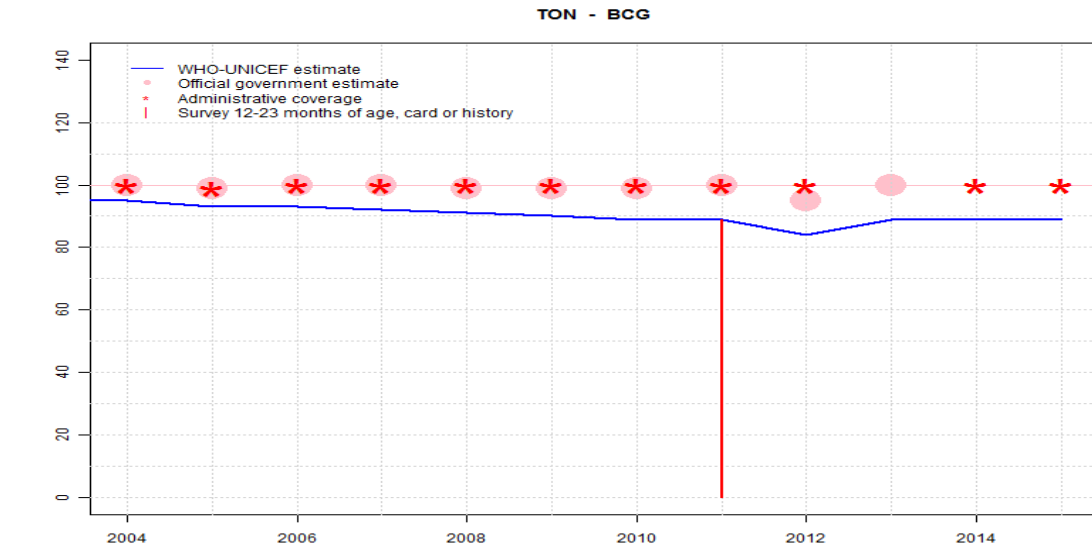


Tonga - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	95	93	93	92	91	90	89	89	84	89	89	89
Estimate GoC	••	••	••	••	••	••	•	•	•	••	•	•
Official	100	99	100	100	99	99	99	100	95	100	NA	NA
Administrative	100	99	100	100	100	100	100	100	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	89	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.

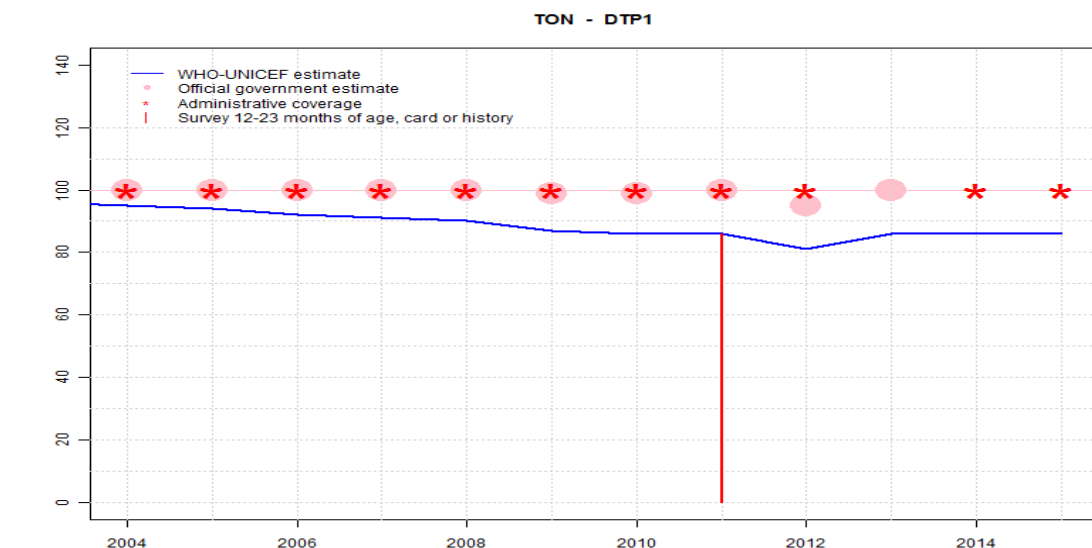
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 1998 and 2011 levels. GoC=D+
- 2005: Reported data calibrated to 1998 and 2011 levels. GoC=D+
- 2006: Reported data calibrated to 1998 and 2011 levels. GoC=D+
- 2007: Reported data calibrated to 1998 and 2011 levels. GoC=D+
- 2008: Reported data calibrated to 1998 and 2011 levels. GoC=D+
- 2009: Reported data calibrated to 1998 and 2011 levels. GoC=S+ D+
- 2010: Reported data calibrated to 1998 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 89 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=S+
- 2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	95	94	92	91	90	87	86	86	81	86	86	86
Estimate GoC	••	•	••	••	••	••	•	•	•	••	•	•
Official	100	100	100	100	100	99	99	100	95	100	NA	NA
Administrative	100	100	100	100	100	100	100	100	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	86	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.

