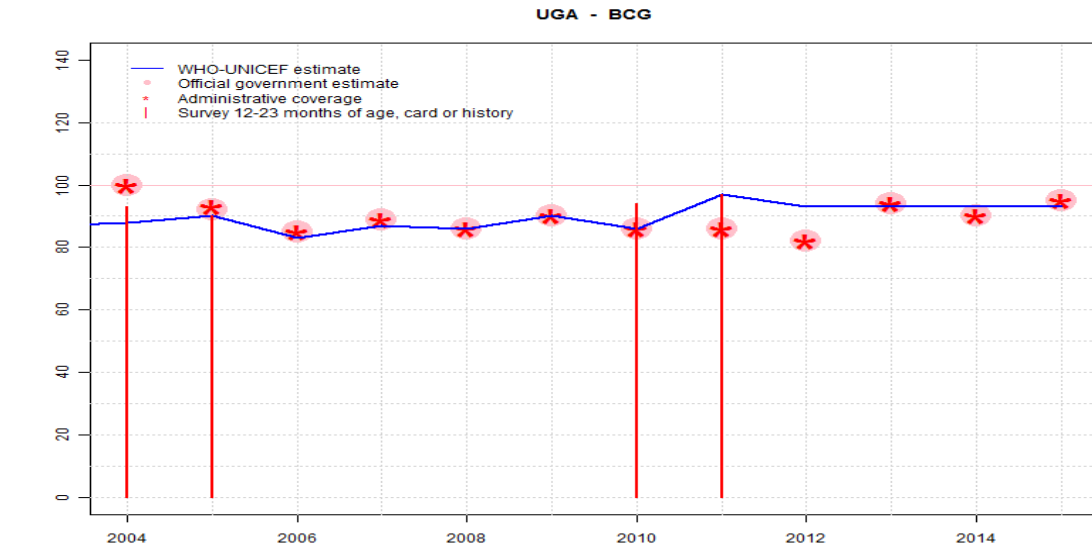


# Uganda - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	88	90	83	87	86	90	86	97	93	93	93	93
Estimate GoC	•	•	••	••	••	••	•••	•	••	••	••	••
Official	100	92	85	89	86	90	86	86	82	94	90	95
Administrative	100	93	85	89	86	90	86	86	82	94	90	95
Survey	93	90	NA	NA	NA	NA	94	97	NA	NA	NA	NA

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

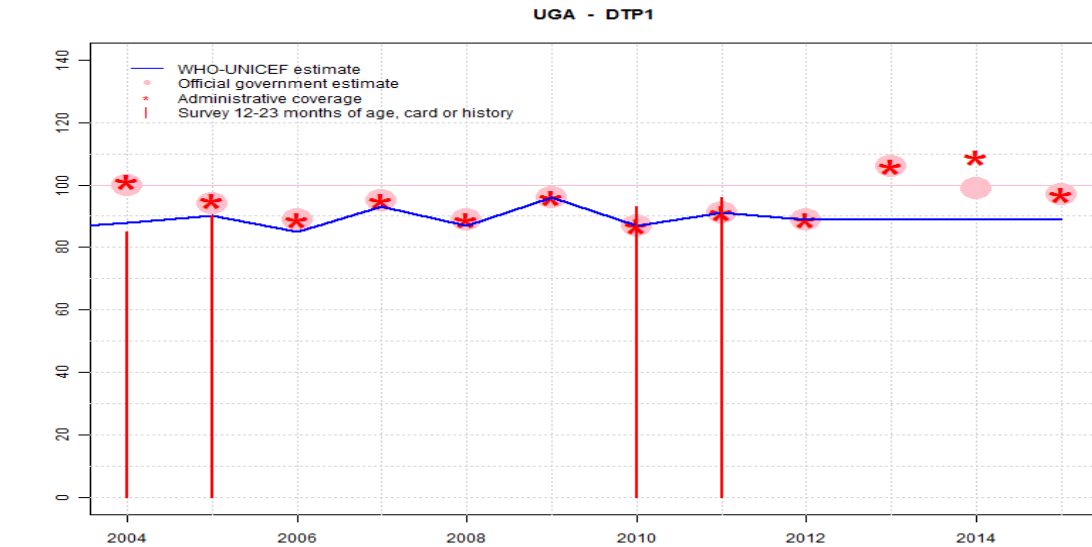
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

