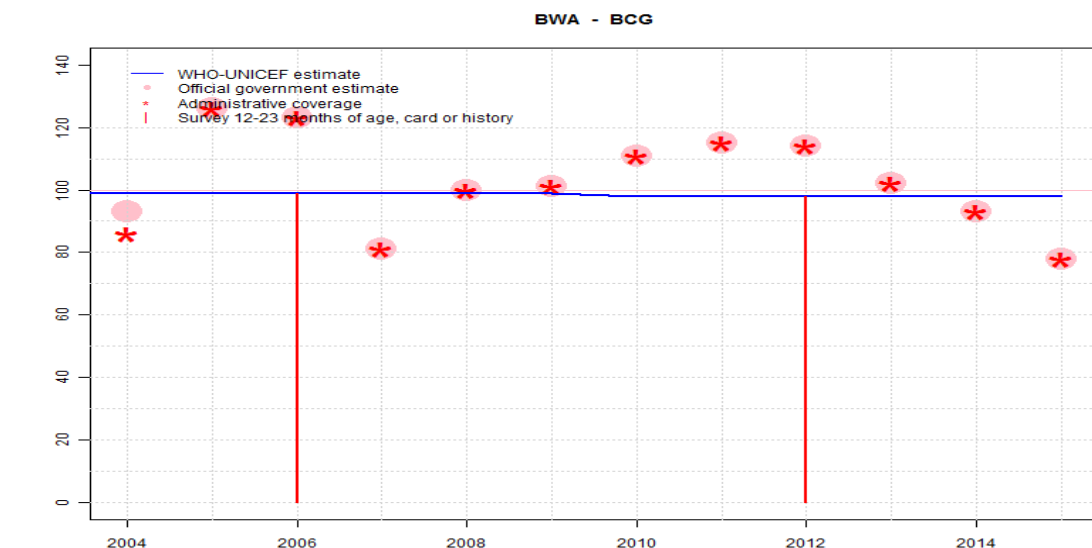


# Botswana - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	99	99	99	99	99	99	98	98	98	98	98	98
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	93	126	123	81	100	101	111	115	114	102	93	78
Administrative	86	126	123	81	100	101	111	115	114	102	93	78
Survey	NA	NA	99	NA	NA	NA	NA	NA	98	NA	NA	NA

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

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

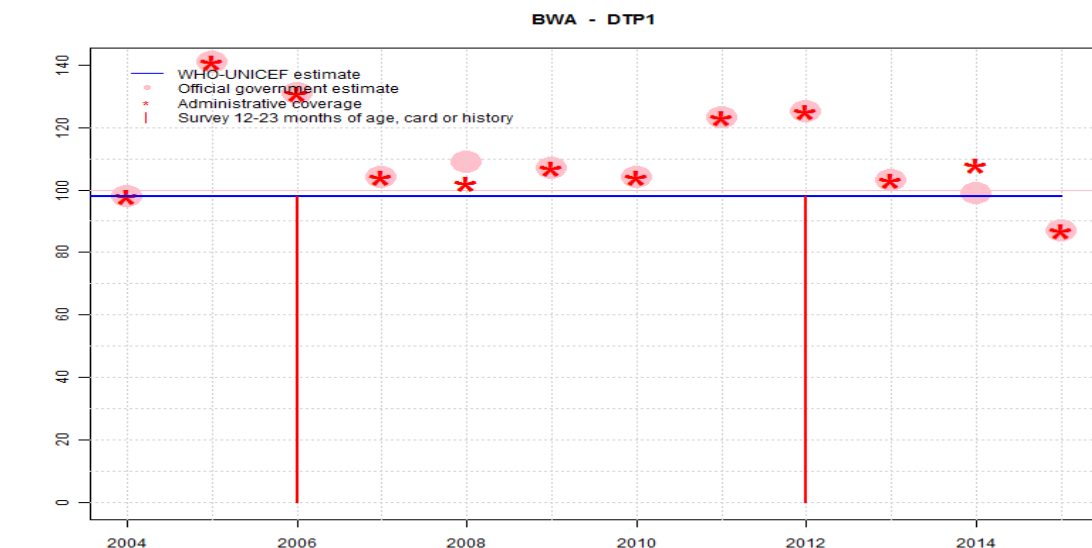
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2004: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2005: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 126 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2006: Estimate based on survey results. Reported data excluded. 123 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2007: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 123 percent to 81 percent with increase to 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2008: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2009: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 101 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2010: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 111 percent greater than 100 percent. GoC=Assigned by working group. Reported

- coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2011: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 115 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2012: Estimate based on survey results. Reported data excluded. 114 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. .Reported data excluded. 102 percent greater than 100 percent. Nationally reported data vary widely and exceed 100 percent for some antigens GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. . GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. .Reported data excluded. Change in reported coverage from 93 level to 78 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