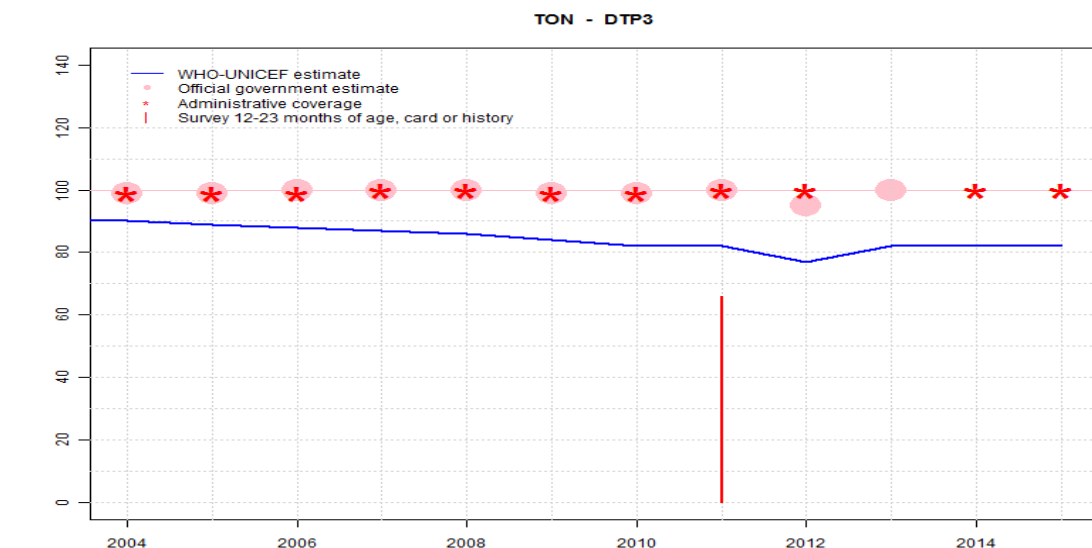
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 2000 and 2011 levels. GoC=D+
- 2005: Reported data calibrated to 2000 and 2011 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 2000 and 2011 levels. GoC=D+
- 2007: Reported data calibrated to 2000 and 2011 levels. GoC=D+
- 2008: Reported data calibrated to 2000 and 2011 levels. GoC=D+
- 2009: Reported data calibrated to 2000 and 2011 levels. GoC=S+ D+
- 2010: Reported data calibrated to 2000 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 86 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=S+
- 2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	90	89	88	87	86	84	82	82	77	82	82	82
Estimate GoC	•	•	••	••	••	••	••	•	•	••	•	•
Official	99	99	100	100	100	99	99	100	95	100	NA	NA
Administrative	99	99	99	100	100	99	99	100	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	66	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.

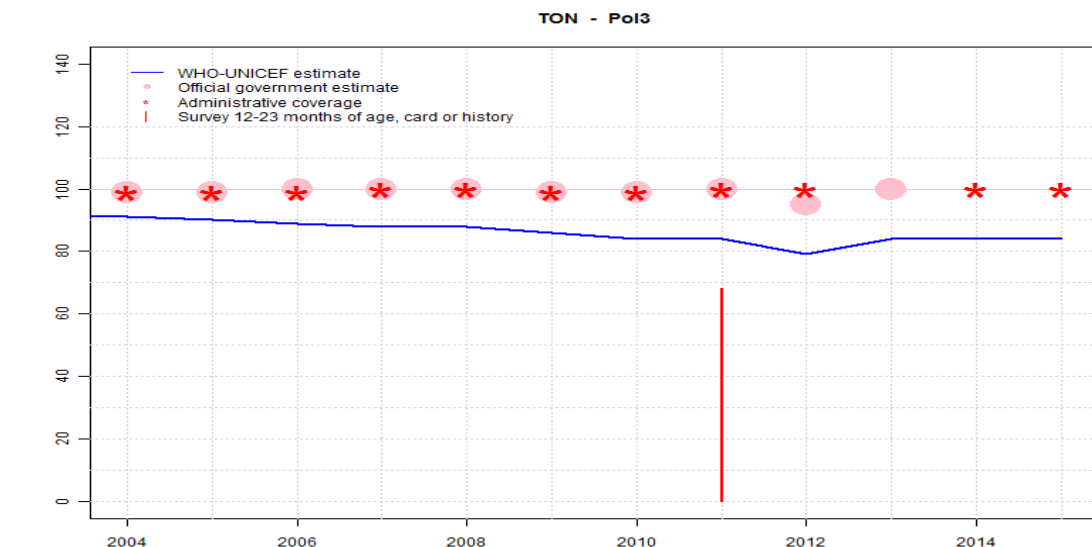
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 and 2011 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2007: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2008: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2009: Reported data calibrated to 1997 and 2011 levels. GoC=S+ D+
- 2010: Reported data calibrated to 1997 and 2011 levels. GoC=S+ D+
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 82 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 66 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 46 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=S+
- 2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - Pol3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	91	90	89	88	88	86	84	84	79	84	84	84
Estimate GoC	•	•	•	••	••	••	••	•	•	••	•	•
Official	99	99	100	100	100	99	99	100	95	100	NA	NA
Administrative	99	99	99	100	100	99	99	100	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	68	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.