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

## Description:

- 2004: Estimate based on interpolation between 1999 and 2005 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: D-R-
- 2005: Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Estimate challenged by: R-
- 2006: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). GoC=R+ S+ D+
- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: R-
- 2012: Reported data calibrated to 2011 levels. GoC=S+ D+
- 2013: Reported data calibrated to 2011 levels. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. GoC=S+ D+
- 2014: Reported data calibrated to 2011 levels. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Programme reports four month stock-out at national level. GoC=D+
- 2015: Reported data calibrated to 2011 levels. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. GoC=D+

# Uganda - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	88	90	85	93	87	96	87	91	89	89	89	89
Estimate GoC	•	•	••	••	••	••	•••	•••	•••	•	•	•
Official	100	94	89	95	89	96	87	91	89	106	99	97
Administrative	101	95	89	95	89	96	87	91	89	106	109	97
Survey	85	90	NA	NA	NA	NA	93	96	NA	NA	NA	NA

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

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

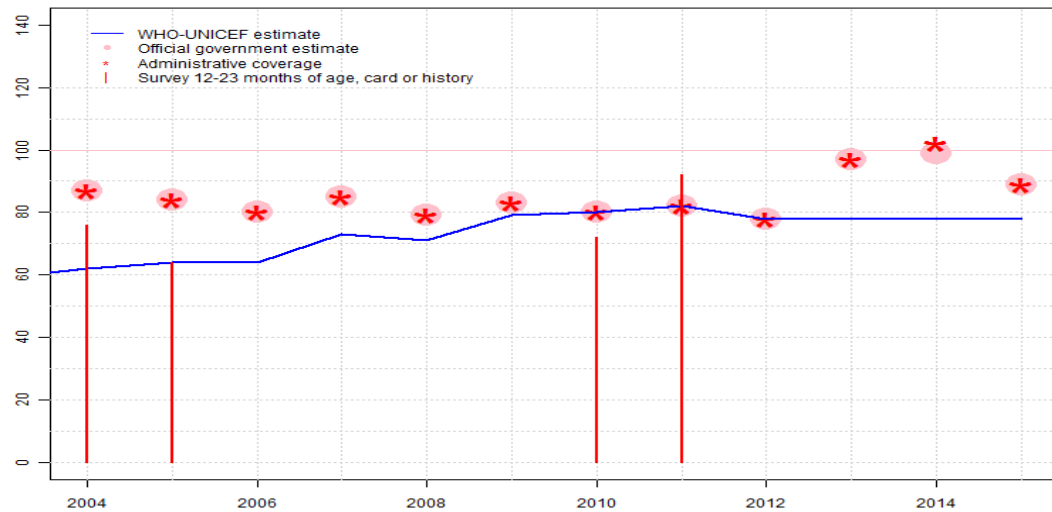
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2004: Estimate based on interpolation between 1999 and 2005 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: R-
- 2005: Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Estimate challenged by: R-
- 2006: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 93 percent based on 1 survey(s). GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ S+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Reported data excluded. 106 percent greater than 100 percent. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-

# Uganda - DTP3

UGA - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	62	64	64	73	71	79	80	82	78	78	78	78
Estimate GoC	•	•	•	••	••	••	•••	•••	•••	•	•	•
Official	87	84	80	85	79	83	80	82	78	97	99	89
Administrative	87	84	80	85	79	83	80	82	78	97	102	89
Survey	76	64	NA	NA	NA	NA	72	92	NA	NA	NA	NA

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

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

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

## Description:

- 2004: Estimate based on interpolation between 1999 and 2005 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: D-R-
- 2005: Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Uganda Demographic and Health Survey 2006 card or history results of 64 percent modified for recall bias to 71 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 62 percent and 3d dose card only coverage of 49 percent. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). Uganda Demographic and Health Survey 2011 card or history results of 72 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 58 percent and 3d dose card only coverage of 50 percent. GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ S+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage

# Uganda - DTP3

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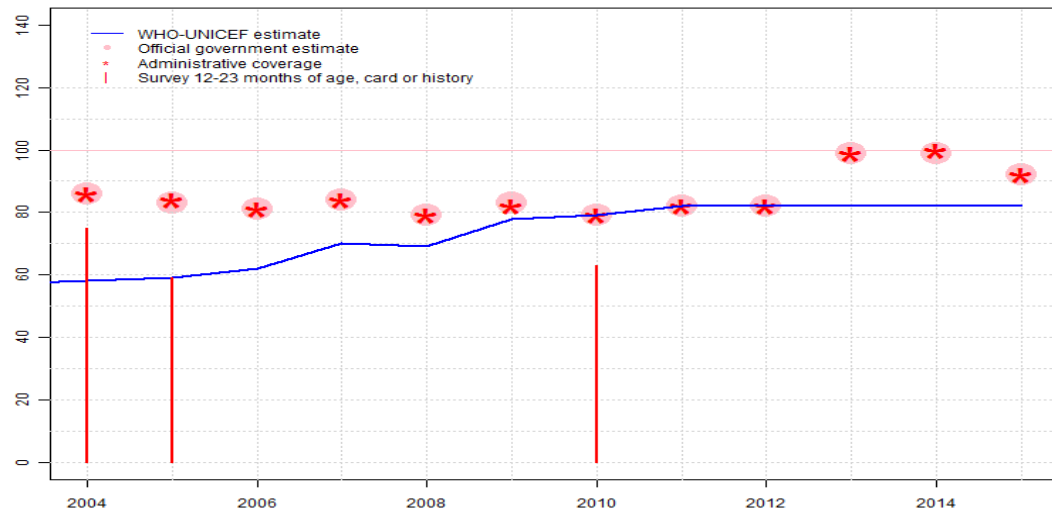
levels. Estimate challenged by: D-

2015: Estimate based on extrapolation from data reported by national government.

Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-

# Uganda - Pol3

UGA - Pol3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	58	59	62	70	69	78	79	82	82	82	82	82
Estimate GoC	•	•	•	••	••	••	•••	•••	•••	•	•	•
Official	86	83	81	84	79	83	79	82	82	99	99	92
Administrative	86	84	81	84	79	82	79	82	82	99	100	92
Survey	75	59	NA	NA	NA	NA	63	NA	NA	NA	NA	NA

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

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

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

## Description:

- 2004: Estimate based on interpolation between 1999 and 2005 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: D-R-
- 2005: Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Uganda Demographic and Health Survey 2006 card or history results of 59 percent modified for recall bias to 72 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 61 percent and 3d dose card only coverage of 49 percent. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2010: Estimate is based on reported data to maintain consistency with other vaccines. Uganda Demographic and Health Survey 2011 card or history results of 63 percent modified for recall bias to 79 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 58 percent and 3d dose card only coverage of 49 percent. GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ S+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government.

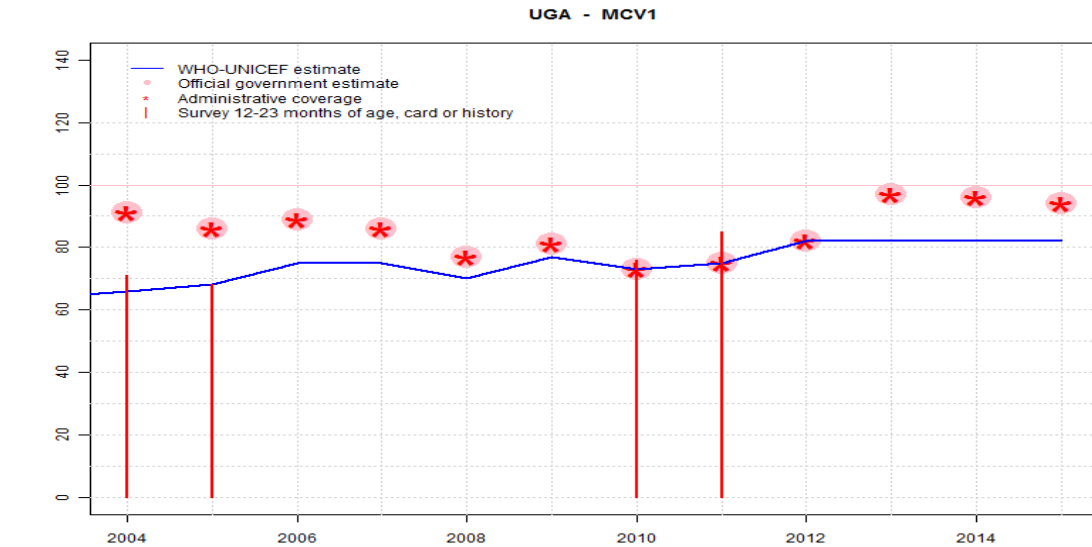
# Uganda - Pol3

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Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-



# Uganda - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	66	68	75	75	70	77	73	75	82	82	82	82
Estimate GoC	•	•	••	••	••	••	•••	•••	•••	•	•	•
Official	91	86	89	86	77	81	73	75	82	97	96	94
Administrative	91	86	89	86	77	81	73	75	82	97	96	94
Survey	71	68	NA	NA	NA	NA	76	85	NA	NA	NA	NA

