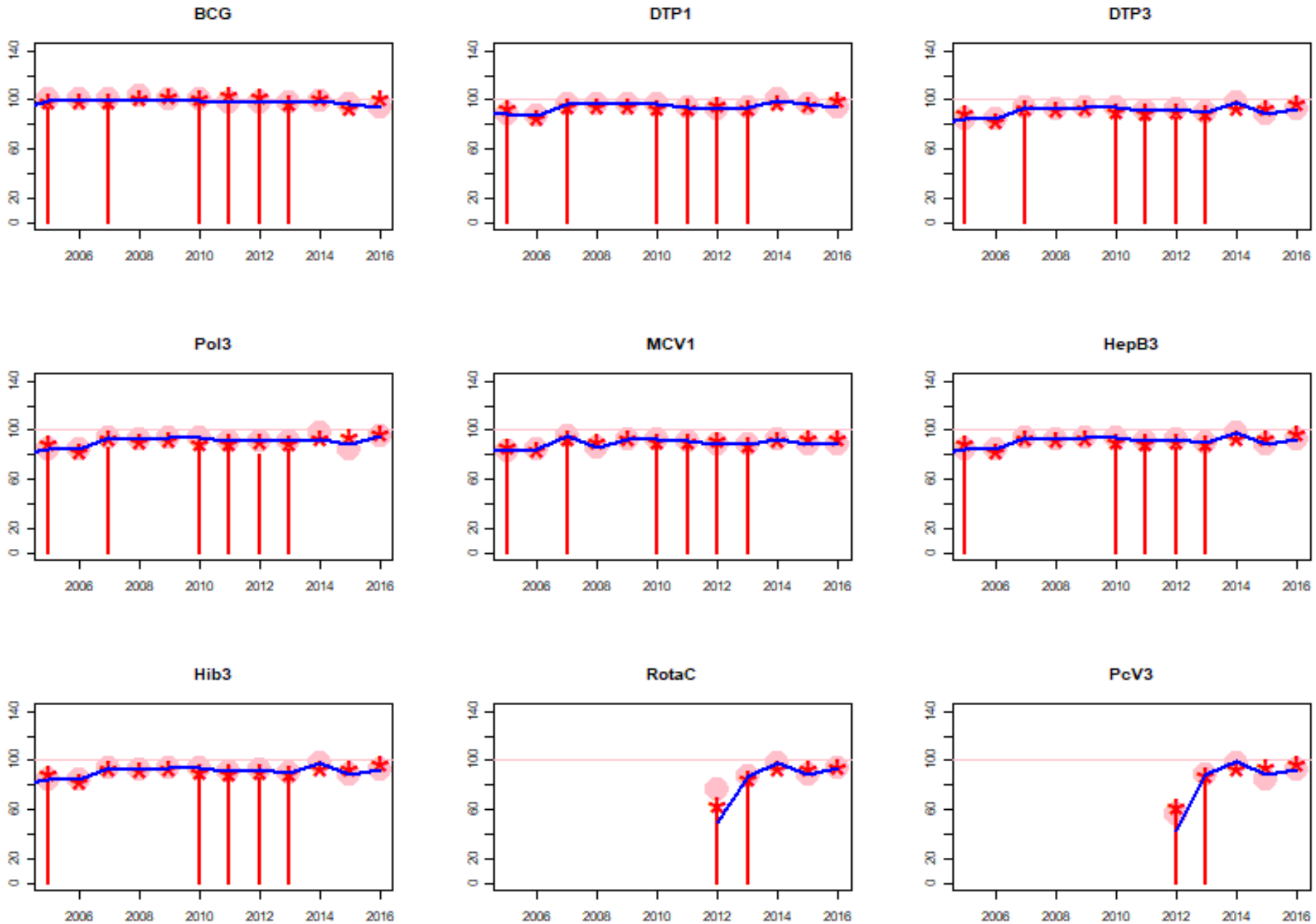


Ghana: WHO and UNICEF estimates of immunization coverage: 2016 revision



BACKGROUND NOTE: Each year WHO and UNICEF jointly review reports submitted by Member States regarding national immunization coverage, finalized survey reports as well as data from the published and grey literature. Based on these data, with due consideration to potential biases and the views of local experts, WHO and UNICEF attempt to distinguish between situations where the available empirical data accurately reflect immunization system performance and those where the data are likely to be compromised and present a misleading view of immunization coverage while jointly estimating the most likely coverage levels for each country.

WHO and UNICEF estimates are country-specific; that is to say, each country's data are reviewed individually, and data are not borrowed from other countries in the absence of data. Estimates are not based on ad hoc adjustments to reported data; in some instances empirical data are available from a single source, usually the nationally reported coverage data. In cases where no data are available for a given country/vaccine/year combination, data are considered from earlier and later years and interpolated to estimate coverage for the missing year(s). In cases where data sources are mixed and show large variation, an attempt is made to identify the most likely estimate with consideration of the possible biases in available data. For methods see:

*Burton et al. 2009. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.

*Burton et al. 2012. A formal representation of the WHO and UNICEF estimates of national immunization coverage: a computational logic approach.

*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around the WHO and UNICEF estimates of national immunization coverage.

DATA SOURCES.

ADMINISTRATIVE coverage: Reported by national authorities and based on aggregated administrative reports from health service providers on the number of vaccinations administered during a given period (numerator data) and reported target population data (denominator data). May be biased by inaccurate numerator and/or denominator data.

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.

SURVEY coverage: Based on estimated coverage from population-based household surveys among children aged 12-23 months or 24-35 months following a review of survey methods and results. Information is based on the combination of vaccination history from documented evidence or caregiver recall. Survey results are considered for the appropriate birth cohort based on the period of data collection.

ABBREVIATIONS

BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.

DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.

Pol3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine

immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (Pol3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated Pol3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated Pol3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

MCV1: percentage of surviving infants who received the 1st dose of measles containing vaccine. In countries where the national schedule recommends the 1st dose of MCV at 12 months or later based on the epidemiology of disease in the country, coverage estimates reflect the percentage of children who received the 1st dose of MCV as recommended.

MCV2: percentage of children who received the 2nd dose of measles containing vaccine according to the nationally recommended schedule.

RCV1: percentage of surviving infants who received the 1st dose of rubella containing vaccine. Coverage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration nor are the data represented in the accompanying graph and data table.