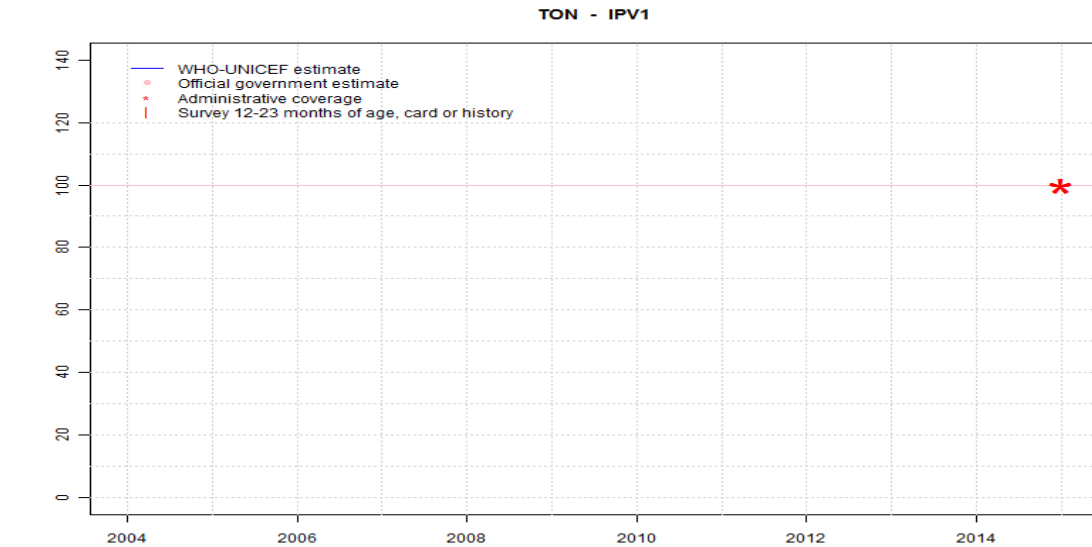
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 and 2011 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2008: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2009: Reported data calibrated to 1997 and 2011 levels. GoC=S+ D+
- 2010: Reported data calibrated to 1997 and 2011 levels. GoC=S+ D+
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 84 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 68 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 46 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=S+
- 2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - 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	3
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	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100
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.

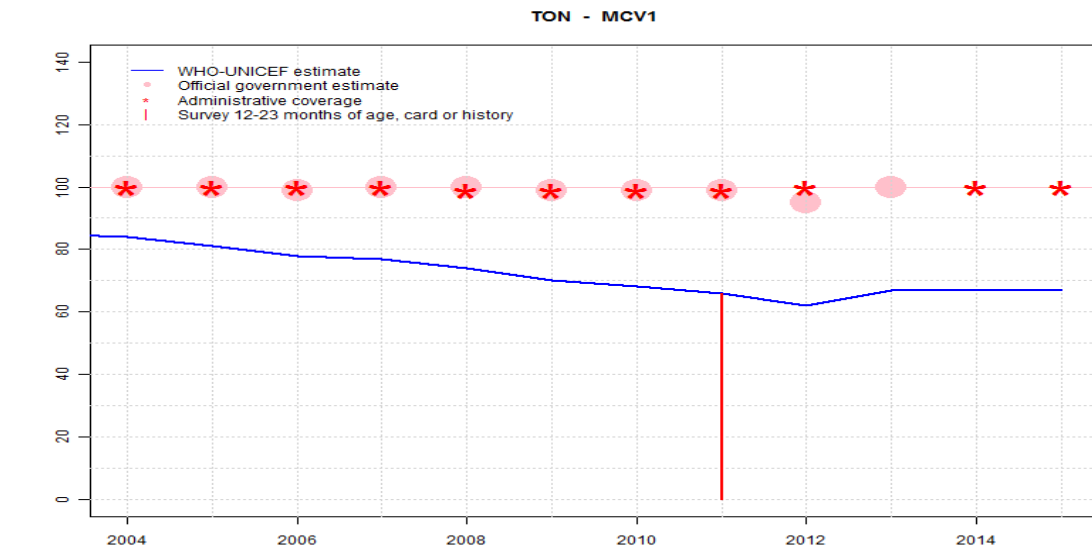
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 December 2015. Programme reports 100 percent coverage in three percent of the national target population. Estimate is based on coverage achieved in the total annual national population. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: R-

