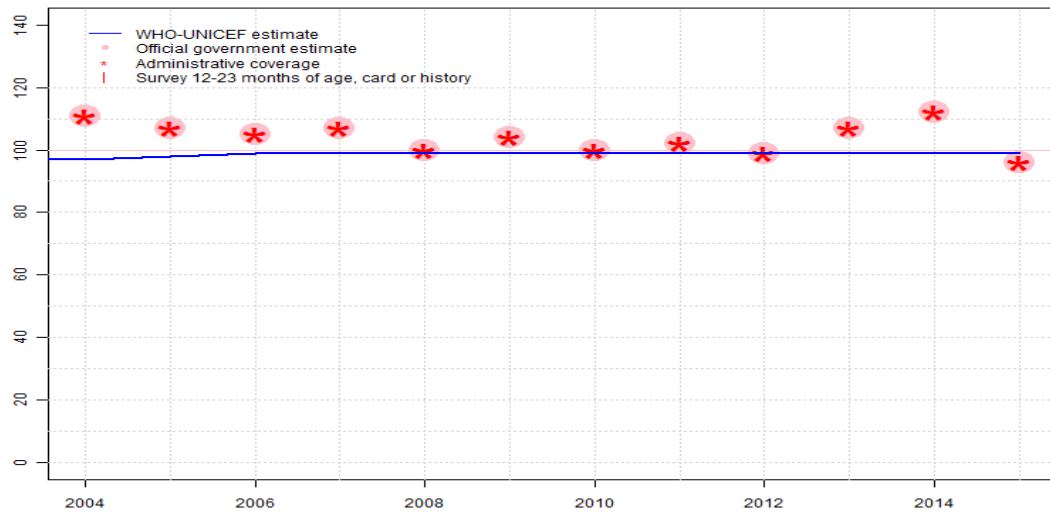
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2015: IPV introduced in 2012 and is recommended as part of a sequential schedule. Reported coverage is over 100 percent. Estimated coverage based on reported DTP1 coverage. Reported data excluded. 102 percent greater than 100 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. Estimate challenged by: R-

Brazil - MCV1

BRA - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	97	98	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●●
Official	111	107	105	107	100	104	100	102	99	107	112	96
Administrative	111	107	105	107	100	104	100	102	99	107	112	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- 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.

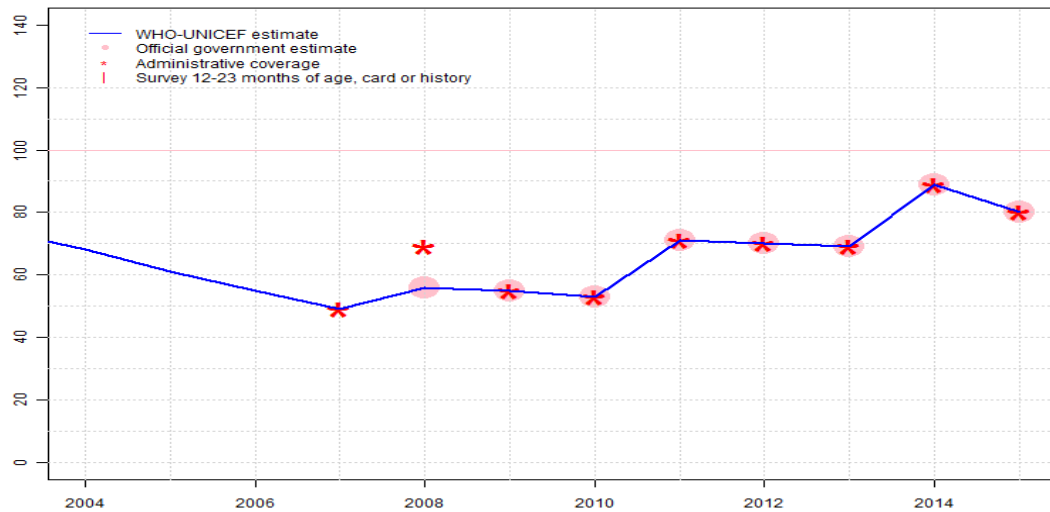
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on interpolation between data reported by national government. Reported data excluded. 111 percent greater than 100 percent. Estimate of 97 percent changed from previous revision value of 99 percent. GoC=D+
- 2005: Estimate based on interpolation between data reported by national government. Reported data excluded. 107 percent greater than 100 percent. Estimate of 98 percent changed from previous revision value of 99 percent. GoC=D+
- 2006: Estimate based on interpolation between data reported by national government. Reported data excluded. 105 percent greater than 100 percent. GoC=D+
- 2007: Estimate based on interpolation between data reported by national government. Reported data excluded. 107 percent greater than 100 percent. GoC=D+
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2010: Estimate based on coverage reported by national government. GoC=R+D+
- 2011: Estimate based on interpolation between data reported by national government. Reported data excluded. 102 percent greater than 100 percent. GoC=D+
- 2012: Estimate based on coverage reported by national government. Estimate of 99 percent changed from previous revision value of 97 percent. GoC=R+D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. 107 percent greater than 100 percent. Estimate of 99 percent changed from previous revision value of 97 percent. GoC=D+
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. 112 percent greater than 100 percent. Estimate of 99 percent changed from previous revision value of 97 percent. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Change in reported coverage from 112 level to 96 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. Program reports 1 month stockout of MMR vaccine. GoC=D+