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

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

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

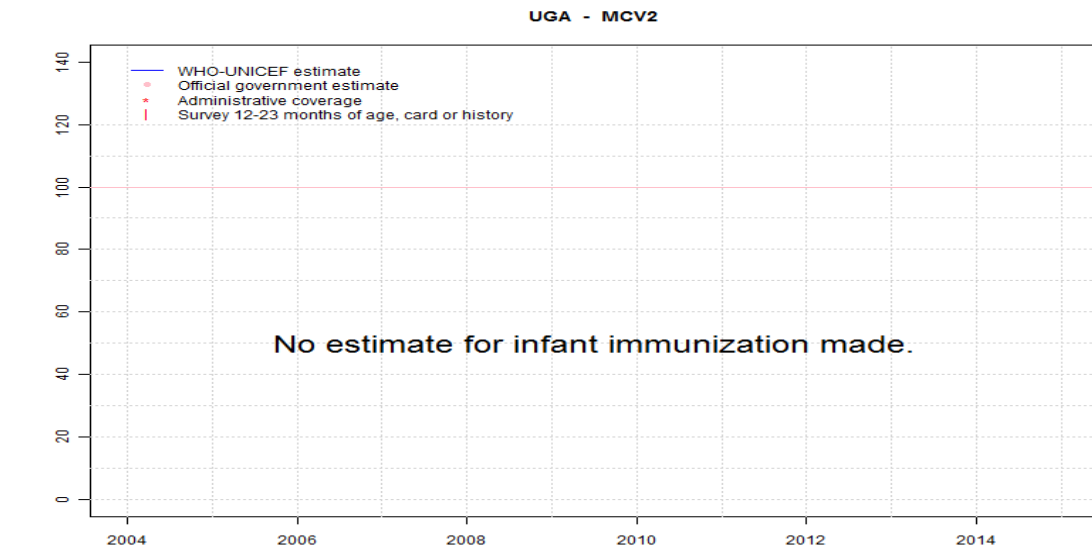
## Description:

- 2004: Estimate based on interpolation between 1999 and 2005 levels. Fluctuation in reported data suggest poor quality administrative recording and reporting. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: D-R-
- 2005: Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=S+ D+
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 76 percent based on 1 survey(s). GoC=R+ S+ D+
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 85 percent based on 1 survey(s). GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Programme reports two month stock-out at national level. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Quality of data on number of children vaccinated possibly due to some districts adding together rou-



tine and campaign doses. Estimate challenged by: D-

# Uganda - MCV2



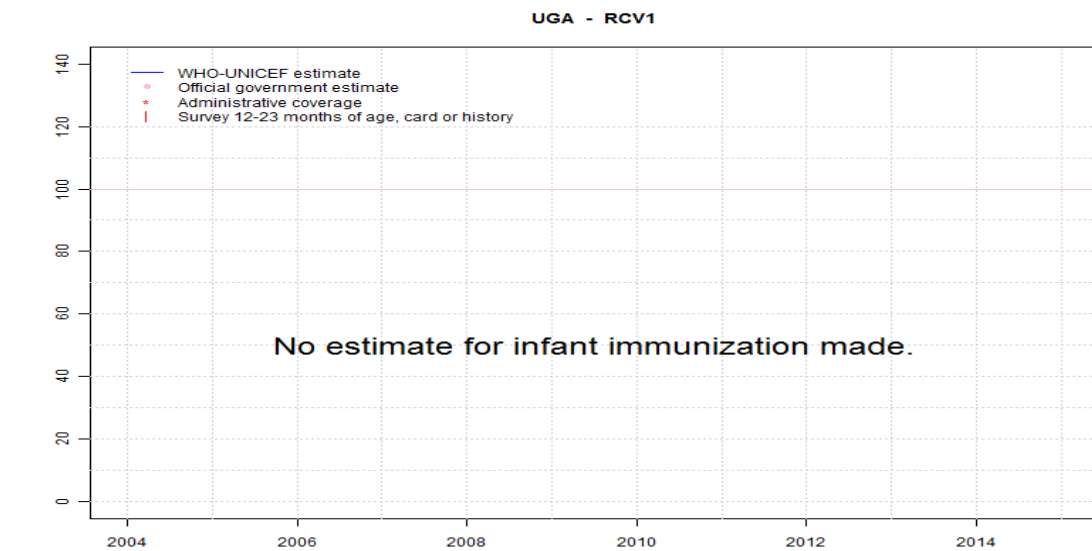
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