HepBB: percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are produced only for countries with a universal birth dose policy. Estimates are not produced for countries that recommend a birth dose to infants born to HepB virus-infected mothers only or where there is insufficient information to determine whether vaccination is within 24 hours of birth.

HepB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.

Hib3: percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.

RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.

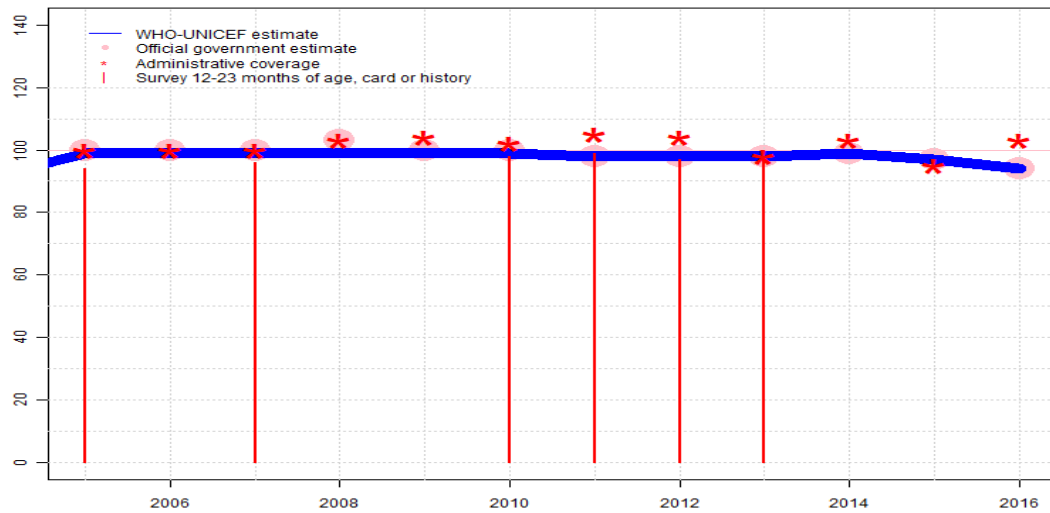
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PcV prior to the 1st birthday.

YFV: percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

Disclaimer: All reasonable precautions have been taken by the World Health Organization and United Nations Children's Fund to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization or United Nations Children's Fund be liable for damages arising from its use.

Ghana - BCG

GHA - BCG



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	99	99	99	99	99	99	98	98	98	99	97	94
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	100	100	100	103	100	100	98	98	98	99	97	94
Administrative	100	100	100	103	104	102	105	104	98	103	95	103
Survey	94	NA	96	NA	NA	98	99	97	97	NA	NA	NA

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

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

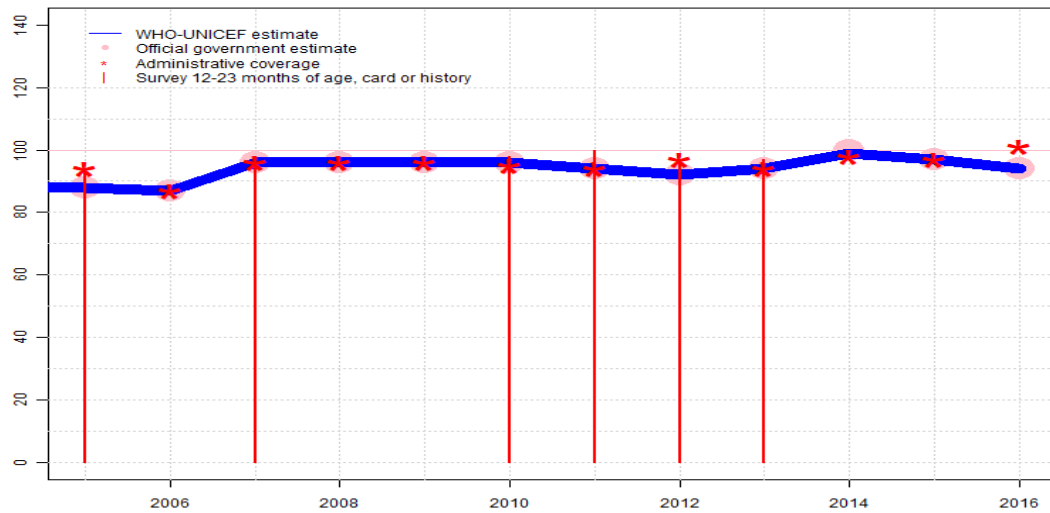
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on interpolation between coverage reported by national government. Reported data excluded because 103 percent greater than 100 percent. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Estimate challenged by: D-

Ghana - DTP1

GHA - DTP1



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	88	87	96	96	96	96	94	92	94	99	97	94
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	88	87	96	96	96	96	94	92	94	100	97	94
Administrative	94	87	96	96	96	95	94	97	94	98	97	101
Survey	94	NA	98	NA	NA	98	100	96	97	NA	NA	NA

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

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

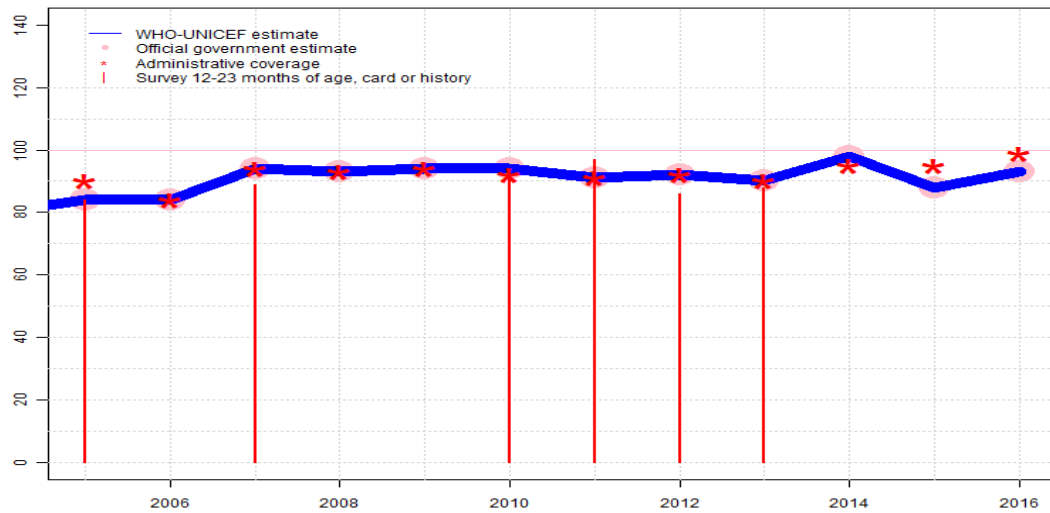
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 100 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 98 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-S-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Estimate challenged by: D-

Ghana - DTP3

GHA - DTP3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	84	84	94	93	94	94	91	92	90	98	88	93
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	84	84	94	93	94	94	91	92	90	98	88	93
Administrative	90	84	94	93	94	92	91	92	90	95	95	99
Survey	84	NA	89	NA	NA	93	97	86	88	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.