Brazil - MCV2

BRA - MCV2



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	68	61	55	49	56	55	53	71	70	69	89	80
Estimate GoC	•	•	•	•	•	•	•	•	•	••	••	••
Official	NA	NA	NA	NA	56	55	53	71	70	69	89	80
Administrative	NA	NA	NA	49	69	55	53	71	70	69	89	80
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

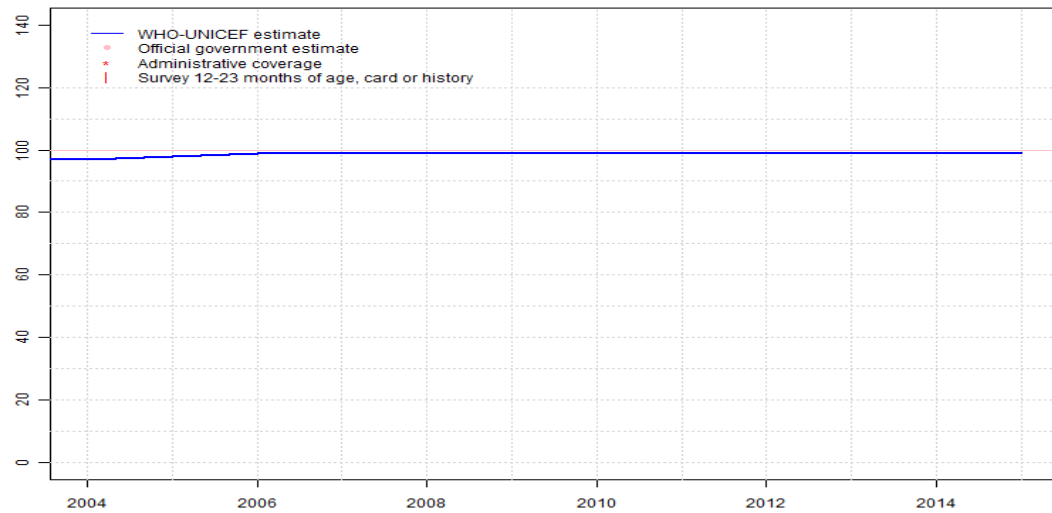
Description:

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

- 2004: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2005: Estimate based on interpolation between reported values. Estimate challenged by: D-
- 2006: Estimate based on interpolation between reported values. Estimate challenged by: D-
- 2007: Estimate based on reported administrative estimate. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Estimate of 71 percent changed from previous revision value of 75 percent. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government. Estimate of 70 percent changed from previous revision value of 96 percent. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government. Estimate of 69 percent changed from previous revision value of 99 percent. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. Estimate of 89 percent changed from previous revision value of 96 percent. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. Program reports 1 month stock-out of MMR vaccine. GoC=R+ D+