Tonga - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	84	81	78	77	74	70	68	66	62	67	67	67
Estimate GoC	••	•	•	•	•	•	•	•	•	••	•	•
Official	100	100	99	100	100	99	99	99	95	100	NA	NA
Administrative	100	100	100	100	99	99	99	99	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	66	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.

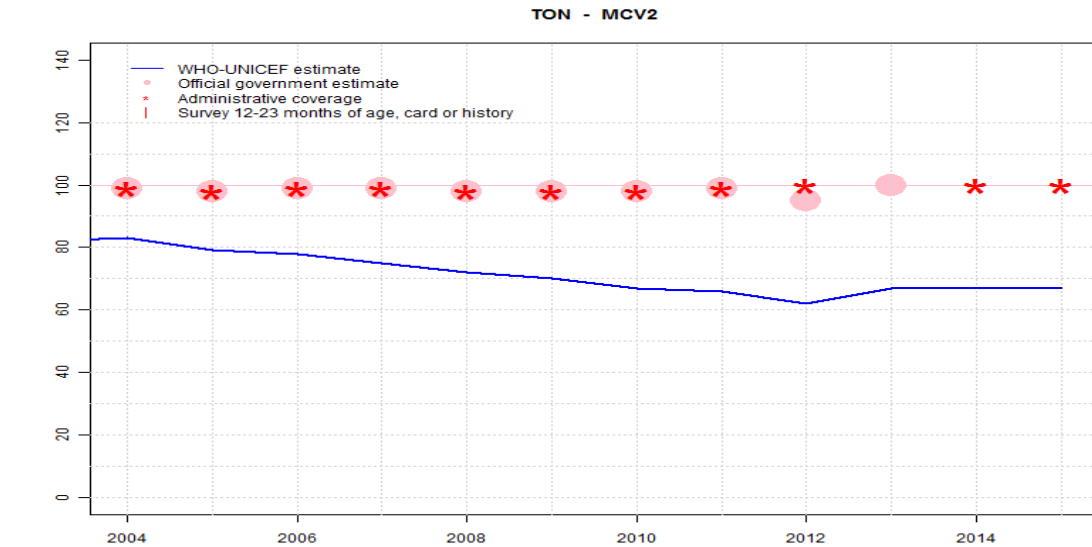
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 and 2011 levels. GoC=D+
- 2005: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2008: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2009: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2010: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 66 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=S+
- 2014: Reported data calibrated to 2011 levels. Estimate for MCV1 is likely underestimated slightly because the survey results reflect coverage for children aged 12-23 m at the time of survey while measles vaccine is recommended at 12 m. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - MCV2



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	83	79	78	75	72	70	67	66	62	67	67	67
Estimate GoC	●	●●	●●	●●	●	●	●	●	●	●	●	●
Official	99	98	99	99	98	98	98	99	95	100	NA	NA
Administrative	99	98	99	99	98	98	98	99	100	NA	100	100
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.

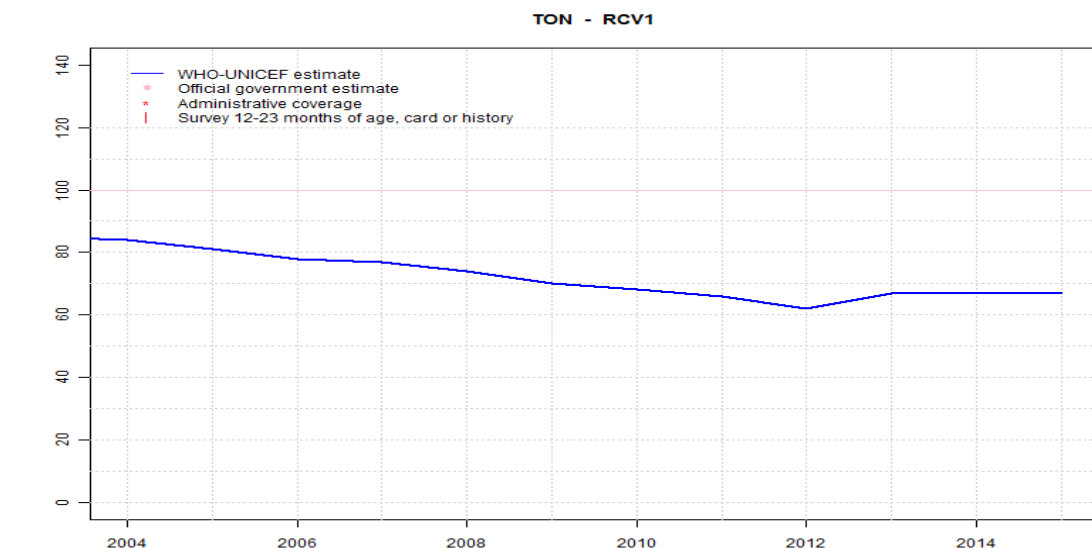
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 2003 and 2011 levels. GoC=D+
- 2006: Reported data calibrated to 2003 and 2011 levels. GoC=D+
- 2007: Reported data calibrated to 2003 and 2011 levels. GoC=D+
- 2008: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: D-
- 2009: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: D-
- 2010: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: D-
- 2011: Estimate is based on survey result for MCV1. Measles second dose is recommended at 18 m. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=No accepted empirical data
- 2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	84	81	78	77	74	70	68	66	62	67	67	67
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.