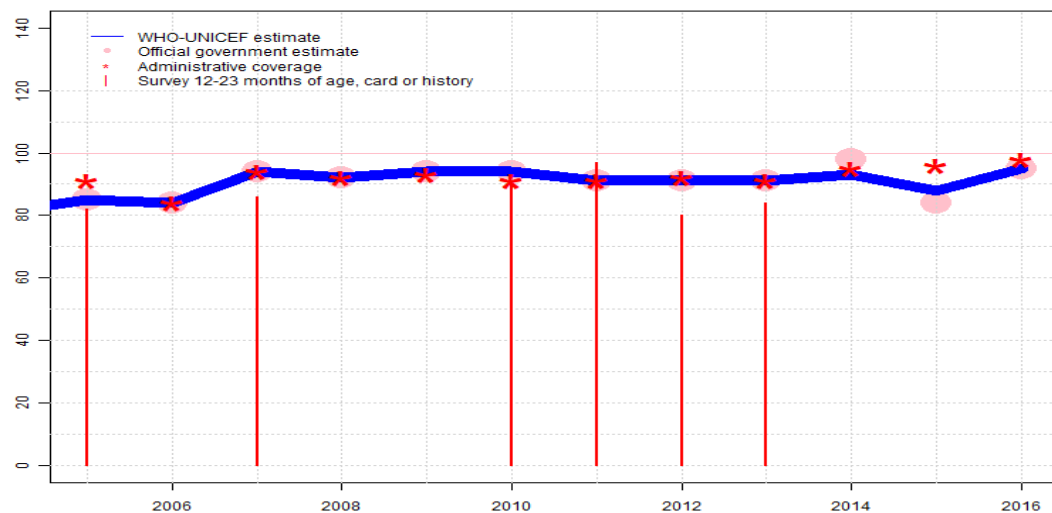
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 88 percent modified for recall bias to 94 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 87 percent and 3d dose card only coverage of 84 percent. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 86 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 79 percent and 3d dose card only coverage of 76 percent. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker 2011 card or history results of 93 percent modified for recall bias to 95 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 88 percent and 3d dose card only coverage of 85 percent. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Ghana Demographic and Health Survey 2008 card or history results of 89 percent modified for recall bias to 95 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 85 percent and 3d dose card only coverage of 82 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-S-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey 2006 card or history results of 84 percent modified for recall bias to 87 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 84 percent and 3d dose card only coverage of 78 percent. Estimate challenged by: D-S-

Ghana - Pol3

GHA - Pol3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	85	84	94	92	94	94	91	91	91	93	88	95
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	85	84	94	92	94	94	91	91	91	98	84	95
Administrative	91	84	94	92	93	91	91	92	91	95	96	98
Survey	82	NA	86	NA	NA	91	97	80	84	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:

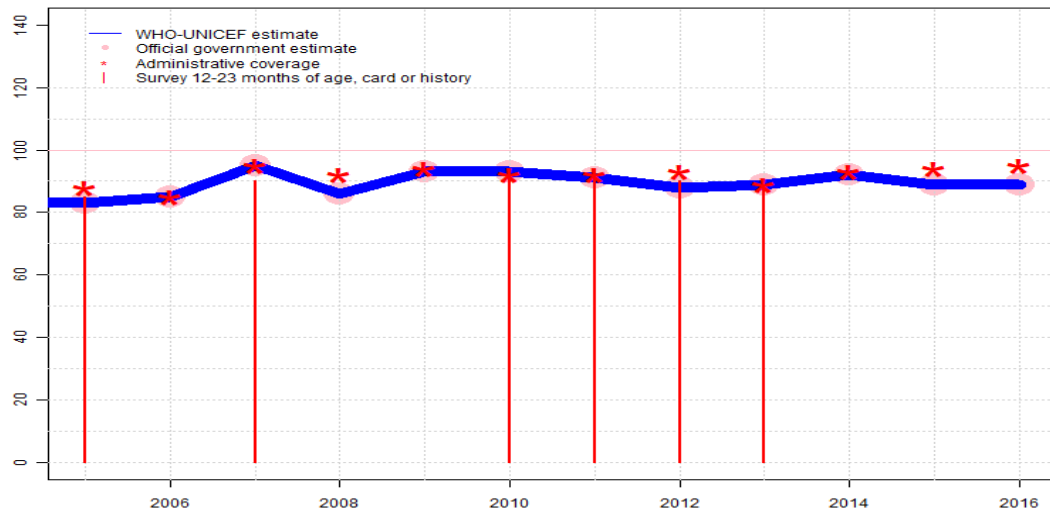
- 2016: Estimate of 95 percent assigned by working group. Estimate is based on reported data. Reported data excluded due to unexplained sudden change in coverage from 84 level to 95 percent. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-R-
- 2015: Estimate of 88 percent assigned by working group. Estimate is based on reported DTP3 coverage level. Reported data excluded due to decline in reported coverage from 98 percent to 84 percent with increase to 95 percent. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2013 and 2015 levels. Estimate challenged by: D-R-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 84 percent modified for recall bias to 91 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 88 percent and 3d dose card only coverage of 83 percent. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 80 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 79 percent and 3d dose card only coverage of 76 percent. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 99 percent based on 1 survey(s). Ghana EPI Cluster Survey 2012 card or history results of 97 percent modified for recall bias to 99 percent based on 1st dose card or history coverage of 100 percent, 1st dose card only coverage of 98 percent and 3d dose card only coverage of 97 percent. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker 2011 card or history results of 91 percent modified for recall bias to 97 percent based on 1st dose card or history coverage of 99 percent, 1st dose card only coverage of 87 percent and 3d dose card only coverage of 85 percent. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Ghana Demographic and Health Survey 2008 card or history results of 86 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 85 percent and 3d dose card only coverage of 81 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey 2006 card or history results of 82 percent modified for recall bias to 87 percent based on