Brazil - RCV1

BRA - RCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	97	98	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

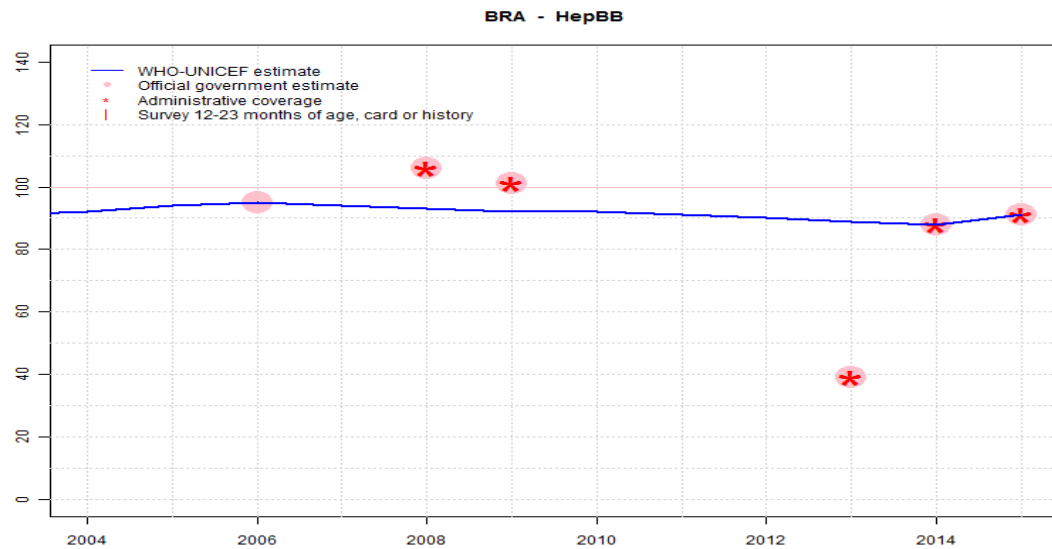
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

- 2004: Estimate based on estimated MCV1. GoC=D+
- 2005: Estimate based on estimated MCV1. GoC=D+
- 2006: Estimate based on estimated MCV1. GoC=D+
- 2007: Estimate based on estimated MCV1. GoC=D+
- 2008: Estimate based on estimated MCV1. GoC=R+ D+
- 2009: Estimate based on estimated MCV1. GoC=D+
- 2010: Estimate based on estimated MCV1. GoC=R+ D+
- 2011: Estimate based on estimated MCV1. GoC=D+
- 2012: Estimate based on estimated MCV1. GoC=R+ D+
- 2013: Estimate based on estimated MCV1. GoC=D+
- 2014: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2015: Estimate based on estimated MCV1. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. Program reports 1 month stockout of MMR vaccine. GoC=D+

Brazil - HepBB



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	92	94	95	94	93	92	92	91	90	89	88	91
Estimate GoC	•	•	••	•	••	••	•	•	•	•	••	••
Official	NA	NA	95	NA	106	101	NA	NA	NA	39	88	91
Administrative	NA	NA	NA	NA	106	101	NA	NA	NA	39	88	91
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