# Uganda - RCV1



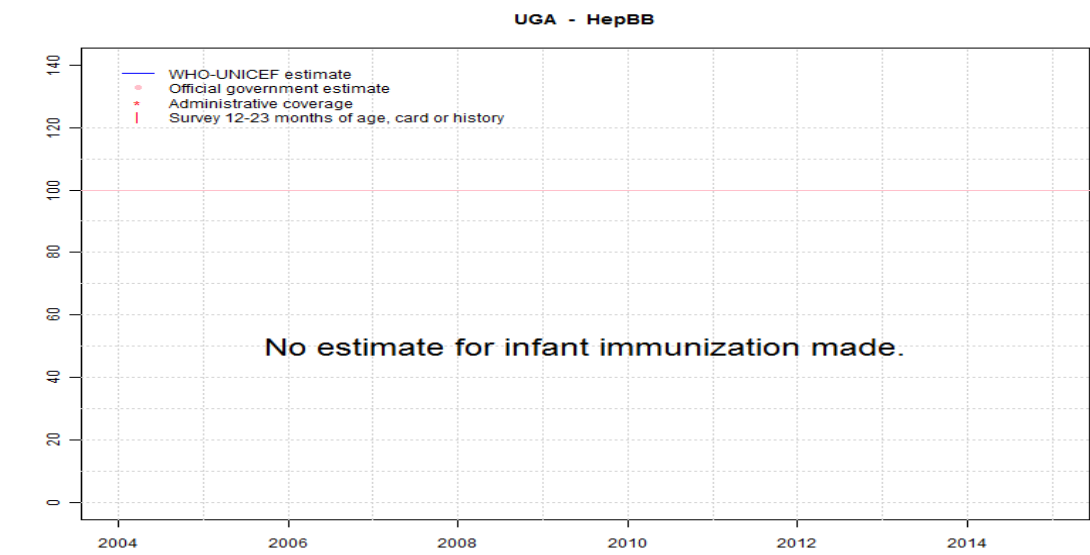
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

# Uganda - HepBB



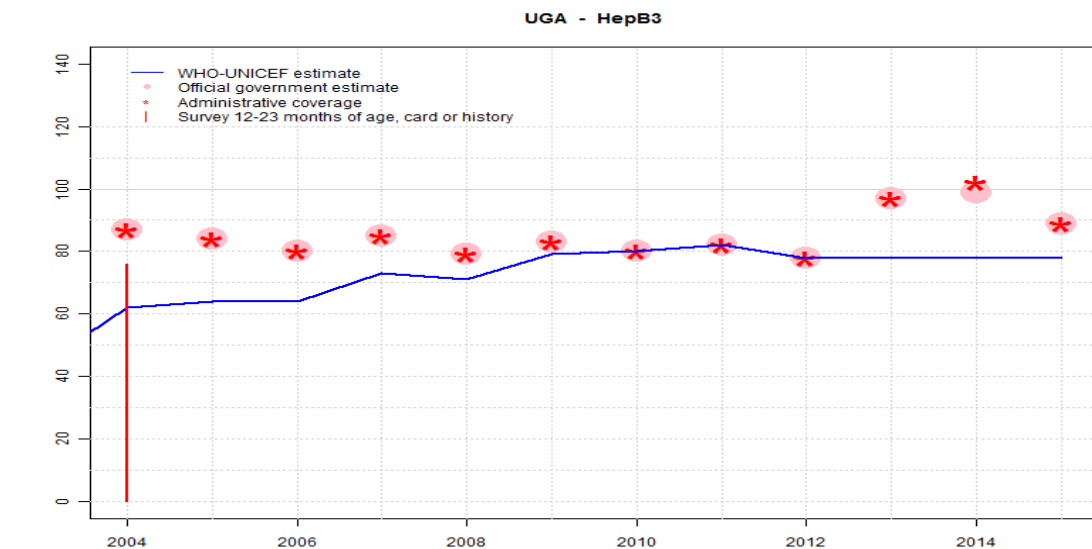
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

# Uganda - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	62	64	64	73	71	79	80	82	78	78	78	78
Estimate GoC	•	•	•	••	••	••	••	••	••	•	•	•
Official	87	84	80	85	79	83	80	82	78	97	99	89
Administrative	87	84	80	85	79	83	80	82	78	97	102	89
Survey	76	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.

