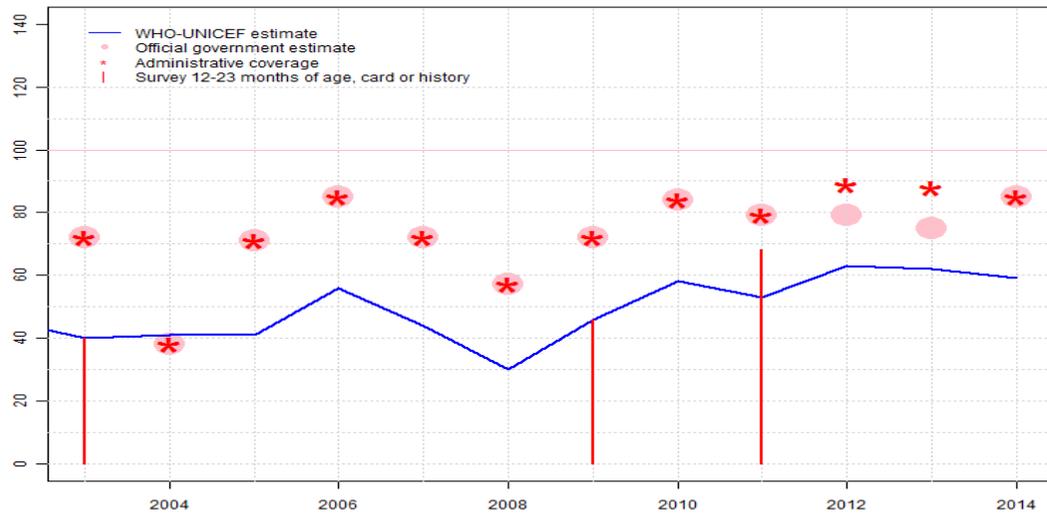


# Chad - BCG

TCD - BCG



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	40	41	41	56	44	30	46	58	53	63	62	59
Estimate GoC	•	•	••	••	••	•	•	•	•	•	•	•
Official	72	38	71	85	72	57	72	84	79	79	75	85
Administrative	72	38	71	85	72	57	72	84	79	89	88	85
Survey	40	NA	NA	NA	NA	NA	46	NA	68	NA	NA	NA

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

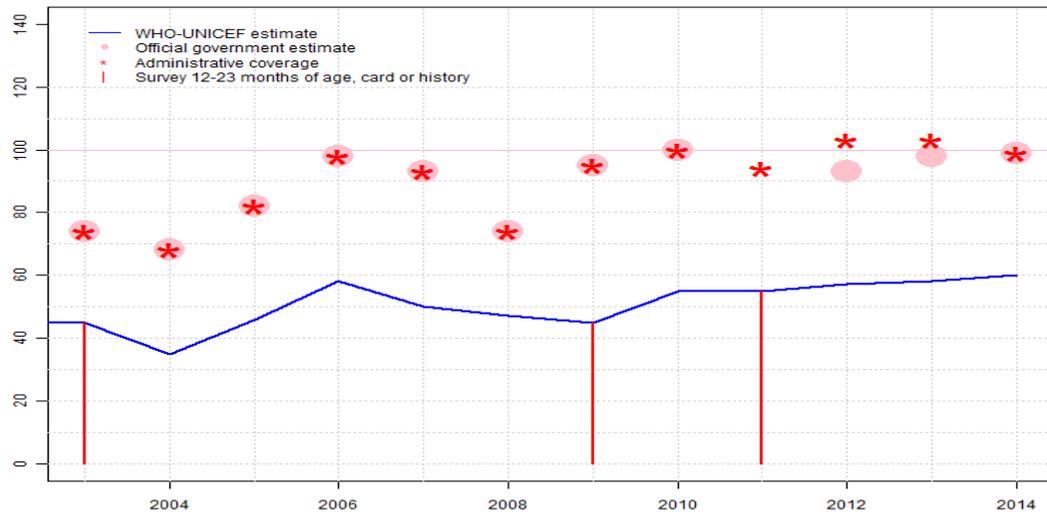
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

## Description:

- 2003: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 40 percent based on 1 survey(s). Estimate challenged by: R-
- 2004: Reported data calibrated to 2003 and 2009 levels. Reported data excluded. Decline in reported coverage from 72 percent to 38 percent with increase to 71 percent. Estimate challenged by: D-
- 2005: Reported data calibrated to 2003 and 2009 levels. GoC=S+ D+
- 2006: Reported data calibrated to 2003 and 2009 levels. Estimate follows reported data. GoC=D+
- 2007: Reported data calibrated to 2003 and 2009 levels. Estimate follows reported data. GoC=S+ D+
- 2008: Reported data calibrated to 2003 and 2009 levels. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate follows reported data. Estimate challenged by: D-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 46 percent based on 1 survey(s). Estimate follows reported data. Estimate challenged by: D-R-S-
- 2010: Reported data calibrated to 2009 levels. Estimate follows reported data. Estimate challenged by: D-S-
- 2011: Reported data calibrated to 2009 levels. Chad Vaccination Coverage Survey 2012 results ignored by working group. BCG card only coverage of 57 percent is inconsistent with card retention rate of 41 percent.. Estimate challenged by: D-S-
- 2012: Reported data calibrated to 2009 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-S-
- 2013: Reported data calibrated to 2009 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-S-
- 2014: Reported data calibrated to 2009 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. National programme reports 2 month stock-out at national level. Estimate challenged by: D-