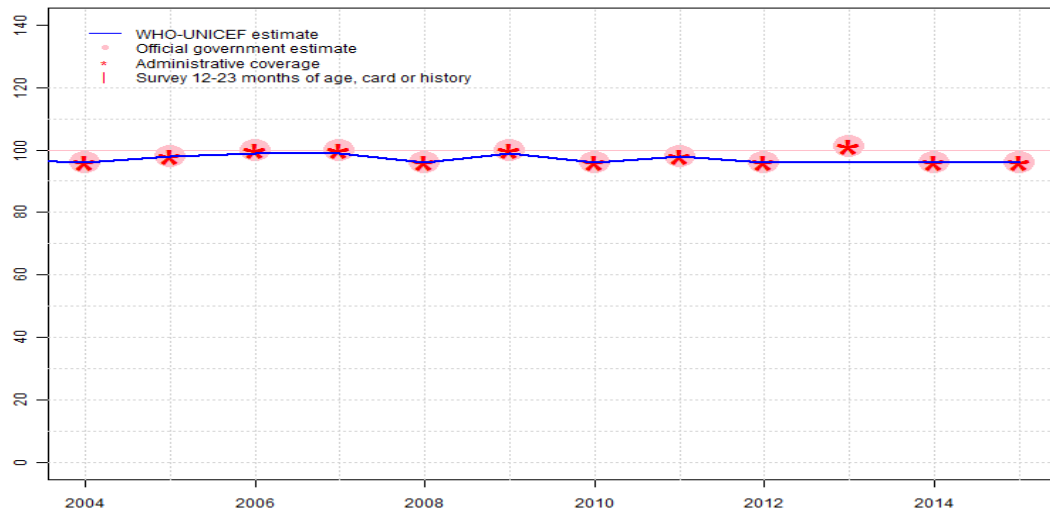
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2005: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2006: Estimate based on coverage reported by national government. GoC=R+
- 2007: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2008: Estimate based on interpolation between reported values. Reported data excluded. 106 percent greater than 100 percent. GoC=D+
- 2009: Estimate based on interpolation between reported values. Reported data excluded. 101 percent greater than 100 percent. GoC=D+
- 2010: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2011: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2012: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2013: Estimate based on interpolation between reported values. Reported data excluded. Reported coverage level is an artifact of reporting. The HepB birth dose data field was changed in the information system during 2013. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Recovery in reported coverage level reflects successful revisions in the information system. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - HepB3

BRA - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	96	98	99	99	96	99	96	98	96	96	96	96
Estimate GoC	●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	96	98	100	100	96	100	96	98	96	101	96	96
Administrative	96	98	100	100	96	100	96	98	96	101	96	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- 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.

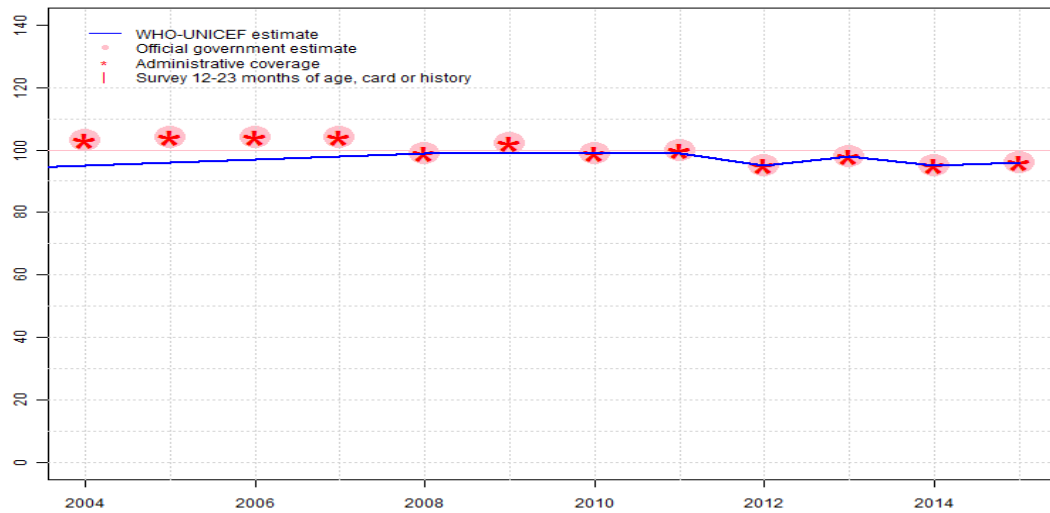
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government. GoC=R+ D+
- 2006: Estimate based on coverage reported by national government. GoC=R+ D+
- 2007: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on interpolation between data reported by national government. Reported data excluded. 101 percent greater than 100 percent. GoC=D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - Hib3

BRA - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	95	96	97	98	99	99	99	99	95	98	95	96
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	103	104	104	104	99	102	99	100	95	98	95	96
Administrative	103	104	104	104	99	102	99	100	95	98	95	96
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- 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.