# Botswana - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	98	98	98	98	98	98	98	98	98	98	98	98
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	98	141	131	104	109	107	104	123	125	103	99	87
Administrative	98	141	131	104	102	107	104	123	125	103	108	87
Survey	NA	NA	98	NA	NA	NA	NA	NA	98	NA	NA	NA

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

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

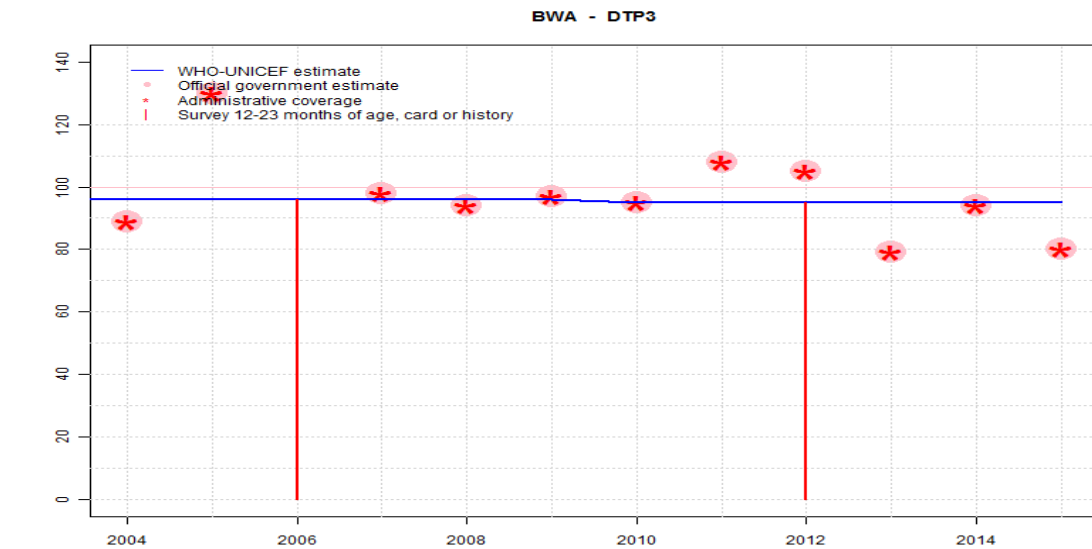
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2004: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2005: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 141 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2006: Estimate based on survey results. Reported data excluded. 131 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2007: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 104 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2008: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 109 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2009: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 107 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2010: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 104 percent greater than 100 percent. GoC=Assigned by working group. Reported

- coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2011: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 123 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2012: Estimate based on survey results. Reported data excluded. 125 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. .Reported data excluded. 103 percent greater than 100 percent. Nationally reported data vary widely and exceed 100 percent for some antigens GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. . GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. .Reported data excluded. Change in reported coverage from 99 level to 87 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

# Botswana - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	96	96	96	96	96	96	95	95	95	95	95	95
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	89	130	150	98	94	97	95	108	105	79	94	80
Administrative	89	130	150	98	94	97	95	108	105	79	94	80
Survey	NA	NA	96	NA	NA	NA	NA	NA	95	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.

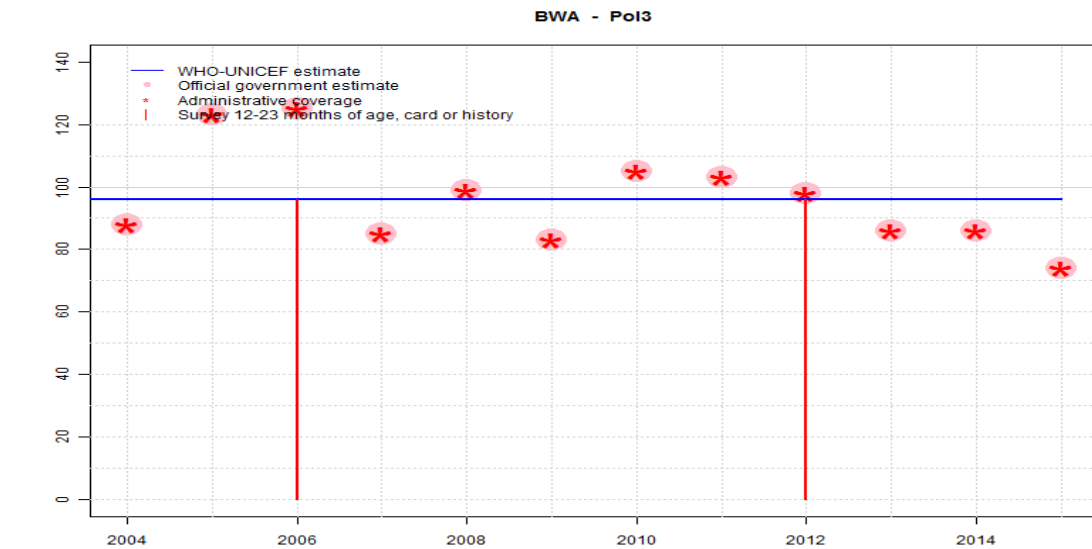
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2005: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 130 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2006: Estimate based on survey results. Reported data excluded. 150 percent greater than 100 percent. Reported data excluded. Unexplained increase from 130 percent to 150 percent with decrease 98 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2007: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2008: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2009: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2010: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