TCD - DTP1



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	45	35	46	58	50	47	45	55	55	57	58	60
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	74	68	82	98	93	74	95	100	NA	93	98	99
Administrative	74	68	82	98	93	74	95	100	94	103	103	99
Survey	45	NA	NA	NA	NA	NA	45	NA	55	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

## Description:

- 2003: Estimate based on survey results. Reported data inconsistent with survey results. Estimate challenged by: R-
- 2004: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2008: Reported data calibrated to 2003 and 2009 levels. Reported data excluded. Decline in reported coverage from 93 percent to 74 percent with increase to 95 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate challenged by: D-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 45 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 55 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Reported data excluded. 103 percent greater than 100 percent. Government official estimate reflects an adjustment based on survey results. Estimate of 57 percent changed from previous revision value of 55 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Reported data excluded. 103 percent greater than 100 percent. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate of 58 percent changed from previous revision value of 55 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also

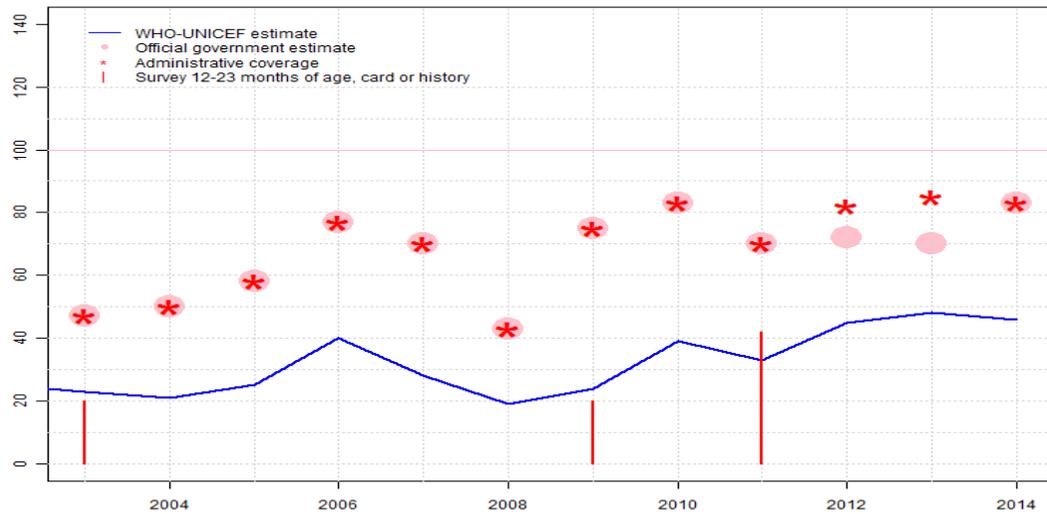
# Chad - DTP1

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increasing coverage. Estimate challenged by: D-

# Chad - DTP3

TCD - DTP3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	23	21	25	40	28	19	24	39	33	45	48	46
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	47	50	58	77	70	43	75	83	70	72	70	83
Administrative	47	50	58	77	70	43	75	83	70	82	85	83
Survey	20	NA	NA	NA	NA	NA	20	NA	42	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

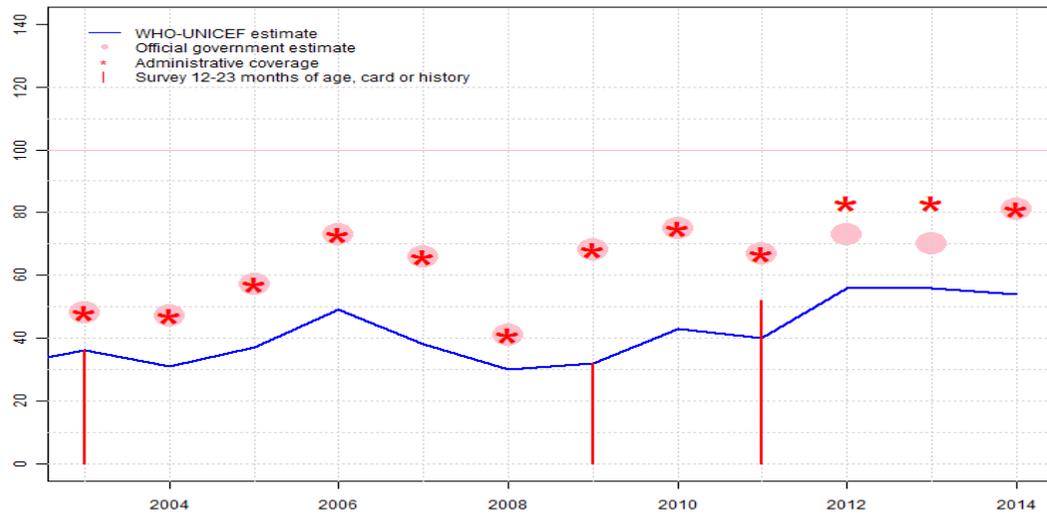
## Description:

- 2003: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 23 percent based on 1 survey(s). Chad Demographic and Health Survey 2004 card or history results of 20 percent modified for recall bias to 23 percent based on 1st dose card or history coverage of 45 percent, 1st dose card only coverage of 24 percent and 3d dose card only coverage of 12 percent. Estimate challenged by: D-R-
- 2004: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2008: Estimate reflects a 21 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data excluded. Decline in reported coverage from 70 percent to 43 percent with increase to 75 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 24 percent based on 1 survey(s). Chad Multiple Indicator Cluster Survey 2010 card or history results of 20 percent modified for recall bias to 24 percent based on 1st dose card or history coverage of 45 percent, 1st dose card only coverage of 19 percent and 3d dose card only coverage of 10 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 33 percent based on 1 survey(s). Chad Vaccination Coverage Survey 2012 card or history results of 42 percent modified for recall bias to 33 percent based on 1st dose card or history coverage of 55 percent, 1st dose card only coverage of 15 percent and 3d dose card only coverage of 9 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification

of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# Chad - Pol3

TCD - Pol3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	36	31	37	49	38	30	32	43	40	56	56	54
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	48	47	57	73	66	41	68	75	67	73	70	81
Administrative	48	47	57	73	66	41	68	75	67	83	83	81
Survey	36	NA	NA	NA	NA	NA	32	NA	52	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

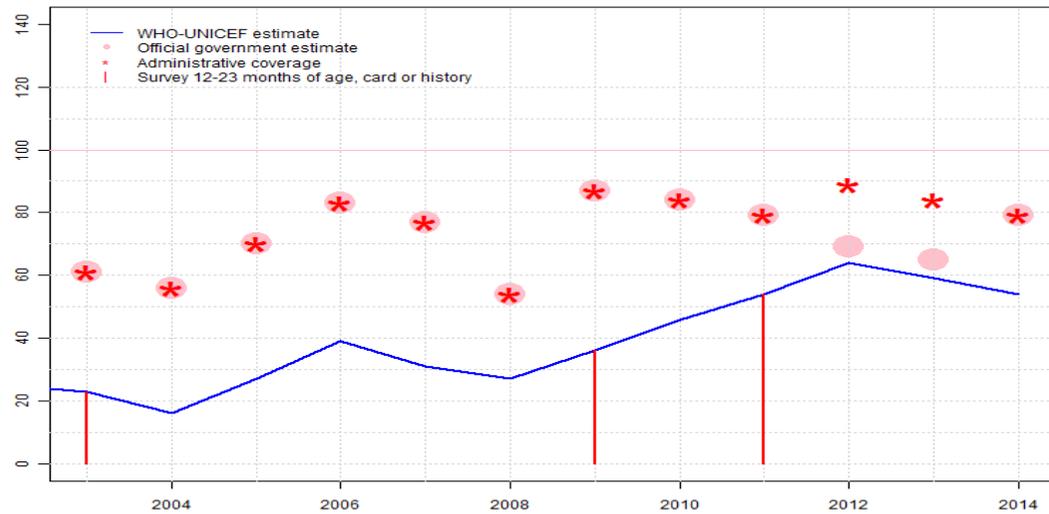
## Description:

- 2003: Reported data inconsistent with survey results. Estimate based on survey results. Recall bias not considered; adjusted results are inconsistent with results for other vaccines. Chad Demographic and Health Survey 2004 card or history results of 36 percent modified for recall bias to 41 percent based on 1st dose card or history coverage of 78 percent, 1st dose card only coverage of 23 percent and 3d dose card only coverage of 12 percent. Estimate challenged by: R-
- 2004: Reported data calibrated to 2003 and 2009 levels. GoC=Assigned by working group. Consistency with other antigens.
- 2005: Reported data calibrated to 2003 and 2009 levels. GoC=Assigned by working group. Consistency with other antigens.
- 2006: Reported data calibrated to 2003 and 2009 levels. GoC=Assigned by working group. Consistency with other antigens.
- 2007: Reported data calibrated to 2003 and 2009 levels. GoC=Assigned by working group. Consistency with other antigens.
- 2008: Estimate reflects a 20 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data excluded. Decline in reported coverage from 66 percent to 41 percent with increase to 68 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate challenged by: R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 32 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 40 percent based on 1 survey(s). Chad Vaccination Coverage Survey 2012 card or history results of 52 percent modified for recall bias to 40 percent based on 1st dose card or history coverage of 68 percent, 1st dose card only coverage of 17 percent and 3d dose card only coverage of 10 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed

by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# Chad - MCV1

TCD - MCV1



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	23	16	27	39	31	27	36	46	54	64	59	54
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	61	56	70	83	77	54	87	84	79	69	65	79
Administrative	61	56	70	83	77	54	87	84	79	89	84	79
Survey	23	NA	NA	NA	NA	NA	36	NA	54	NA	NA	NA