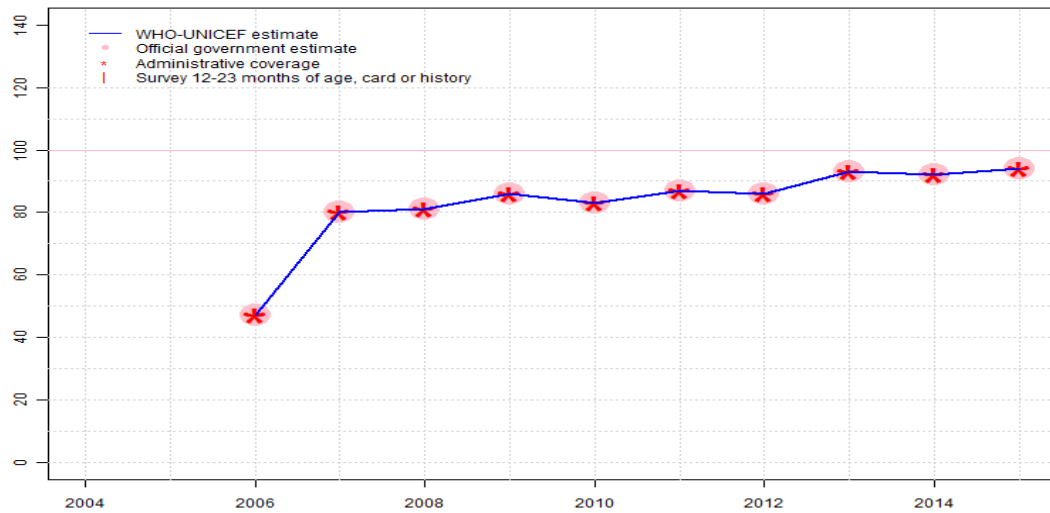
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on interpolation between reported values. Reported data excluded. 103 percent greater than 100 percent. GoC=D+
- 2005: Estimate based on interpolation between reported values. Reported data excluded. 104 percent greater than 100 percent. GoC=D+
- 2006: Estimate based on interpolation between reported values. Reported data excluded. 104 percent greater than 100 percent. Estimate of 97 percent changed from previous revision value of 96 percent. GoC=D+
- 2007: Estimate based on interpolation between reported values. Reported data excluded. 104 percent greater than 100 percent. Estimate of 98 percent changed from previous revision value of 97 percent. GoC=D+
- 2008: Estimate based on coverage reported by national government. Estimate of 99 percent changed from previous revision value of 98 percent. GoC=R+ D+
- 2009: Estimate based on interpolation between reported values. Reported data excluded. 102 percent greater than 100 percent. Estimate of 99 percent changed from previous revision value of 98 percent. GoC=D+
- 2010: Estimate based on coverage reported by national government. Estimate of 99 percent changed from previous revision value of 98 percent. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. Recommended vaccine schedule changed in 2012 from DTP-Hib and OPV to a sequential DTaP-Hib-IPV for first and second dose and DTP-Hib and OPV for the third dose. Estimate of 95 percent changed from previous revision value of 94 percent. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - RotaC

BRA - RotaC



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	47	80	81	86	83	87	86	93	92	94
Estimate GoC	NA	NA	••	••	••	••	••	••	••	••	••	••
Official	NA	NA	47	80	81	86	83	87	86	93	92	94
Administrative	NA	NA	47	80	81	86	83	87	86	93	92	94
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