- 2011: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 108 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2012: Estimate based on survey results. Reported data excluded. 105 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. .Reported data excluded. Decline in reported coverage from 105 percent to 79 percent with increase to 94 percent. Nationally reported data vary widely and exceed 100 percent for some antigens GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. .Reported data excluded. Unexplained increase from 79 percent to 94 percent with decrease 80 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. .Reported data excluded. Change in reported coverage from 94 level to 80 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	96	96	96	96	96	96	96	96	96	96	96	96
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	88	123	125	85	99	83	105	103	98	86	86	74
Administrative	88	123	125	85	99	83	105	103	98	86	86	74
Survey	NA	NA	96	NA	NA	NA	NA	NA	96	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 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2005: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 123 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2006: Estimate based on survey results. Reported data excluded. 125 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2007: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 125 percent to 85 percent with increase to 99 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2008: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Unexplained increase from 85 percent to 99 percent with decrease 83 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2009: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 99 percent to 83 percent with increase to 105 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2010: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting.



ing. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 105 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2011: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 103 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

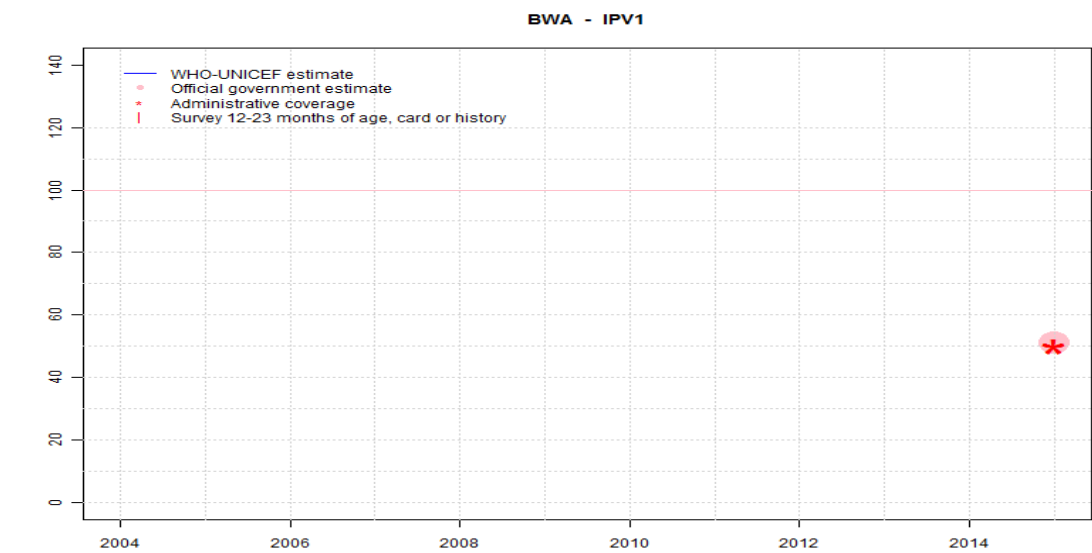
2012: Estimate based on survey results. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2013: Reported data calibrated to 2012 levels. Reported data excluded. . Nationally reported data vary widely and exceed 100 percent for some antigens GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2014: Reported data calibrated to 2012 levels. Reported data excluded. . Programme reports one month stock-out of polio vaccine. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2015: Reported data calibrated to 2012 levels. Reported data excluded. . Reported data excluded. Change in reported coverage from 86 level to 74 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

# Botswana - 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	8
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	51
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
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.

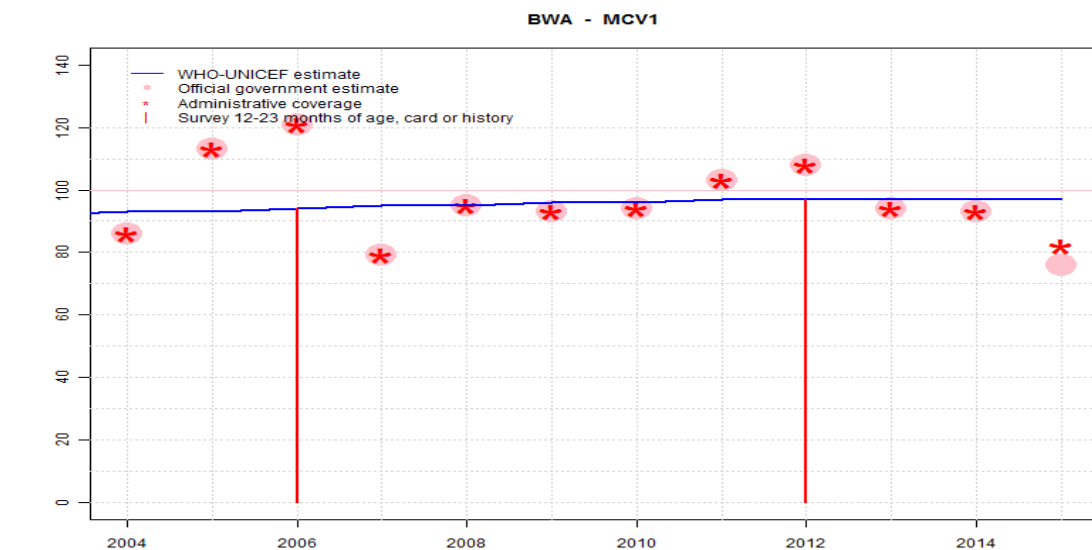
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 November 2015. Programme reports 50 percent coverage in 17 percent of target population. Estimate is based on coverage achieved in total annual national target population. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. Estimate challenged by: R-