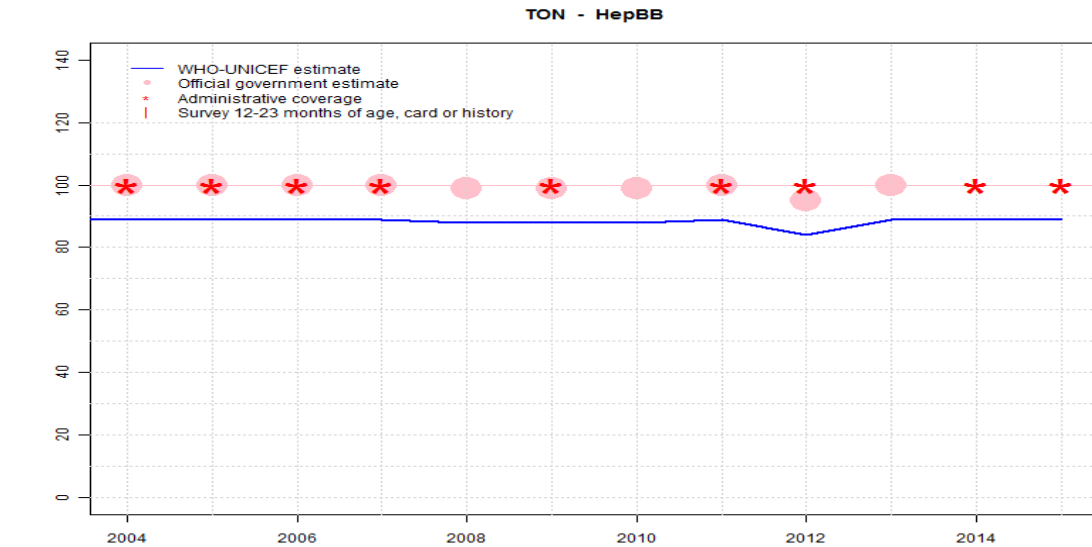
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

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. Estimate challenged by: D-
- 2006: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2007: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2008: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2009: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2010: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2011: Estimate based on estimated MCV1. Estimate challenged by: D-R-
- 2012: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2013: Estimate based on estimated MCV1. GoC=S+
- 2014: Estimate based on estimated MCV1. Estimate challenged by: D-
- 2015: Estimate based on estimated MCV1. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - HepBB



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	89	89	89	89	88	88	88	89	84	89	89	89
Estimate GoC	••	••	••	••	•	••	•	•	•	•	•	•
Official	100	100	100	100	99	99	99	100	95	100	NA	NA
Administrative	100	100	100	100	NA	100	NA	100	100	NA	100	100
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 2011 levels. GoC=D+