Ghana - Pol3

1st dose card or history coverage of 96 percent, 1st dose card only coverage of 84 percent and 3d dose card only coverage of 76 percent. Estimate challenged by: D-

Ghana - MCV1

GHA - MCV1



Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 89 percent based on 1 survey(s). Measles rubella vaccine introduced in September 2013. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 90 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 90 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 85 percent based on 1 survey(s). Estimate challenged by: D-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	83	85	95	86	93	93	91	88	89	92	89	89
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	83	85	95	86	93	93	91	88	89	92	89	89
Administrative	88	85	95	92	94	92	92	93	89	93	94	95
Survey	85	NA	90	NA	NA	94	94	90	89	NA	NA	NA

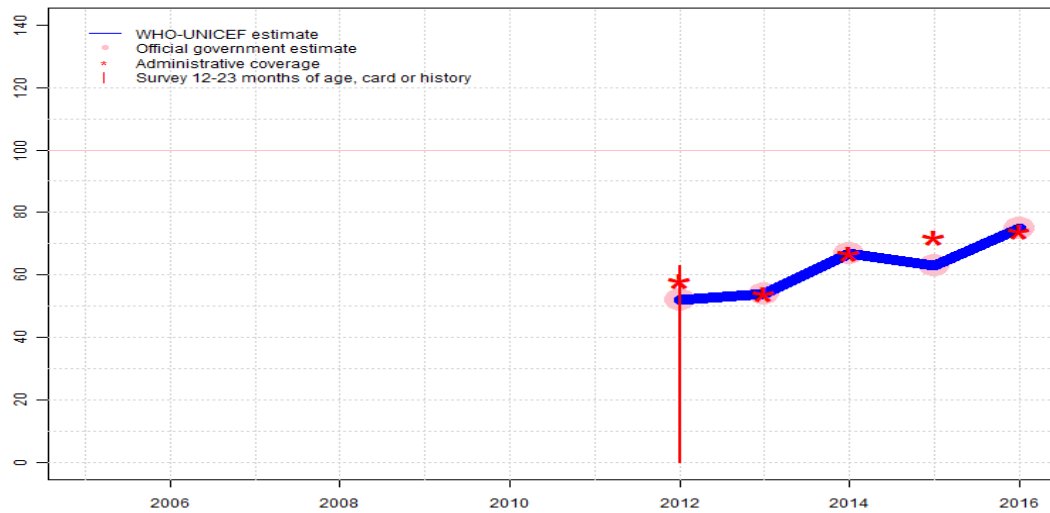
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Ghana - MCV2

GHA - MCV2



Description:

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

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate is based on reported data during inter-duction period. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate is based on reported data. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government. Measles rubella vaccine introduced in September 2013. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government. Ghana Demographic and Health Survey, 2014 results ignored by working group. Measles second dose introduced in 2012. Recommended at 18 months. Survey may not reflect data for vaccine introduction period. Estimate challenged by: D-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	52	54	67	63	75
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	52	54	67	63	75
Administrative	NA	NA	NA	NA	NA	NA	NA	58	54	67	72	74
Survey	NA	NA	NA	NA	NA	NA	NA	63	NA	NA	NA	NA

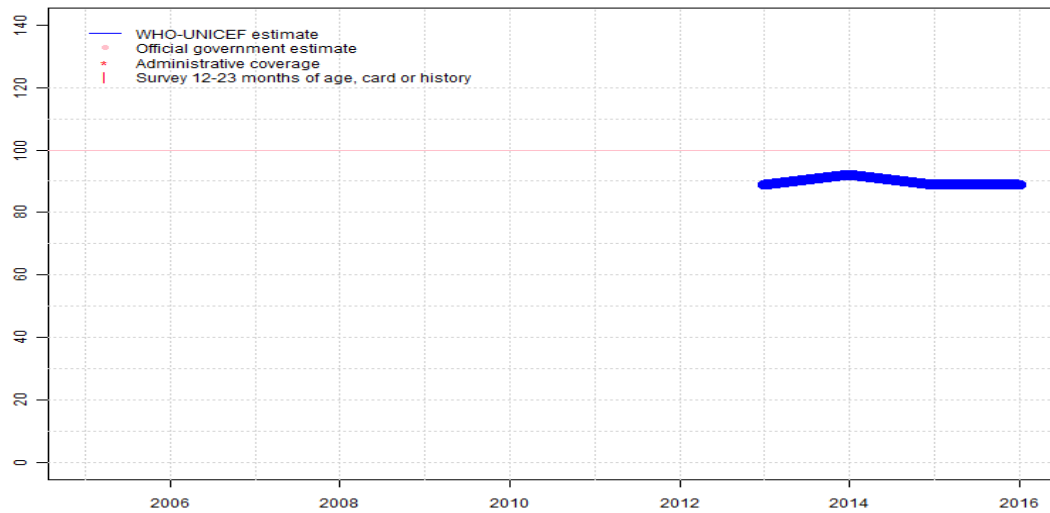
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Ghana - RCV1

GHA - RCV1



Description:

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

2016: Estimate based on estimated MCV1. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-

2015: Estimate based on estimated MCV1. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-

2014: Estimate based on estimated MCV1. Estimate challenged by: D-

2013: Estimate based on estimated MCV1. Estimate challenged by: D-

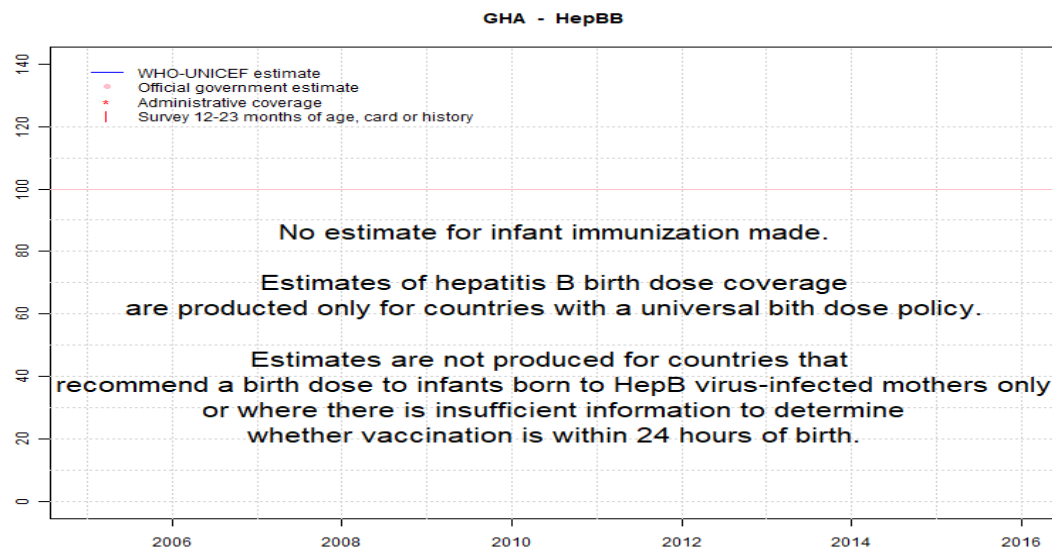
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	89	92	89	89
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Ghana - HepBB