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

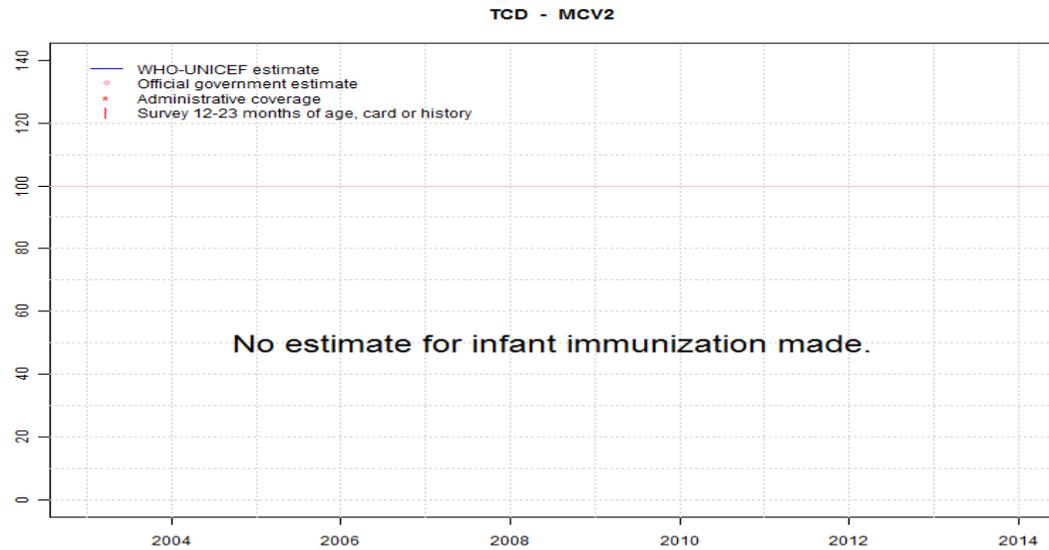
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

## Description:

- 2003: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 23 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2004: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2008: Estimate reflects a 11 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data excluded. Decline in reported coverage from 77 percent to 54 percent with increase to 87 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 36 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 54 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# Chad - MCV2



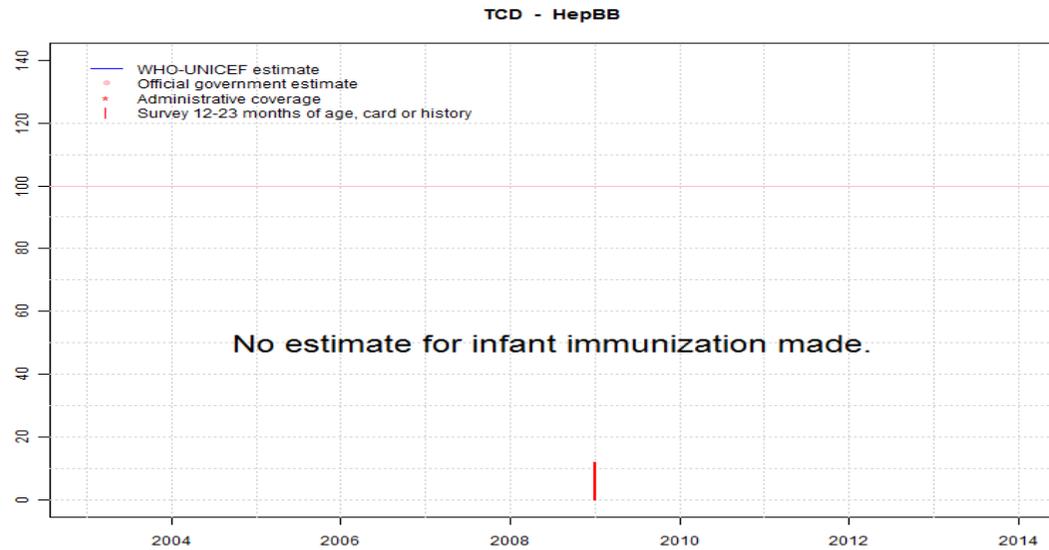
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