# Botswana - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	93	93	94	95	95	96	96	97	97	97	97	97
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	86	113	121	79	95	93	94	103	108	94	93	76
Administrative	86	113	121	79	95	93	94	103	108	94	93	82
Survey	NA	NA	94	NA	NA	NA	NA	NA	97	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.

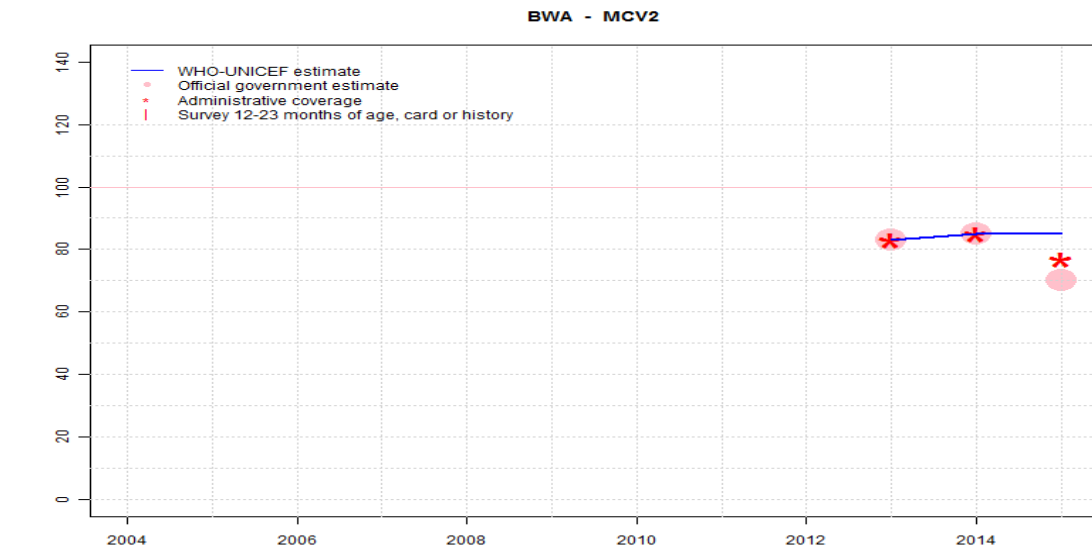
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2004: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2005: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 113 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2006: Estimate based on survey results. Reported data excluded. 121 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2007: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 121 percent to 79 percent with increase to 95 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2008: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2009: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2010: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

- 2011: Estimate based on interpolation between 2006 and 2012 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 103 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2012: Estimate based on survey results. Reported data excluded. 108 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. . Nationally reported data vary widely and exceed 100 percent for some antigens GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. . GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. .Reported data excluded. Change in reported coverage from 93 level to 76 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

# Botswana - MCV2



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	83	85	85
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	83	85	70
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	83	85	77
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:

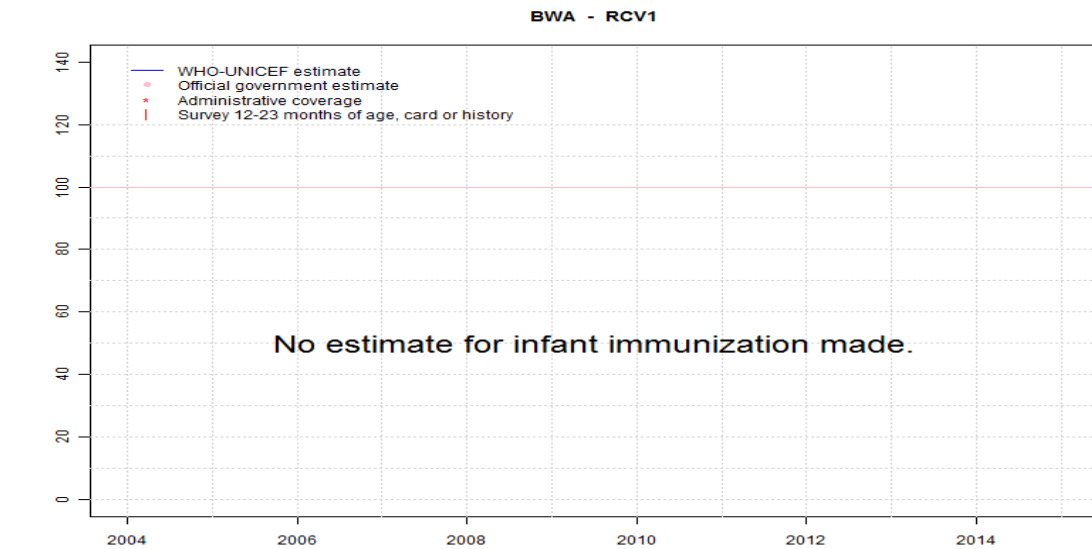
Coverage estimates for the second dose of measles containing vaccine are for children by the nationally recommended age.