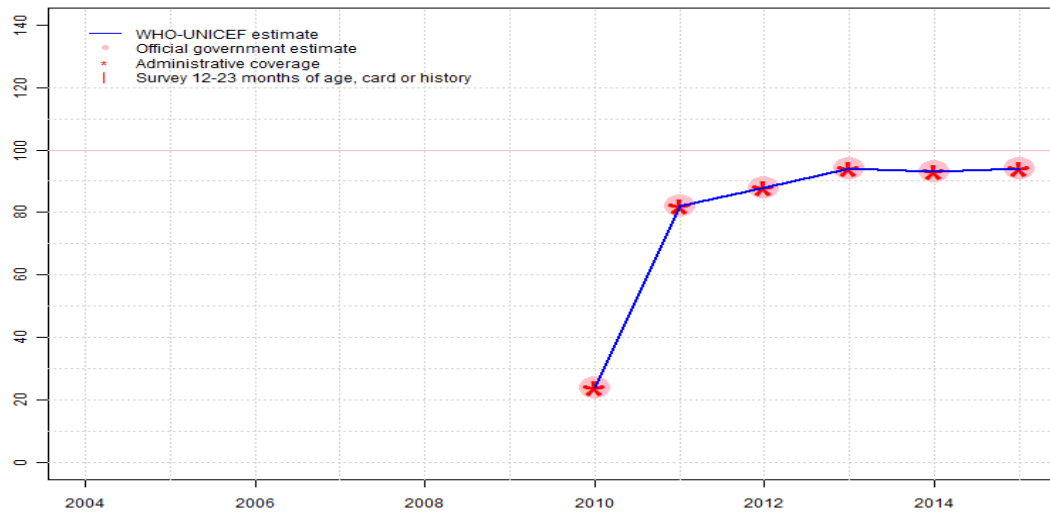
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2006: Estimate based on coverage reported by national government. Rota introduced in 2006. GoC=R+ D+
- 2007: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

Brazil - PcV3

BRA - PcV3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	24	82	88	94	93	94
Estimate GoC	NA	NA	NA	NA	NA	NA	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	24	82	88	94	93	94
Administrative	NA	NA	NA	NA	NA	NA	24	82	88	94	93	94
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Description:

- 2010: Estimate based on coverage reported by national government. Pneumococcal conjugate vaccine introduced in 2010. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=R+ D+

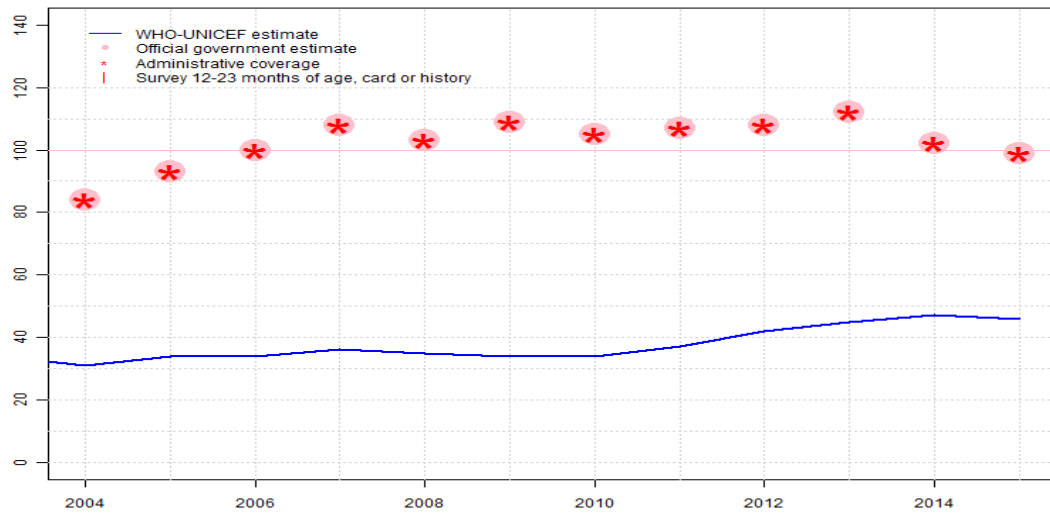
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Brazil - YFV