# Chad - HepBB



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA

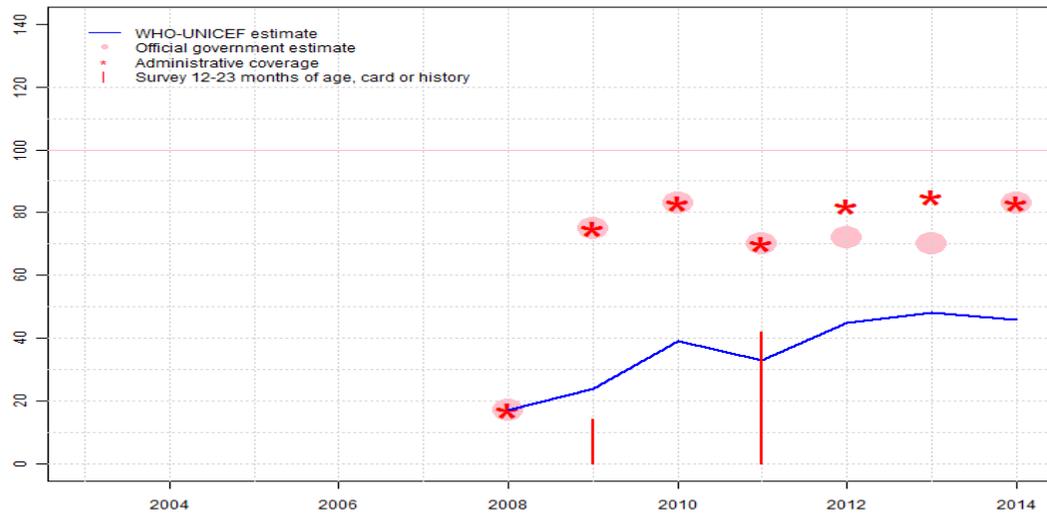
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

# Chad - HepB3

TCD - HepB3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA	NA	NA	NA	NA	17	24	39	33	45	48	46
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	17	75	83	70	72	70	83
Administrative	NA	NA	NA	NA	NA	17	75	83	70	82	85	83
Survey	NA	NA	NA	NA	NA	NA	14	NA	42	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

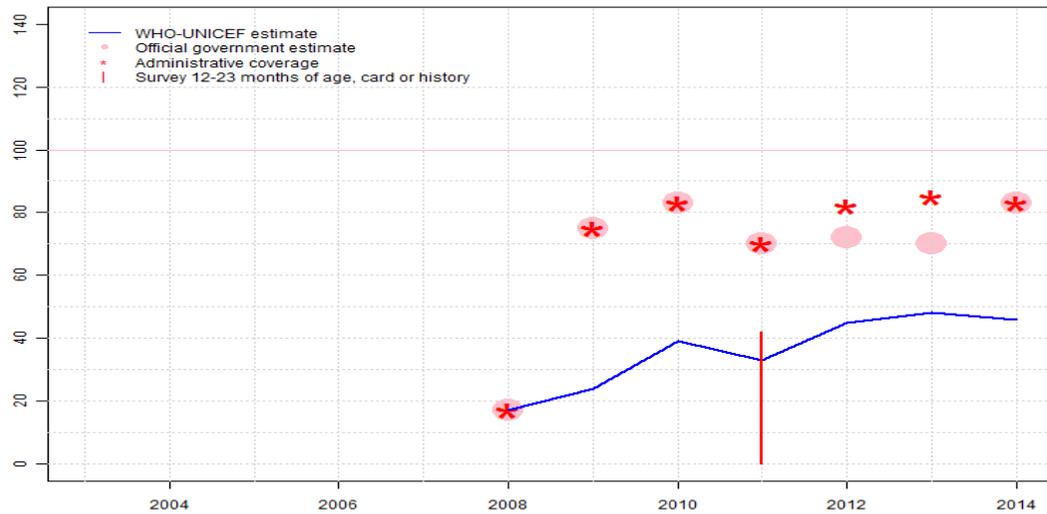
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2008: Estimate is based on the reported data. Apparent decline in coverage partially attributable to increase in national estimate of the target population. HepB vaccine introduced in 2008. Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: R-
- 2009: Estimate is based on estimated DTP3 coverage. Chad Multiple Indicator Cluster Survey 2010 card or history results of 14 percent modified for recall bias to 20 percent based on 1st dose card or history coverage of 35 percent, 1st dose card only coverage of 19 percent and 3d dose card only coverage of 11 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 33 percent based on 1 survey(s). Chad Vaccination Coverage Survey 2012 card or history results of 42 percent modified for recall bias to 33 percent based on 1st dose card or history coverage of 55 percent, 1st dose card only coverage of 15 percent and 3d dose card only coverage of 9 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# Chad - Hib3

TCD - Hib3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA	NA	NA	NA	NA	17	24	39	33	45	48	46
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	17	75	83	70	72	70	83
Administrative	NA	NA	NA	NA	NA	17	75	83	70	82	85	83
Survey	NA	42	NA	NA	NA							