2013: Estimate based on coverage reported by national government. Measles 2nd dose introduced in 2011, reporting started in 2013. Recommended age of administration is 18 months. GoC=Assigned by working group. Consistency with other antigens.

2014: Estimate based on coverage reported by national government. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.

2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Vaccine to vaccine consistency. Reported data excluded. Change in reported coverage from 85 level to 70 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.

# Botswana - RCV1

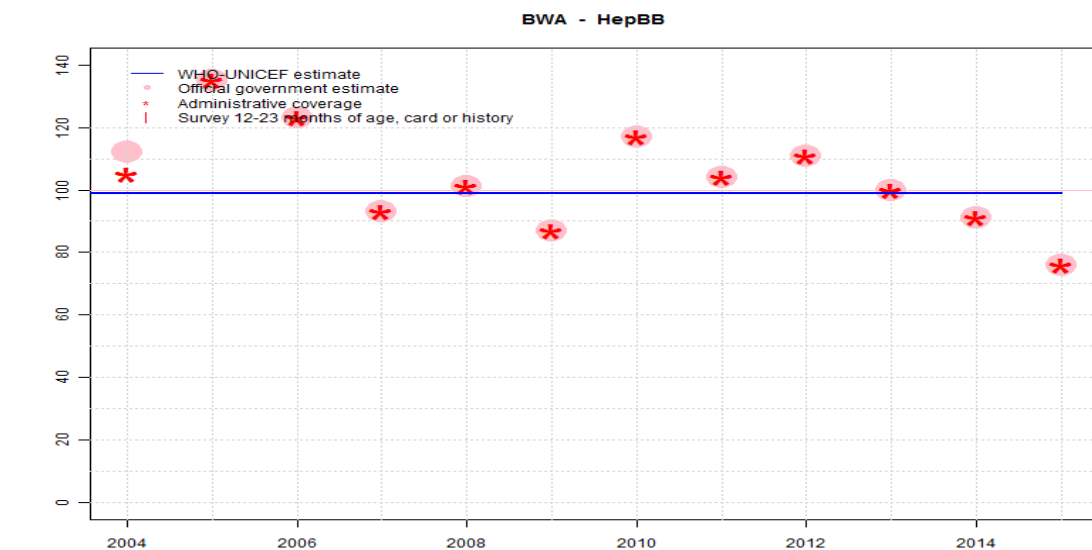


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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



	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	112	135	123	93	101	87	117	104	111	100	91	76
Administrative	105	135	123	93	101	87	117	104	111	100	91	76
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

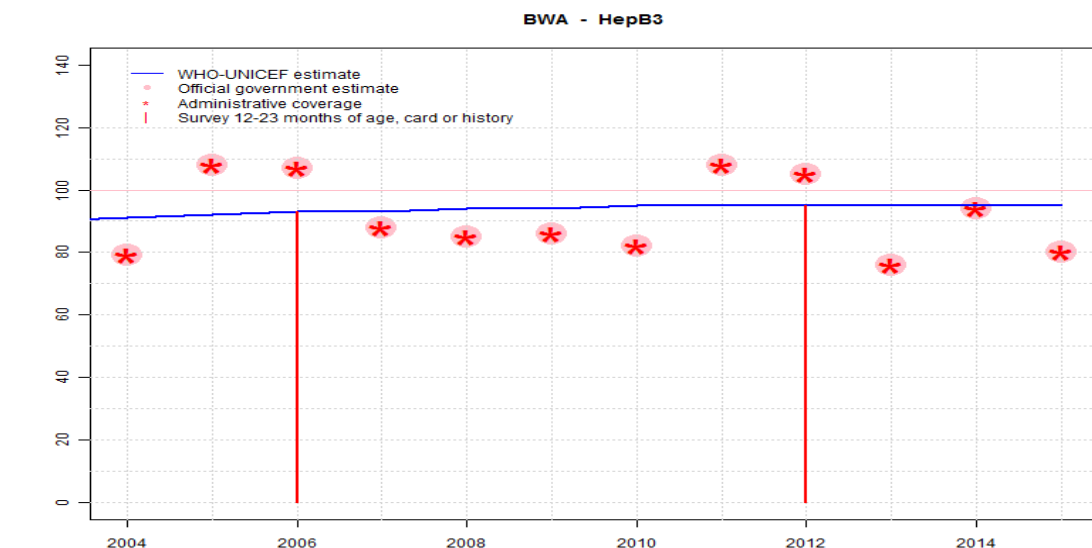
## Description:

- 2004: Reported data calibrated to 2006 levels. Reported data excluded. 112 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2005: Reported data calibrated to 2006 levels. Reported data excluded. 135 percent greater than 100 percent. Reported data excluded. Unexplained increase from 112 percent to 135 percent with decrease 123 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2006: HepB birth dose based on BCG coverage level. Reported data excluded. 123 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2007: Reported data calibrated to 2006 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Consistency with other antigens.
- 2008: Reported data calibrated to 2006 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 101 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2009: Reported data calibrated to 2006 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 101 percent to 87 percent with increase to 117 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2010: Reported data calibrated to 2006 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. 117 percent greater than 100 percent. Reported data excluded. Unexplained increase from 87 percent to 117 percent with decrease 104 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2011: Reported data calibrated to 2006 levels. Reported data excluded. 104 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2012: Reported data calibrated to 2006 levels. Reported data excluded. 111 percent greater than 100 percent. GoC=Assigned by working group. Consistency with other antigens.
- 2013: Reported data calibrated to 2006 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Consistency with other antigens.
- 2014: Reported data calibrated to 2006 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Consistency with other antigens.
- 2015: Reported data calibrated to 2006 levels. Reported data excluded. Nation-

ally reported data vary widely and exceed 100 percent for some antigen-  
sReported data excluded. Change in reported coverage from 91 level to  
76 percent. Decline in reported coverage appears to be an artifact of an  
increase in the target population from 2014 to 2015 combined with a slight  
decrease in the reported number of children vaccinated in 2015 compared  
to 2014 reported totals. GoC=Assigned by working group. Consistency  
with other antigens.



# Botswana - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	91	92	93	93	94	94	95	95	95	95	95	95
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	79	108	107	88	85	86	82	108	105	76	94	80
Administrative	79	108	107	88	85	86	82	108	105	76	94	80
Survey	NA	NA	93	NA	NA	NA	NA	NA	95	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 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2005: Estimate based on interpolation between 1999 and 2006 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. 108 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2006: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 93 percent based on 1 survey(s). Reported data excluded. 107 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2007: Estimate based on interpolation between 2006 and 2011 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2008: Estimate based on interpolation between 2006 and 2011 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2009: Estimate based on interpolation between 2006 and 2011 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2010: Estimate based on interpolation between 2006 and 2011 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.
- 2011: Based on DTP3 coverage Reported data excluded. 108 percent greater than

100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

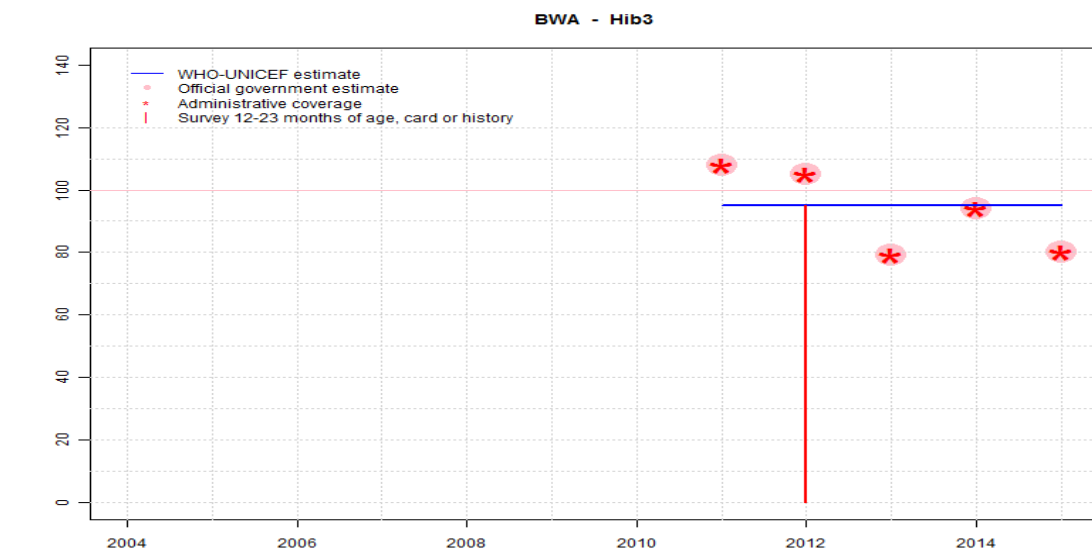
2012: Estimate based on survey results. Reported data excluded. 105 percent greater than 100 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2013: Reported data calibrated to 2012 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 105 percent to 76 percent with increase to 94 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2014: Reported data calibrated to 2012 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Unexplained increase from 76 percent to 94 percent with decrease 80 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

2015: Reported data calibrated to 2012 levels. Reported data excluded. Nationally reported data vary widely and exceed 100 percent for some antigens. Reported data excluded. Decline in reported coverage from 94 level to 80 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2006 and 2012 birth cohorts.