2005: Reported data calibrated to 2011 levels. GoC=D+

2006: Reported data calibrated to 2011 levels. GoC=D+

2007: Reported data calibrated to 2011 levels. GoC=D+

2008: Reported data calibrated to 2011 levels. GoC=No accepted empirical data

2009: Reported data calibrated to 2011 levels. GoC=D+

2010: Reported data calibrated to 2011 levels. GoC=No accepted empirical data

2011: Estimate is based on survey result for BCG. Estimate challenged by: D-R-

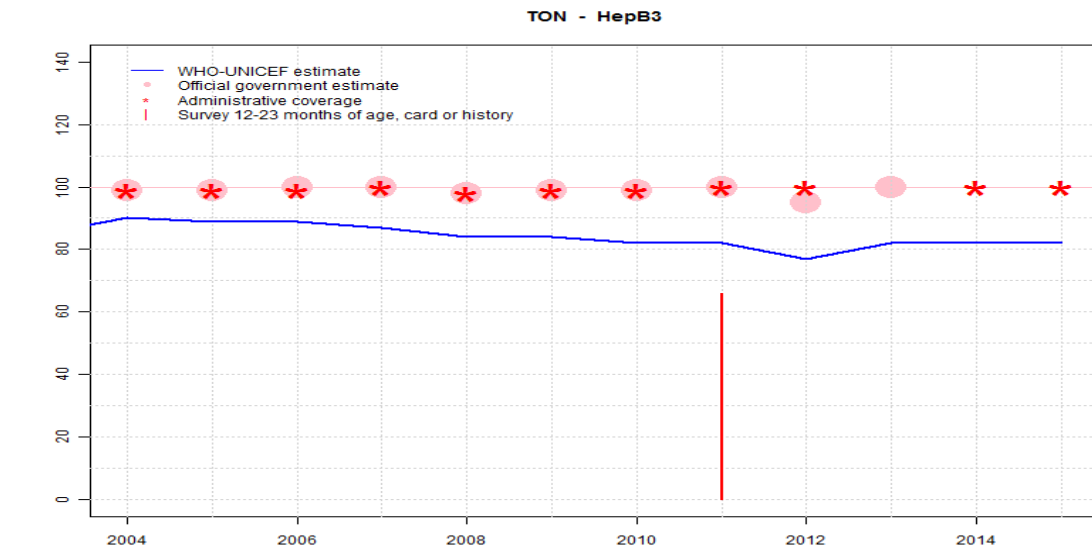
2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-

2013: Reported data calibrated to 2011 levels. GoC=No accepted empirical data

2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-

2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	90	89	89	87	84	84	82	82	77	82	82	82
Estimate GoC	•	•	•	••	••	••	••	•	•	••	•	•
Official	99	99	100	100	98	99	99	100	95	100	NA	NA
Administrative	99	99	99	100	98	99	99	100	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	66	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.

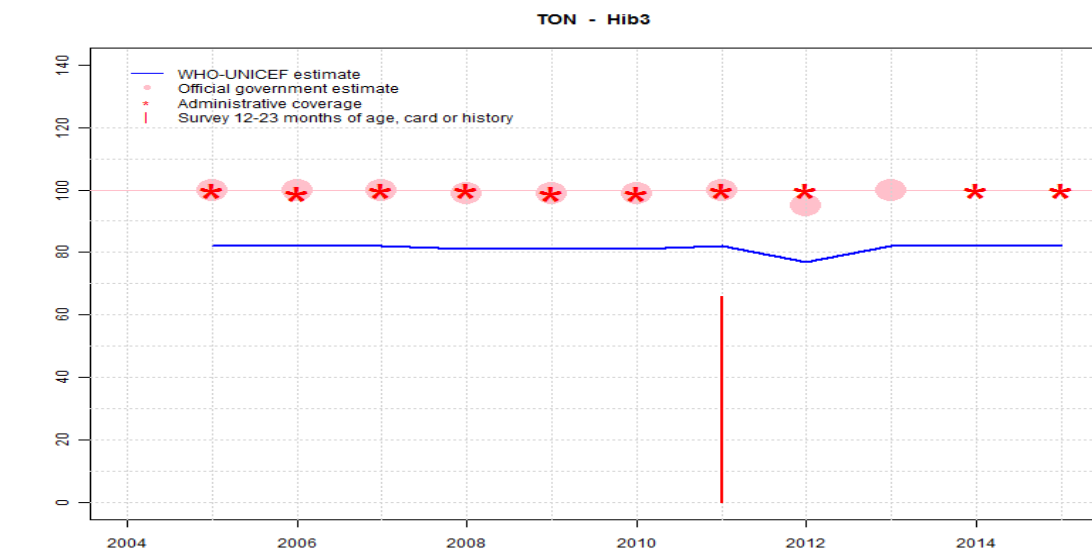
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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 and 2011 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2008: Reported data calibrated to 1997 and 2011 levels. GoC=D+
- 2009: Reported data calibrated to 1997 and 2011 levels. GoC=S+ D+
- 2010: Reported data calibrated to 1997 and 2011 levels. GoC=S+ D+
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 82 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 66 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 46 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. GoC=S+
- 2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-

Tonga - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	82	82	82	81	81	81	82	77	82	82	82
Estimate GoC	NA	•	••	••	••	••	•	•	•	••	•	•
Official	NA	100	100	100	99	99	99	100	95	100	NA	NA
Administrative	NA	100	99	100	100	99	99	100	100	NA	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	66	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:

2005: Reported data calibrated to 2011 levels. Hib vaccine introduced in 2005.