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
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

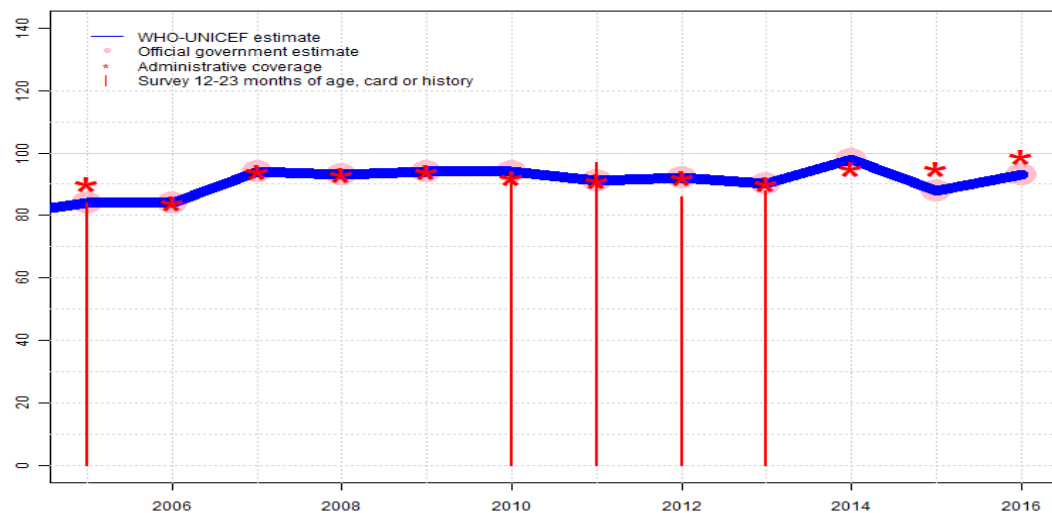
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Ghana - HepB3

GHA - HepB3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	84	84	94	93	94	94	91	92	90	98	88	93
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	84	84	94	93	94	94	91	92	90	98	88	93
Administrative	90	84	94	93	94	92	91	92	90	95	95	99
Survey	84	NA	NA	NA	NA	93	97	86	88	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.

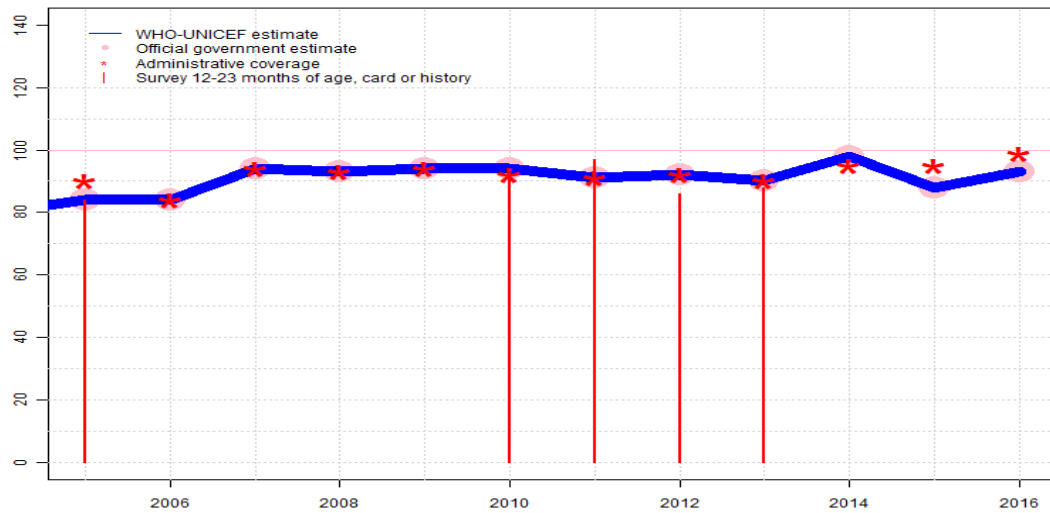
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 88 percent modified for recall bias to 94 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 87 percent and 3d dose card only coverage of 84 percent. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 86 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 79 percent and 3d dose card only coverage of 76 percent. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker 2011 card or history results of 93 percent modified for recall bias to 95 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 88 percent and 3d dose card only coverage of 85 percent. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey 2006 card or history results of 84 percent modified for recall bias to 87 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 84 percent and 3d dose card only coverage of 78 percent. Estimate challenged by: D-

Ghana - Hib3

GHA - Hib3



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	84	84	94	93	94	94	91	92	90	98	88	93
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	84	84	94	93	94	94	91	92	90	98	88	93
Administrative	90	84	94	93	94	92	91	92	90	95	95	99
Survey	84	NA	NA	NA	NA	93	97	86	88	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.