BRA - YFV



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	31	34	34	36	35	34	34	37	42	45	47	46
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	84	93	100	108	103	109	105	107	108	112	102	99
Administrative	84	93	100	108	103	109	105	107	108	112	102	99
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2004: Reported data calibrated to 2002 and 2005 levels. Estimate of 31 percent changed from previous revision value of 33 percent. GoC=Assigned by working group. .
- 2005: Twenty-seven percent of surviving infants living in yellow fever endemic areas. Ninety-two percent coverage achieved in these areas. No other areas were targeted. GoC=Assigned by working group. .
- 2006: Thirty-five percent of surviving infants living in yellow fever endemic areas. Ninety-nine percent coverage achieved in these areas. No other areas were targeted. GoC=Assigned by working group. .
- 2007: Thirty-five percent of surviving infants living in yellow fever endemic areas. One hundred and one percent coverage achieved in these areas. No other areas were targeted. Reported data excluded. 108 percent greater than 100 percent. GoC=Assigned by working group. .
- 2008: Thirty-five percent of surviving infants living in yellow fever endemic areas. Ninety-eight percent coverage achieved in these areas. No other areas were targeted. Reported data excluded. 103 percent greater than 100 percent. GoC=Assigned by working group. .
- 2009: Thirty-eight percent of surviving infants living in yellow fever endemic areas. Eighty-nine percent coverage achieved in these areas. No other areas were targeted. Reported data excluded. 109 percent greater than 100 percent. GoC=Assigned by working group. .
- 2010: Thirty-eight percent of surviving infants assumed to be living in yellow fever endemic areas based on 2009 information. No other areas were targeted. Reported data excluded. Reported data is based on subnational coverage for at-risk population sub groups. Reported data excluded. 105 percent greater than 100 percent. GoC=Assigned by working group. .
- 2011: Reported data calibrated to 2010 and 2012 levels. Reported data excluded. Reported data is based on subnational coverage for at-risk population sub groups. Reported data excluded. 107 percent greater than 100 percent. GoC=Assigned by working group. .
- 2012: Forty six percent of surviving infants living in yellow fever endemic areas. Reported data excluded. Reported data is based on subnational coverage for at-risk population sub groups. Reported data excluded. 108 percent greater than 100 percent. GoC=Assigned by working group. .
- 2013: Reported data calibrated to 2012 and 2014 levels. Reported data excluded. 112 percent greater than 100 percent. Estimate of 45 percent changed from previous revision value of 44 percent. GoC=Assigned by working group. .
- 2014: Programme reports 102 percent coverage in 46 percent of the national target population. Estimate is based on coverage achieved in the total annual national target population. Reported data excluded. 102 percent greater than 100 percent. Estimate of 47 percent changed from previous revision

Brazil - YFV

value of 45 percent. GoC=Assigned by working group. .

2015: Reported coverage of 99 percent in 46 percent of the national target population. Estimate is based on coverage achieved in the total annual national target population. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Reported data are preliminary. GoC=Assigned by working group. .

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

Brazil

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 receives 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.

The model was used in the mid to late 2000. Currently, the coverage series developed by the model is used as the baseline, and efforts are made to obtain data from all sources that include the JRF and reported trend over the years, routine PAB reporting and its trend over the years, data from surveys (DHS, MICS, EPI), whether countries have been validated for the attainment of maternal and neonatal tetanus elimination and what the TT coverage figures are from the survey etc and all the information is used to arrive at an estimate of the protection-at-birth from TT vaccination.

Year	PAB coverage estimate (%)
2004	78
2005	67
2006	92
2007	92
2008	92
2009	92
2010	92
2011	92
2012	93
2013	93
2014	93
2015	93

¹ 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.