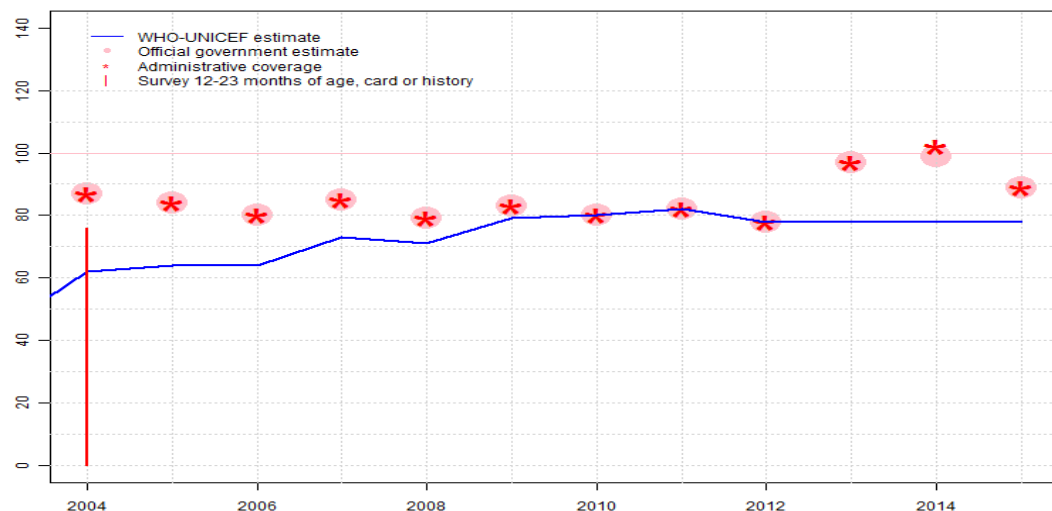
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2004: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: D-R-
- 2005: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=D+
- 2010: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-

# Uganda - Hib3

UGA - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	62	64	64	73	71	79	80	82	78	78	78	78
Estimate GoC	•	•	•	••	••	••	••	••	••	•	•	•
Official	87	84	80	85	79	83	80	82	78	97	99	89
Administrative	87	84	80	85	79	83	80	82	78	97	102	89
Survey	76	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.

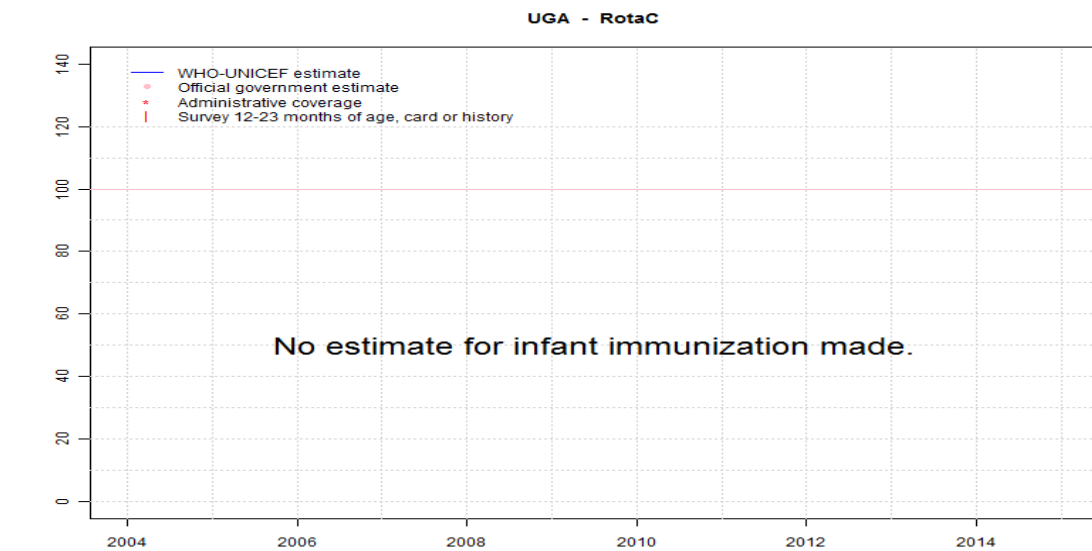
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. Survey results ignored. Sample size 232 less than 300. Estimate challenged by: D-R-
- 2005: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2010 levels. GoC=D+
- 2008: Reported data calibrated to 2005 and 2010 levels. GoC=D+
- 2009: Reported data calibrated to 2005 and 2010 levels. GoC=D+
- 2010: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-