Vaccine presentation is DTP-Hib. Estimate challenged by: D-

2006: Reported data calibrated to 2011 levels. GoC=D+

2007: Reported data calibrated to 2011 levels. GoC=D+

2008: Reported data calibrated to 2011 levels. GoC=D+

2009: Reported data calibrated to 2011 levels. GoC=S+ D+

2010: Reported data calibrated to 2011 levels. Estimate challenged by: D-

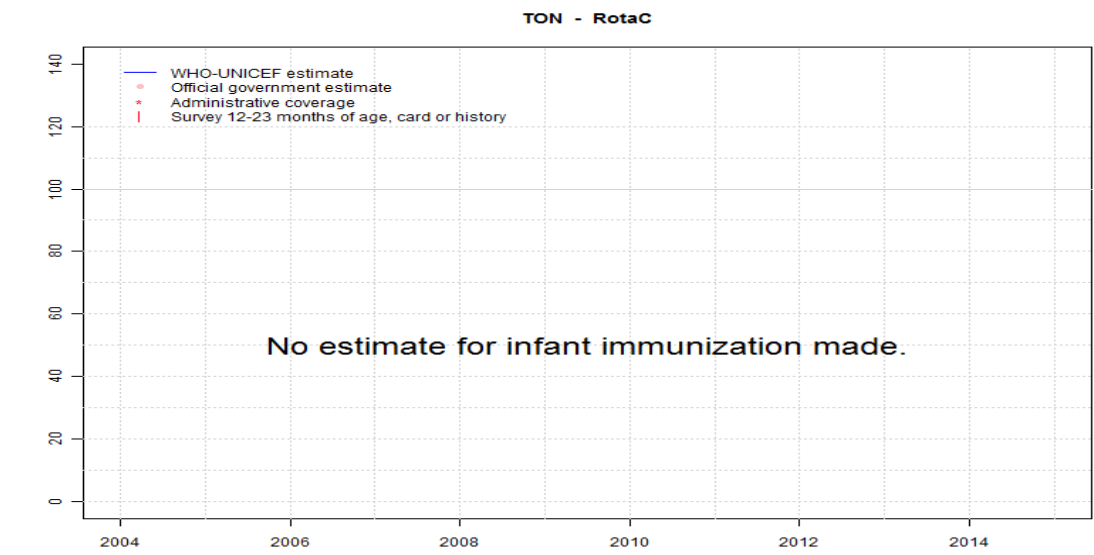
2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 82 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 66 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 46 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2011 levels. Estimate challenged by: D-

2013: Reported data calibrated to 2011 levels. GoC=S+

2014: Reported data calibrated to 2011 levels. Estimate challenged by: D-

2015: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the Demographic and Health Survey for the 2011 birth cohort. In a 2015 health sector review report, the Government notes their feeling that the home-based records seen during the survey may not have been up-to-date and their belief that caregiver recall of vaccination is inaccurate. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. Review of reported target population data suggest the use of dose-specific target population estimates for multi-dose vaccines. A review of the drop-out in the number of children vaccinated for DTPCV1 and DTPCV3 suggests differences of around 5 percent that are not reflected in reported coverage. Estimate challenged by: D-



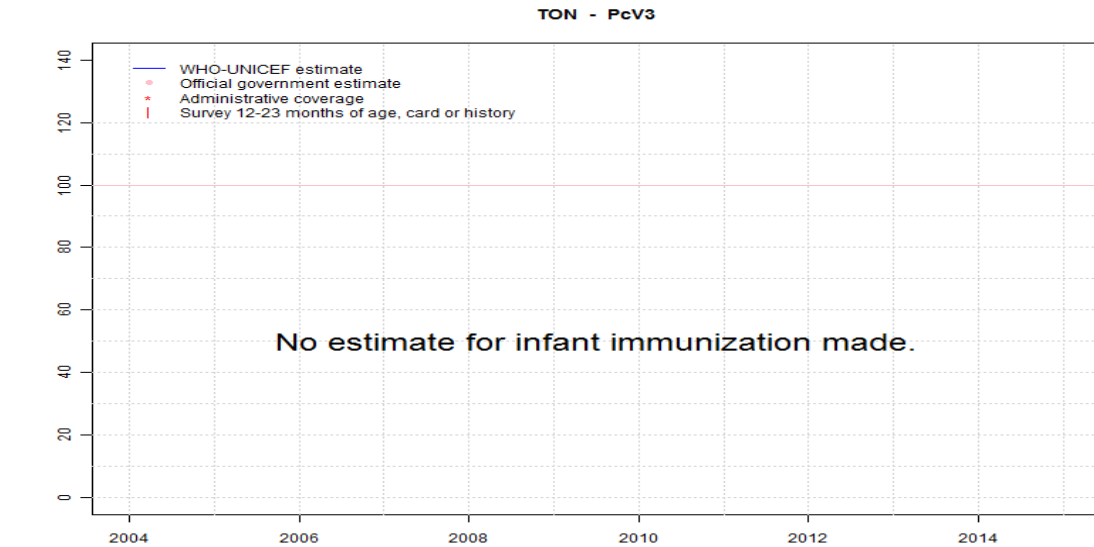
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Tonga - PcV3



	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.