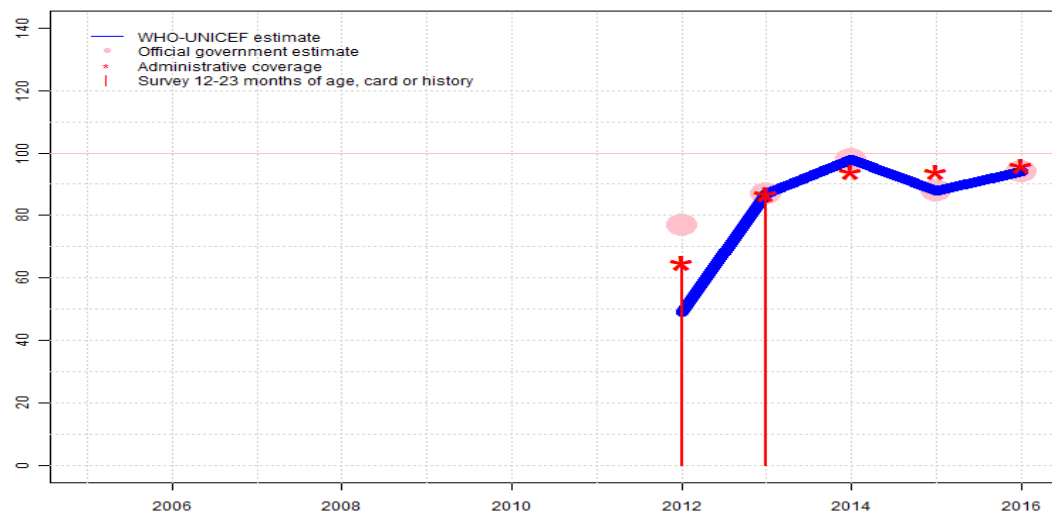
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 88 percent modified for recall bias to 94 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 87 percent and 3d dose card only coverage of 84 percent. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 86 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 79 percent and 3d dose card only coverage of 76 percent. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker 2011 card or history results of 93 percent modified for recall bias to 95 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 88 percent and 3d dose card only coverage of 85 percent. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Ghana Multiple Indicator Cluster Survey 2006 card or history results of 84 percent modified for recall bias to 87 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 84 percent and 3d dose card only coverage of 78 percent. Estimate challenged by: D-

Ghana - RotaC

GHA - RotaC



Description:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-S-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 89 percent based on 1 survey(s). Estimate challenged by: D-S-
- 2012: Rotavirus vaccine was introduced in 2012. 65 percent coverage in 75 percent of national target population. Estimate challenged by: D-R-S-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	49	87	98	88	94
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	77	87	98	88	94
Administrative	NA	NA	NA	NA	NA	NA	NA	65	87	94	94	96
Survey	NA	NA	NA	NA	NA	NA	NA	66	89	NA	NA	NA

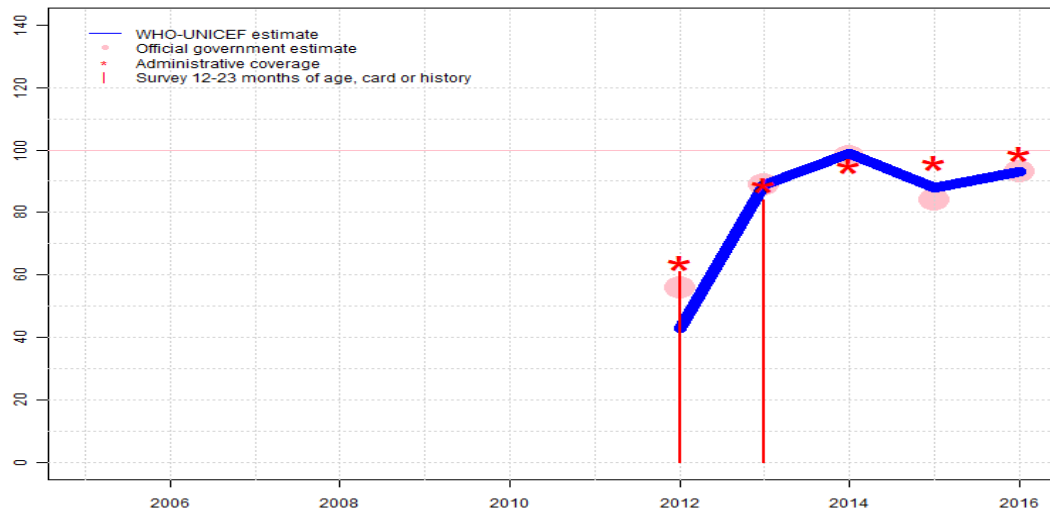
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Ghana - PcV3

GHA - PcV3



Description:

- 2016: Estimate is based on reported official coverage. Official estimate are based on 2017 EPI coverage survey results. Estimate challenged by: D-
- 2015: Estimate of 88 percent assigned by working group. Estimate is based on reported DTP3 coverage level. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2013 and 2015 levels. Estimate of 99 percent changed from previous revision value of 93 percent. Estimate challenged by: D-R-S-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 88 percent based on 1 survey(s). Ghana Demographic and Health Survey, 2014 card or history results of 84 percent modified for recall bias to 88 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 85 percent and 3d dose card only coverage of 80 percent. Estimate challenged by: D-S-
- 2012: Pneumococcal conjugate vaccine introduced in 2012. 64 percent coverage in 66 percent of national target population. Ghana Demographic and Health Survey, 2014 card or history results of 61 percent modified for recall bias to 65 percent based on 1st dose card or history coverage of 75 percent, 1st dose card only coverage of 61 percent and 3d dose card only coverage of 53 percent. Estimate challenged by: R-S-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	NA	NA	NA	NA	NA	NA	NA	43	89	99	88	93
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	56	89	98	84	93
Administrative	NA	NA	NA	NA	NA	NA	NA	64	89	95	96	99
Survey	NA	NA	NA	NA	NA	NA	NA	61	84	NA	NA	NA

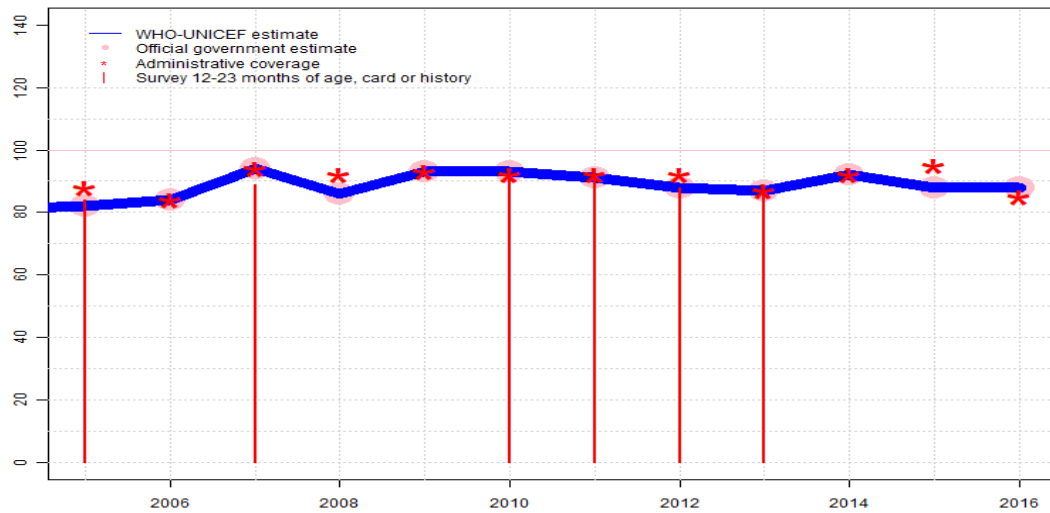
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Ghana - YFV