# Uganda - RotaC



	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

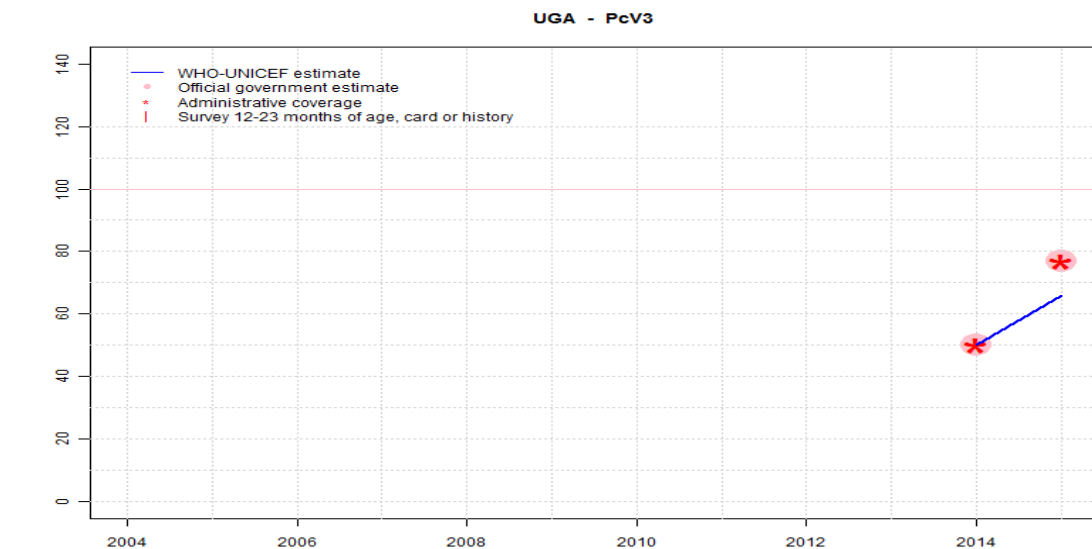
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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



# Uganda - PcV3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	66
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	77
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	77
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

## Description:

2014: . Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. In line with the EPI Review report from March 2015 WHO and UNICEF recommend a high quality survey to confirm reported coverage levels. Pneumococcal conjugate vaccine introduced during 2014. Estimate challenged by: R-

2015: Estimate based adjustment from DTP3 level. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-R-

# Uganda - survey details

## 2011 Routine Immunization Coverage Survey in Uganda: National Report 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	78	12-23 m	25811	79
BCG	Card or History	97	12-23 m	33265	79
DTP1	Card	77	12-23 m	25811	79
DTP1	Card or History	96	12-23 m	33265	79
DTP3	Card	74	12-23 m	25811	79
DTP3	Card or History	92	12-23 m	33265	79
MCV1	Card	70	12-23 m	25811	79
MCV1	Card or History	85	12-23 m	33265	79

## 2010 Uganda Demographic and Health Survey 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	92	12-23 m	1480	59
BCG	Card	58	12-23 m	876	59
BCG	Card or History	94	12-23 m	1480	59
BCG	History	36	12-23 m	604	59
DTP1	C or H <12 months	91	12-23 m	1480	59
DTP1	Card	58	12-23 m	876	59
DTP1	Card or History	93	12-23 m	1480	59
DTP1	History	35	12-23 m	604	59
DTP3	C or H <12 months	68	12-23 m	1480	59
DTP3	Card	50	12-23 m	876	59
DTP3	Card or History	72	12-23 m	1480	59
DTP3	History	22	12-23 m	604	59
MCV1	C or H <12 months	58	12-23 m	1480	59
MCV1	Card	47	12-23 m	876	59
MCV1	Card or History	76	12-23 m	1480	59
MCV1	History	29	12-23 m	604	59
Pol1	C or H <12 months	91	12-23 m	1480	59
Pol1	Card	58	12-23 m	876	59
Pol1	Card or History	93	12-23 m	1480	59
Pol1	History	35	12-23 m	604	59
Pol3	C or H <12 months	60	12-23 m	1480	59
Pol3	Card	49	12-23 m	876	59

Pol3	Card or History	63	12-23 m	1480	59
Pol3	History	14	12-23 m	604	59

## 2009 Uganda Demographic and Health Survey 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	93	24-35 m	1515	59
DTP1	C or H <12 months	91	24-35 m	1515	59
DTP3	C or H <12 months	55	24-35 m	1515	59
MCV1	C or H <12 months	58	24-35 m	1515	59
Pol1	C or H <12 months	90	24-35 m	1515	59
Pol3	C or H <12 months	64	24-35 m	1515	59

## 2008 Uganda Demographic and Health Survey 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	91	36-47 m	1473	59
DTP1	C or H <12 months	90	36-47 m	1473	59
DTP3	C or H <12 months	55	36-47 m	1473	59
MCV1	C or H <12 months	61	36-47 m	1473	59
Pol1	C or H <12 months	90	36-47 m	1473	59
Pol3	C or H <12 months	67	36-47 m	1473	59