Tonga - survey details

2011 Kingdom of Tonga Demographic and Health Survey 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	89	12-23 m	307	48
BCG	Card	48	12-23 m	148	48
BCG	Card or History	89	12-23 m	307	48
BCG	History	41	12-23 m	159	48
DTP1	C or H <12 months	86	12-23 m	307	48
DTP1	Card	48	12-23 m	148	48
DTP1	Card or History	86	12-23 m	307	48
DTP1	History	38	12-23 m	159	48
DTP3	C or H <12 months	65	12-23 m	307	48
DTP3	Card	46	12-23 m	148	48
DTP3	Card or History	66	12-23 m	307	48
DTP3	History	19	12-23 m	159	48
HepB1	C or H <12 months	86	12-23 m	307	48
HepB1	Card	48	12-23 m	148	48
HepB1	Card or History	86	12-23 m	307	48
HepB1	History	38	12-23 m	159	48
HepB3	C or H <12 months	65	12-23 m	307	48
HepB3	Card	46	12-23 m	148	48
HepB3	Card or History	66	12-23 m	307	48
HepB3	History	19	12-23 m	159	48
Hib1	C or H <12 months	86	12-23 m	307	48
Hib1	Card	48	12-23 m	148	48
Hib1	Card or History	86	12-23 m	307	48
Hib1	History	38	12-23 m	159	48
Hib3	C or H <12 months	65	12-23 m	307	48
Hib3	Card	46	12-23 m	148	48
Hib3	Card or History	66	12-23 m	307	48
Hib3	History	19	12-23 m	159	48
MCV1	C or H <12 months	4	12-23 m	307	48
MCV1	Card	30	12-23 m	148	48
MCV1	Card or History	66	12-23 m	307	48
MCV1	History	36	12-23 m	159	48
Pol1	C or H <12 months	88	12-23 m	307	48
Pol1	Card	48	12-23 m	148	48
Pol1	Card or History	88	12-23 m	307	48
Pol1	History	40	12-23 m	159	48
Pol3	C or H <12 months	67	12-23 m	307	48

Pol3	Card	46	12-23 m	148	48
Pol3	Card or History	68	12-23 m	307	48
Pol3	History	21	12-23 m	159	48

2010 Kingdom of Tonga Demographic and Health Survey 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	87	24-35 m	383	48
DTP1	C or H <12 months	83	24-35 m	383	48
DTP3	C or H <12 months	60	24-35 m	383	48
HepB1	C or H <12 months	83	24-35 m	383	48
HepB3	C or H <12 months	60	24-35 m	383	48
Hib1	C or H <12 months	83	24-35 m	383	48
Hib3	C or H <12 months	60	24-35 m	383	48
MCV1	C or H <12 months	2	24-35 m	383	48
Pol1	C or H <12 months	85	24-35 m	383	48
Pol3	C or H <12 months	61	24-35 m	383	48

2009 Kingdom of Tonga Demographic and Health Survey 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	85	36-47 m	334	48
DTP1	C or H <12 months	84	36-47 m	334	48
DTP3	C or H <12 months	59	36-47 m	334	48
HepB1	C or H <12 months	84	36-47 m	334	48
HepB3	C or H <12 months	59	36-47 m	334	48
Hib1	C or H <12 months	84	36-47 m	334	48
Hib3	C or H <12 months	59	36-47 m	334	48
MCV1	C or H <12 months	2	36-47 m	334	48
Pol1	C or H <12 months	84	36-47 m	334	48
Pol3	C or H <12 months	60	36-47 m	334	48

2008 Kingdom of Tonga Demographic and Health Survey 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	85	48-59 m	302	48
DTP1	C or H <12 months	81	48-59 m	302	48

Tonga - survey details

DTP3	C or H <12 months	61	48-59 m	302	48
HepB1	C or H <12 months	81	48-59 m	302	48
HepB3	C or H <12 months	61	48-59 m	302	48
Hib1	C or H <12 months	81	48-59 m	302	48
Hib3	C or H <12 months	61	48-59 m	302	48
MCV1	C or H <12 months	6	48-59 m	302	48
Pol1	C or H <12 months	83	48-59 m	302	48
Pol3	C or H <12 months	61	48-59 m	302	48

Tonga, 2003

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87	12-23 m	114	-
DTP3	Card or History	96	12-23 m	114	-
HepB3	Card or History	94	12-23 m	114	-
MCV1	Card or History	84	12-23 m	114	-
Pol3	Card or History	96	12-23 m	114	-

2002 Evaluation of Immunization Program of the Kingdom of

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