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

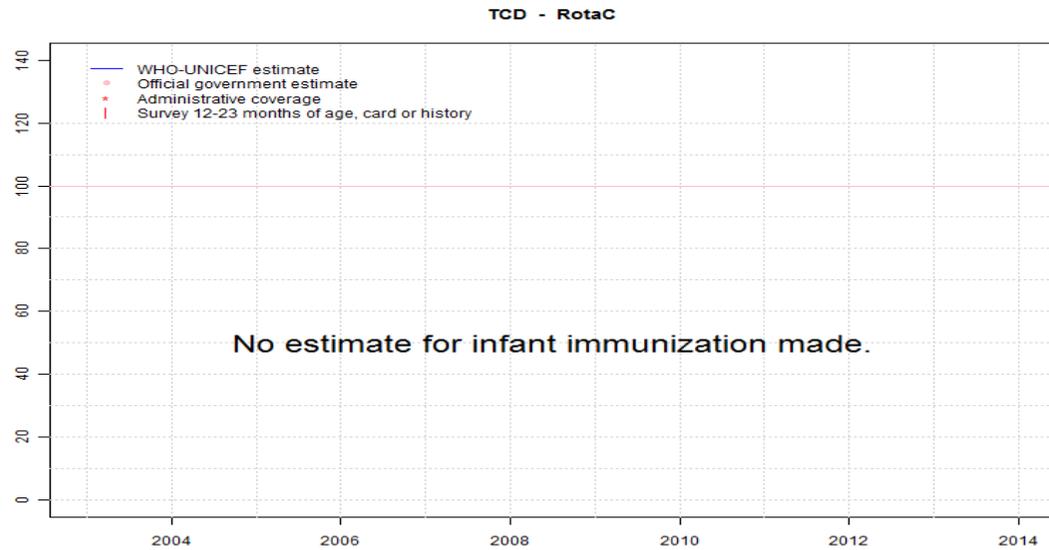
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

## Description:

- 2008: Estimate is based on the reported data. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Hib vaccine introduced in 2008. Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: R-
- 2009: Estimate is based on estimated DTP3 coverage. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 33 percent based on 1 survey(s). Chad Vaccination Coverage Survey 2012 card or history results of 42 percent modified for recall bias to 33 percent based on 1st dose card or history coverage of 55 percent, 1st dose card only coverage of 15 percent and 3d dose card only coverage of 9 percent. . Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# Chad - RotaC

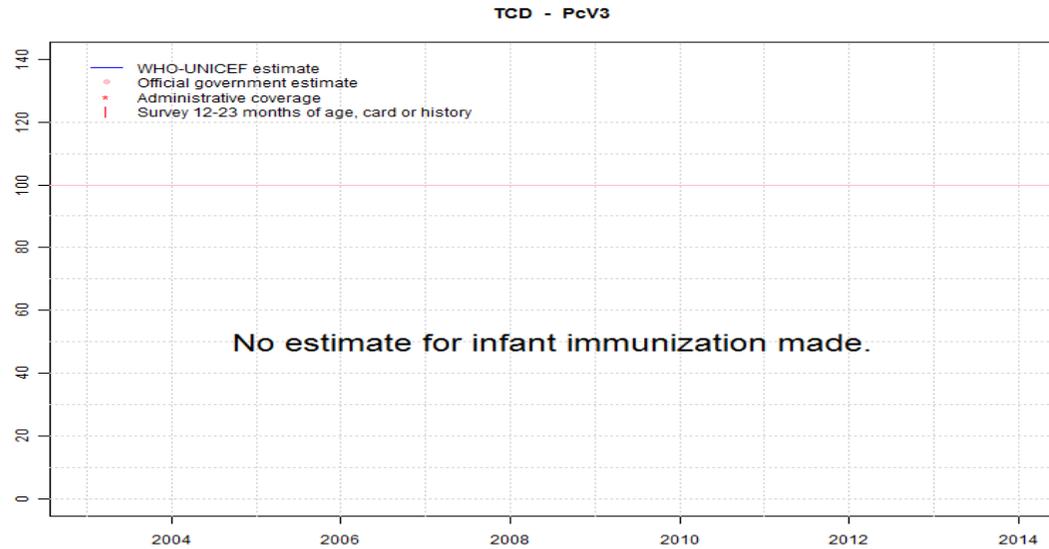


	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

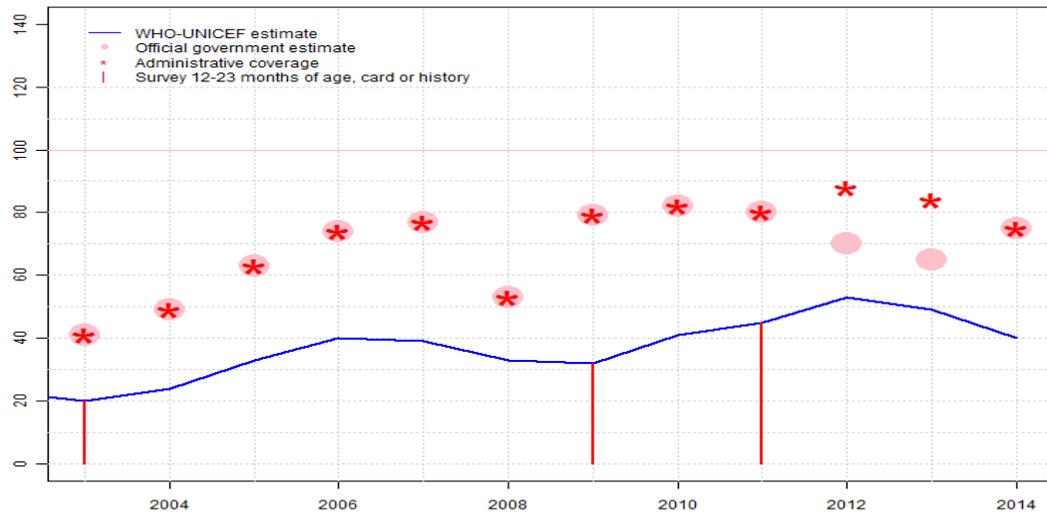
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