# Botswana - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	95	95	95	95	95
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	108	105	79	94	80
Administrative	NA	NA	NA	NA	NA	NA	NA	108	105	79	94	80
Survey	NA	NA	NA	NA	NA	NA	NA	NA	95	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.

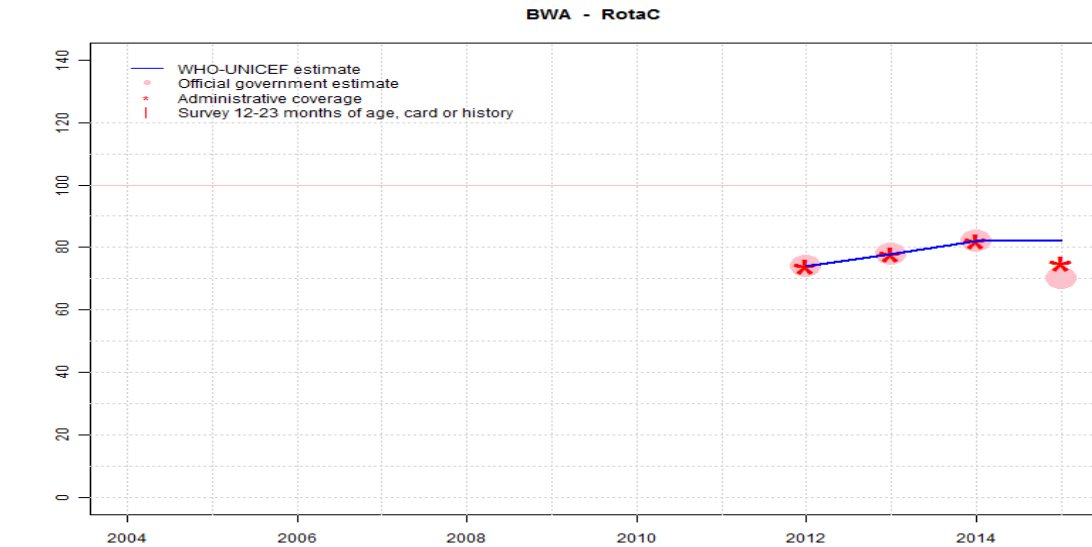
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2011: Based on DTP3 coverage Reported data excluded. 108 percent greater than 100 percent. Hib vaccine introduced in 2011. The presentation is DTP-HepB-Hib. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2012 birth cohort.
- 2012: Estimate based on survey results. Reported data excluded. 105 percent greater than 100 percent. Estimate of 95 percent changed from previous revision value of 96 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2012 birth cohort.
- 2013: Estimate based on survey results. Reported data excluded. Decline in reported coverage from 105 percent to 79 percent with increase to 94 percent. Estimate of 95 percent changed from previous revision value of 96 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2012 birth cohort.
- 2014: Estimate based on survey results. Reported data excluded. Unexplained increase from 79 percent to 94 percent with decrease 80 percent. Estimate of 95 percent changed from previous revision value of 96 percent. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2012 birth cohort.
- 2015: Estimate based on survey results. Reported data excluded. Decline in reported coverage from 94 level to 80 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. GoC=Assigned by working group. Reported coverage and denominator are inconsistent, and the estimate is confirmed only by survey for 2012 birth cohort.

# Botswana - RotaC



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	74	78	82	82
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	74	78	82	70
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	74	78	82	75
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.

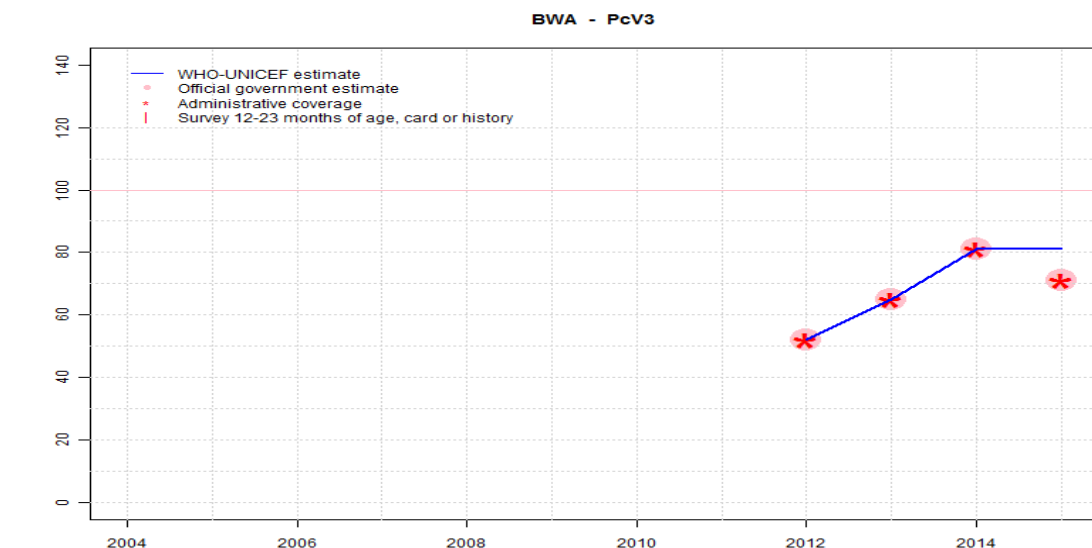
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2012: Estimate based on coverage reported by national government. Rotavirus vaccine was introduced in 2012. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.
- 2013: Estimate based on coverage reported by national government. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.
- 2014: Estimate based on coverage reported by national government. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Decline in reported coverage from 82 level to 70 percent. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.