GHA - YFV



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Estimate	82	84	94	86	93	93	91	88	87	92	88	88
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	82	84	94	86	93	93	91	88	87	92	88	88
Administrative	88	84	94	92	93	92	92	92	87	92	95	85
Survey	84	NA	89	NA	NA	94	93	88	88	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:

- 2016: Estimate based on coverage reported by national government. Official estimate are based on 2017 EPI coverage survey results. Programme reports a 2 month vaccine stockout at national level. Decrease in admin data may be at least in part due to the stockout. Estimate challenged by: D-
- 2015: Estimate based on coverage reported by national government. Reported official government coverage level based on results of 2014 DHS. Estimate challenged by: D-
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government supported by survey. Survey evidence of 88 percent based on 1 survey(s). Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 88 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 93 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 94 percent based on 1 survey(s). Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 89 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 84 percent based on 1 survey(s). Estimate challenged by: D-

Ghana - survey details

2013 Ghana Demographic and Health Survey, 2014

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	97	12-23 m	1113	88
BCG	Card	87	12-23 m	982	88
BCG	Card or History	97	12-23 m	1113	88
BCG	History	10	12-23 m	132	88
DTP1	C or H <12 months	96	12-23 m	1113	88
DTP1	Card	87	12-23 m	982	88
DTP1	Card or History	97	12-23 m	1113	88
DTP1	History	9	12-23 m	132	88
DTP3	C or H <12 months	88	12-23 m	1113	88
DTP3	Card	84	12-23 m	982	88
DTP3	Card or History	88	12-23 m	1113	88
DTP3	History	4	12-23 m	132	88
HepB1	C or H <12 months	96	12-23 m	1113	88
HepB1	Card	87	12-23 m	982	88
HepB1	Card or History	97	12-23 m	1113	88
HepB1	History	9	12-23 m	132	88
HepB3	C or H <12 months	88	12-23 m	1113	88
HepB3	Card	84	12-23 m	982	88
HepB3	Card or History	88	12-23 m	1113	88
HepB3	History	4	12-23 m	132	88
Hib1	C or H <12 months	96	12-23 m	1113	88
Hib1	Card	87	12-23 m	982	88
Hib1	Card or History	97	12-23 m	1113	88
Hib1	History	9	12-23 m	132	88
Hib3	C or H <12 months	88	12-23 m	1113	88
Hib3	Card	84	12-23 m	982	88
Hib3	Card or History	88	12-23 m	1113	88
Hib3	History	4	12-23 m	132	88
MCV1	C or H <12 months	82	12-23 m	1113	88
MCV1	Card	80	12-23 m	982	88
MCV1	Card or History	89	12-23 m	1113	88
MCV1	History	9	12-23 m	132	88
MCV2	C or H <24 months	60	24-35 m	1090	88
PcV1	C or H <12 months	93	12-23 m	1113	88
PcV1	Card	85	12-23 m	982	88
PcV1	Card or History	93	12-23 m	1113	88
PcV1	History	8	12-23 m	132	88

PcV3	C or H <12 months	83	12-23 m	1113	88
PcV3	Card	80	12-23 m	982	88
PcV3	Card or History	84	12-23 m	1113	88
PcV3	History	4	12-23 m	132	88
Pol1	C or H <12 months	97	12-23 m	1113	88
Pol1	Card	88	12-23 m	982	88
Pol1	Card or History	97	12-23 m	1113	88
Pol1	History	9	12-23 m	132	88
Pol3	C or H <12 months	83	12-23 m	1113	88
Pol3	Card	83	12-23 m	982	88
Pol3	Card or History	84	12-23 m	1113	88
Pol3	History	1	12-23 m	132	88
RotaC	C or H <12 months	88	12-23 m	1113	88
RotaC	Card	82	12-23 m	982	88
RotaC	Card or History	89	12-23 m	1113	88
RotaC	History	6	12-23 m	132	88
YFV	C or H <12 months	79	12-23 m	1113	88
YFV	Card	79	12-23 m	982	88
YFV	Card or History	88	12-23 m	1113	88
YFV	History	9	12-23 m	132	88

2012 Ghana Demographic and Health Survey, 2014

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	97	24-35 m	1090	88
BCG	Card	79	24-35 m	872	88
BCG	Card or History	97	24-35 m	1090	88
BCG	History	18	24-35 m	218	88
DTP1	C or H <12 months	96	24-35 m	1090	88
DTP1	Card	79	24-35 m	872	88
DTP1	Card or History	96	24-35 m	1090	88
DTP1	History	18	24-35 m	218	88
DTP3	C or H <12 months	86	24-35 m	1090	88
DTP3	Card	76	24-35 m	872	88
DTP3	Card or History	86	24-35 m	1090	88
DTP3	History	10	24-35 m	218	88
HepB1	C or H <12 months	96	24-35 m	1090	88
HepB1	Card	79	24-35 m	872	88
HepB1	Card or History	96	24-35 m	1090	88