# Chad - YFV

TCD - YFV



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	20	24	33	40	39	33	32	41	45	53	49	40
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	41	49	63	74	77	53	79	82	80	70	65	75
Administrative	41	49	63	74	77	53	79	82	80	88	84	75
Survey	20	NA	NA	NA	NA	NA	32	NA	45	NA	NA	NA

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

## Description:

- 2003: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 20 percent based on 1 survey(s). Estimate challenged by: R-
- 2004: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2005: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2006: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2003 and 2009 levels. Estimate challenged by: D-
- 2008: Estimate reflects a 12 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data excluded. Decline in reported coverage from 77 percent to 53 percent with increase to 79 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 32 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 and 2011 levels. Estimate challenged by: D-
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 45 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Government official estimate reflects an adjustment based on survey results. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Programme reports stockouts for all antigens at the district level (duration unknown and number of districts unknown). Government official estimate reflects an adjustment based on a preliminary sub-national coverage survey results. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. In conjunction with intensification of supportive supervision and outreach activities, the programme has established a system of monthly monitoring of performance indicators backed by regular monitoring through additional supportive supervisory visits. Although challenges with the routine administrative monitoring system are recognized, WHO and UNICEF continue to follow the trend in the administrative data in the absence of other information. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. National programme reports 2 month stock-out at national level. Estimate challenged by: D-

# Chad - survey details

2011 L'Enquête de Couverture Vaccinale, Tchad, 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen	Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	27	12-23 m	7343	41	BCG	C or H <12 months	44	12-23 m	-	21
BCG	Card	57	12-23 m	-	41	BCG	Card	16	12-23 m	-	21
BCG	Card or History	68	12-23 m	7343	41	BCG	Card or History	46	12-23 m	2932	21
DTP1	C or H <12 months	32	12-23 m	7343	41	BCG	History	30	12-23 m	-	21
DTP1	Card	15	12-23 m	-	41	DTP1	C or H <12 months	42	12-23 m	-	21
DTP1	Card or History	55	12-23 m	7343	41	DTP1	Card	19	12-23 m	-	21
DTP3	C or H <12 months	14	12-23 m	7343	41	DTP1	Card or History	45	12-23 m	2932	21
DTP3	Card	9	12-23 m	-	41	DTP1	History	26	12-23 m	-	21
DTP3	Card or History	42	12-23 m	7343	41	DTP3	C or H <12 months	16	12-23 m	-	21
HepB1	C or H <12 months	32	12-23 m	7343	41	DTP3	Card	10	12-23 m	-	21
HepB1	Card	15	12-23 m	-	41	DTP3	Card or History	20	12-23 m	2932	21
HepB1	Card or History	55	12-23 m	7343	41	DTP3	History	9	12-23 m	-	21
HepB3	C or H <12 months	14	12-23 m	7343	41	HepB1	C or H <12 months	32	12-23 m	-	21
HepB3	Card	9	12-23 m	-	41	HepB1	Card	19	12-23 m	-	21
HepB3	Card or History	42	12-23 m	7343	41	HepB1	Card or History	35	12-23 m	2932	21
Hib1	C or H <12 months	32	12-23 m	7343	41	HepB1	History	16	12-23 m	-	21
Hib1	Card	15	12-23 m	-	41	HepB3	C or H <12 months	11	12-23 m	-	21
Hib1	Card or History	55	12-23 m	7343	41	HepB3	Card	11	12-23 m	-	21
Hib3	C or H <12 months	14	12-23 m	7343	41	HepB3	Card or History	14	12-23 m	2932	21
Hib3	Card	9	12-23 m	-	41	HepB3	History	3	12-23 m	-	21
Hib3	Card or History	42	12-23 m	7343	41	HepBB	C or H <12 months	12	12-23 m	-	21
MCV1	C or H <12 months	18	12-23 m	7343	41	HepBB	Card	9	12-23 m	-	21
MCV1	Card	13	12-23 m	-	41	HepBB	Card or History	12	12-23 m	2932	21
MCV1	Card or History	54	12-23 m	7343	41	HepBB	History	4	12-23 m	-	21
Pol1	C or H <12 months	39	12-23 m	7343	41	MCV1	C or H <12 months	30	12-23 m	-	21
Pol1	Card	17	12-23 m	-	41	MCV1	Card	12	12-23 m	-	21
Pol1	Card or History	68	12-23 m	7343	41	MCV1	Card or History	36	12-23 m	2932	21
Pol3	C or H <12 months	17	12-23 m	7343	41	MCV1	History	24	12-23 m	-	21
Pol3	Card	10	12-23 m	-	41	Pol1	C or H <12 months	56	12-23 m	-	21
Pol3	Card or History	52	12-23 m	7343	41	Pol1	Card	19	12-23 m	-	21
YFV	C or H <12 months	24	12-23 m	7343	41	Pol1	Card or History	61	12-23 m	2932	21
YFV	Card	9	12-23 m	-	41	Pol1	History	42	12-23 m	-	21
YFV	Card or History	45	12-23 m	7343	41	Pol3	C or H <12 months	25	12-23 m	-	21
						Pol3	Card	10	12-23 m	-	21
						Pol3	Card or History	32	12-23 m	2932	21
						Pol3	History	22	12-23 m	-	21
						YFV	C or H <12 months	26	12-23 m	-	21
						YFV	Card	10	12-23 m	-	21