# Botswana - PcV3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	52	65	81	81
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	52	65	81	71
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	52	65	81	71
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:

- 2012: Estimate based on coverage reported by national government. Pneumococcal conjugate vaccine was introduced in 2012. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.
- 2013: Estimate based on coverage reported by national government. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.
- 2014: Estimate based on coverage reported by national government. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Vaccine to vaccine consistency. Decline in reported coverage appears to be an artifact of an increase in the target population from 2014 to 2015 combined with a slight decrease in the reported number of children vaccinated in 2015 compared to 2014 reported totals. Estimate is exceptionally based on official reported coverage in the absence of recent survey data on which other estimated coverage levels are based. GoC=Assigned by working group. Consistency with other antigens.

# Botswana - survey details

## 2012 Botswana Post Measles Campaign and Immunization Coverage Survey 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	97	12-23 m	442	97
BCG	Card or History	98	12-23 m	456	97
DTP1	Card	96	12-23 m	442	97
DTP1	Card or History	98	12-23 m	456	97
DTP3	Card	93	12-23 m	442	97
DTP3	Card or History	95	12-23 m	456	97
HepB1	Card	96	12-23 m	442	97
HepB1	Card or History	98	12-23 m	456	97
HepB3	Card	93	12-23 m	442	97
HepB3	Card or History	95	12-23 m	456	97
Hib1	Card	96	12-23 m	442	97
Hib1	Card or History	98	12-23 m	456	97
Hib3	Card	93	12-23 m	442	97
Hib3	Card or History	95	12-23 m	456	97
MCV1	Card	94	12-23 m	442	97
MCV1	Card or History	97	12-23 m	456	97
Pol1	Card	96	12-23 m	442	97
Pol1	Card or History	98	12-23 m	456	97
Pol3	Card	94	12-23 m	442	97
Pol3	Card or History	96	12-23 m	456	97

## 2006 Botswana EPI Coverage Survey 2007

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	99	12-23 m	9083	98
DTP1	Card or History	98	12-23 m	9083	98
DTP3	Card or History	96	12-23 m	9083	98
HepB1	Card or History	97	12-23 m	9083	98

HepB3	Card or History	93	12-23 m	9083	98
MCV1	Card or History	94	12-23 m	9083	98
Pol1	Card or History	97	12-23 m	9083	98
Pol3	Card or History	96	12-23 m	9083	98

## 1999 Botswana Multiple Indicator Cluster Survey 2000, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99	12-23 m	618	84
BCG	Card	87	12-23 m	618	84
BCG	Card or History	99	12-23 m	618	84
BCG	History	12	12-23 m	618	84
DTP1	C or H <12 months	98	12-23 m	618	84
DTP1	Card	86	12-23 m	618	84
DTP1	Card or History	98	12-23 m	618	84
DTP1	History	12	12-23 m	618	84
DTP3	C or H <12 months	94	12-23 m	618	84
DTP3	Card	85	12-23 m	618	84
DTP3	Card or History	97	12-23 m	618	84
DTP3	History	12	12-23 m	618	84
MCV1	C or H <12 months	83	12-23 m	618	84
MCV1	Card	78	12-23 m	618	84
MCV1	Card or History	90	12-23 m	618	84
MCV1	History	12	12-23 m	618	84
Pol1	C or H <12 months	98	12-23 m	618	84
Pol1	Card	86	12-23 m	618	84
Pol1	Card or History	98	12-23 m	618	84
Pol1	History	12	12-23 m	618	84
Pol3	C or H <12 months	94	12-23 m	618	84
Pol3	Card	85	12-23 m	618	84
Pol3	Card or History	97	12-23 m	618	84
Pol3	History	12	12-23 m	618	84

Further information and estimates for previous years are available at:

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

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

## Botswana

### 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	83
2005	83
2006	84
2007	84
2008	85
2009	92
2010	92
2011	92
2012	92
2013	92
2014	92
2015	92

<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.