## 2007 Uganda Demographic and Health Survey 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	93	48-59 m	1438	59
DTP1	C or H <12 months	92	48-59 m	1438	59
DTP3	C or H <12 months	54	48-59 m	1438	59
MCV1	C or H <12 months	64	48-59 m	1438	59
Pol1	C or H <12 months	90	48-59 m	1438	59
Pol3	C or H <12 months	65	48-59 m	1438	59

## 2005 Uganda Demographic and Health Survey 2006

# Uganda - survey details

## 1999 Uganda Demographic and Health Survey 2000-2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	89	12-23 m	1590	63
BCG	Card	62	12-23 m	1590	63
BCG	Card or History	90	12-23 m	1590	63
BCG	History	29	12-23 m	1590	63
DTP1	C or H <12 months	87	12-23 m	1590	63
DTP1	Card	62	12-23 m	1590	63
DTP1	Card or History	90	12-23 m	1590	63
DTP1	History	28	12-23 m	1590	63
DTP3	C or H <12 months	59	12-23 m	1590	63
DTP3	Card	49	12-23 m	1590	63
DTP3	Card or History	64	12-23 m	1590	63
DTP3	History	14	12-23 m	1590	63
MCV1	C or H <12 months	52	12-23 m	1590	63
MCV1	Card	46	12-23 m	1590	63
MCV1	Card or History	68	12-23 m	1590	63
MCV1	History	22	12-23 m	1590	63
Pol1	C or H <12 months	88	12-23 m	1590	63
Pol1	Card	61	12-23 m	1590	63
Pol1	Card or History	90	12-23 m	1590	63
Pol1	History	29	12-23 m	1590	63
Pol3	C or H <12 months	55	12-23 m	1590	63
Pol3	Card	49	12-23 m	1590	63
Pol3	Card or History	59	12-23 m	1590	63
Pol3	History	10	12-23 m	1590	63

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	75	12-23 m	1504	-
BCG	Card	46	12-23 m	1504	-
BCG	Card or History	79	12-23 m	1504	-
BCG	History	32	12-23 m	1504	-
DTP1	C or H <12 months	73	12-23 m	1504	-
DTP1	Card	45	12-23 m	1504	-
DTP1	Card or History	77	12-23 m	1504	-
DTP1	History	32	12-23 m	1504	-
DTP3	C or H <12 months	42	12-23 m	1504	-
DTP3	Card	31	12-23 m	1504	-
DTP3	Card or History	46	12-23 m	1504	-
DTP3	History	15	12-23 m	1504	-
MCV1	C or H <12 months	42	12-23 m	1504	-
MCV1	Card	32	12-23 m	1504	-
MCV1	Card or History	57	12-23 m	1504	-
MCV1	History	25	12-23 m	1504	-
Pol1	C or H <12 months	79	12-23 m	1504	-
Pol1	Card	46	12-23 m	1504	-
Pol1	Card or History	84	12-23 m	1504	-
Pol1	History	38	12-23 m	1504	-
Pol3	C or H <12 months	50	12-23 m	1504	-
Pol3	Card	34	12-23 m	1504	-
Pol3	Card or History	54	12-23 m	1504	-
Pol3	History	21	12-23 m	1504	-

## 2004 Uganda EPI Plus Coverage Survey 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	93	12-23 m	232	73
DTP1	Card or History	85	12-23 m	232	73
DTP3	Card or History	76	12-23 m	232	73
HepB1	Card or History	85	12-23 m	232	73
HepB3	Card or History	76	12-23 m	232	73
Hib3	Card or History	76	12-23 m	232	73
MCV1	Card or History	71	12-23 m	232	73
Pol1	Card or History	88	12-23 m	232	73
Pol3	Card or History	75	12-23 m	232	73

## 1997 Uganda Immunization Coverage Validation Survey 1998/1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	82	12-23 m	10466	-
DTP1	Card or History	78	12-23 m	10466	-
DTP3	Card or History	54	12-23 m	10466	-
MCV1	Card or History	53	12-23 m	10466	-
Pol1	Card or History	79	12-23 m	10466	-
Pol3	Card or History	55	12-23 m	10466	-

## Uganda - survey details

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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)

## Uganda

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

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

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

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

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

Year	PAB coverage estimate (%)
2004	82
2005	85
2006	83
2007	85
2008	85
2009	89
2010	85
2011	85
2012	85
2013	85
2014	85
2015	85

<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.