2009 Enquête par grappes à indicateurs multiples MICS Tchad  
2010

# Chad - survey details

YFV	Card or History	32	12-23 m	2932	21
YFV	History	22	12-23 m	-	21

## 2003 L'Enquête Démographique et de Santé au Tchad, 2004

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	36	12-23 m	941	24
BCG	Card	20	12-23 m	941	24
BCG	Card or history	40	12-23 m	941	24
BCG	History	20	12-23 m	941	24
DTP1	C or H <12 months	42	12-23 m	941	24
DTP1	Card	24	12-23 m	941	24
DTP1	Card or history	45	12-23 m	941	24
DTP1	History	21	12-23 m	941	24
DTP3	C or H <12 months	16	12-23 m	941	24
DTP3	Card	12	12-23 m	941	24
DTP3	Card or history	20	12-23 m	941	24
DTP3	History	8	12-23 m	941	24
MCV1	C or H <12 months	15	12-23 m	941	24
MCV1	Card	14	12-23 m	941	24
MCV1	Card or history	23	12-23 m	941	24
MCV1	History	9	12-23 m	941	24
Pol1	C or H <12 months	73	12-23 m	941	24
Pol1	Card	23	12-23 m	941	24
Pol1	Card or history	78	12-23 m	941	24
Pol1	History	55	12-23 m	941	24
Pol3	C or H <12 months	28	12-23 m	941	24
Pol3	Card	12	12-23 m	941	24
Pol3	Card or history	36	12-23 m	941	24
Pol3	History	23	12-23 m	941	24
YFV	C or H <12 months	14	12-23 m	941	24
YFV	Card	14	12-23 m	941	24
YFV	Card or history	20	12-23 m	941	24
YFV	History	7	12-23 m	941	24

## 2001 République du Tchad, Revue du Programme Elargi de Vaccination, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	52	12-23 m	3159	39
DTP1	Card or History	44	12-23 m	3159	39
DTP3	Card or History	26	12-23 m	3159	39
MCV1	Card or History	26	12-23 m	3159	39
Pol1	Card or History	45	12-23 m	3159	39
Pol3	Card or History	26	12-23 m	3159	39

## 1999 République du Tchad, Enquête de grappes à indicateurs multiples, Rapport complet, 2000

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	42	12-23 m	873	23
BCG	Card	10	12-23 m	873	23
BCG	Card or History	45	12-23 m	873	23
BCG	History	36	12-23 m	873	23
DTP1	C or H <12 months	43	12-23 m	873	23
DTP1	Card	10	12-23 m	873	23
DTP1	Card or History	45	12-23 m	873	23
DTP1	History	35	12-23 m	873	23
DTP3	C or H <12 months	17	12-23 m	873	23
DTP3	Card	10	12-23 m	873	23
DTP3	Card or History	21	12-23 m	873	23
DTP3	History	10	12-23 m	873	23
MCV1	C or H <12 months	24	12-23 m	873	23
MCV1	Card	6	12-23 m	873	23
MCV1	Card or History	30	12-23 m	873	23
MCV1	History	24	12-23 m	873	23
Pol1	C or H <12 months	86	12-23 m	873	23
Pol1	Card	2	12-23 m	873	23
Pol1	Card or History	90	12-23 m	873	23
Pol1	History	88	12-23 m	873	23
Pol3	C or H <12 months	42	12-23 m	873	23
Pol3	Card	6	12-23 m	873	23
Pol3	Card or History	51	12-23 m	873	23
Pol3	History	45	12-23 m	873	23
YFV	C or H <12 months	27	12-23 m	873	23
YFV	Card	7	12-23 m	873	23

## Chad - survey details

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YFV	Card or History	31	12-23 m	873	23
YFV	History	24	12-23 m	873	23

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)

## Chad

### 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 (%)
2003	60
2004	61
2005	61
2006	60
2007	60
2008	58
2009	60
2010	60
2011	60
2012	43
2013	50
2014	60

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