Ghana - survey details

HepB1	History	18	24-35 m	218	88
HepB3	C or H <12 months	86	24-35 m	1090	88
HepB3	Card	76	24-35 m	872	88
HepB3	Card or History	86	24-35 m	1090	88
HepB3	History	10	24-35 m	218	88
Hib1	C or H <12 months	96	24-35 m	1090	88
Hib1	Card	79	24-35 m	872	88
Hib1	Card or History	96	24-35 m	1090	88
Hib1	History	18	24-35 m	218	88
Hib3	C or H <12 months	86	24-35 m	1090	88
Hib3	Card	76	24-35 m	872	88
Hib3	Card or History	86	24-35 m	1090	88
Hib3	History	10	24-35 m	218	88
MCV1	C or H <12 months	90	24-35 m	1090	88
MCV1	Card	73	24-35 m	872	88
MCV1	Card or History	90	24-35 m	1090	88
MCV1	History	17	24-35 m	218	88
MCV2	Card	52	24-35 m	872	88
MCV2	Card or History	63	24-35 m	1090	88
MCV2	History	12	24-35 m	218	88
PcV1	C or H <12 months	75	24-35 m	1090	88
PcV1	Card	61	24-35 m	872	88
PcV1	Card or History	75	24-35 m	1090	88
PcV1	History	14	24-35 m	218	88
PcV3	C or H <12 months	61	24-35 m	1090	88
PcV3	Card	53	24-35 m	872	88
PcV3	Card or History	61	24-35 m	1090	88
PcV3	History	8	24-35 m	218	88
Pol1	C or H <12 months	96	24-35 m	1090	88
Pol1	Card	79	24-35 m	872	88
Pol1	Card or History	96	24-35 m	1090	88
Pol1	History	17	24-35 m	218	88
Pol3	C or H <12 months	80	24-35 m	1090	88
Pol3	Card	76	24-35 m	872	88
Pol3	Card or History	80	24-35 m	1090	88
Pol3	History	4	24-35 m	218	88
RotaC	C or H <12 months	66	24-35 m	1090	88
RotaC	Card	55	24-35 m	872	88
RotaC	Card or History	66	24-35 m	1090	88
RotaC	History	11	24-35 m	218	88

YFV	C or H <12 months	87	24-35 m	1090	88
YFV	Card	72	24-35 m	872	88
YFV	Card or History	88	24-35 m	1090	88
YFV	History	16	24-35 m	218	88

2011 Ghana EPI Cluster Survey 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	96	12-23 m	300	98
BCG	Card or History	99	12-23 m	300	98
DTP1	Card	98	12-23 m	300	98
DTP1	Card or History	100	12-23 m	300	98
DTP3	Card	95	12-23 m	300	98
DTP3	Card or History	97	12-23 m	300	98
HepB1	Card	98	12-23 m	300	98
HepB1	Card or History	100	12-23 m	300	98
HepB3	Card	95	12-23 m	300	98
HepB3	Card or History	97	12-23 m	300	98
Hib1	Card	98	12-23 m	300	98
Hib1	Card or History	100	12-23 m	300	98
Hib3	Card	95	12-23 m	300	98
Hib3	Card or History	97	12-23 m	300	98
MCV1	Card	92	12-23 m	300	98
MCV1	Card or History	94	12-23 m	300	98
Pol1	Card	98	12-23 m	300	98
Pol1	Card or History	100	12-23 m	300	98
Pol3	Card	97	12-23 m	300	98
Pol3	Card or History	97	12-23 m	300	98
YFV	Card	91	12-23 m	300	98
YFV	Card or History	93	12-23 m	300	98

2010 Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	98	12-23 m	1453	89
BCG	Card	86	12-23 m	-	89

Ghana - survey details

BCG	Card or History	98	12-23 m	1453	89
BCG	History	12	12-23 m	-	89
DTP1	C or H <12 months	98	12-23 m	1453	89
DTP1	Card	88	12-23 m	-	89
DTP1	Card or History	98	12-23 m	1453	89
DTP1	History	11	12-23 m	-	89
DTP3	C or H <12 months	92	12-23 m	1453	89
DTP3	Card	85	12-23 m	-	89
DTP3	Card or History	93	12-23 m	1453	89
DTP3	History	8	12-23 m	-	89
HepB1	C or H <12 months	98	12-23 m	1453	89
HepB1	Card	88	12-23 m	-	89
HepB1	Card or History	98	12-23 m	1453	89
HepB1	History	11	12-23 m	-	89
HepB3	C or H <12 months	92	12-23 m	1453	89
HepB3	Card	85	12-23 m	-	89
HepB3	Card or History	93	12-23 m	1453	89
HepB3	History	8	12-23 m	-	89
Hib1	C or H <12 months	98	12-23 m	1453	89
Hib1	Card	88	12-23 m	-	89
Hib1	Card or History	98	12-23 m	1453	89
Hib1	History	11	12-23 m	-	89
Hib3	C or H <12 months	92	12-23 m	1453	89
Hib3	Card	85	12-23 m	-	89
Hib3	Card or History	93	12-23 m	1453	89
Hib3	History	8	12-23 m	-	89
MCV1	C or H <12 months	88	12-23 m	1453	89
MCV1	Card	81	12-23 m	-	89
MCV1	Card or History	94	12-23 m	1453	89
MCV1	History	13	12-23 m	-	89
Pol1	C or H <12 months	98	12-23 m	1453	89
Pol1	Card	87	12-23 m	-	89
Pol1	Card or History	99	12-23 m	1453	89
Pol1	History	12	12-23 m	-	89
Pol3	C or H <12 months	91	12-23 m	1453	89
Pol3	Card	85	12-23 m	-	89
Pol3	Card or History	91	12-23 m	1453	89
Pol3	History	6	12-23 m	-	89
YFV	C or H <12 months	88	12-23 m	1453	89
YFV	Card	81	12-23 m	-	89

YFV	Card or History	94	12-23 m	1453	89
YFV	History	12	12-23 m	-	89

2007 Ghana Demographic and Health Survey 2008

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	96	12-23 m	552	86
BCG	Card	83	12-23 m	552	86
BCG	Card or History	96	12-23 m	552	86
BCG	History	13	12-23 m	552	86
DTP1	C or H <12 months	98	12-23 m	552	86
DTP1	Card	85	12-23 m	552	86
DTP1	Card or History	98	12-23 m	552	86
DTP1	History	13	12-23 m	552	86
DTP3	C or H <12 months	88	12-23 m	552	86
DTP3	Card	82	12-23 m	552	86
DTP3	Card or History	89	12-23 m	552	86
DTP3	History	7	12-23 m	552	86
MCV1	C or H <12 months	80	12-23 m	552	86
MCV1	Card	79	12-23 m	552	86
MCV1	Card or History	90	12-23 m	552	86
MCV1	History	11	12-23 m	552	86
Pol1	C or H <12 months	97	12-23 m	552	86
Pol1	Card	85	12-23 m	552	86
Pol1	Card or History	97	12-23 m	552	86
Pol1	History	12	12-23 m	552	86
Pol3	C or H <12 months	85	12-23 m	552	86
Pol3	Card	81	12-23 m	552	86
Pol3	Card or History	86	12-23 m	552	86
Pol3	History	5	12-23 m	552	86
YFV	C or H <12 months	78	12-23 m	552	86
YFV	Card	79	12-23 m	552	86
YFV	Card or History	89	12-23 m	552	86
YFV	History	10	12-23 m	552	86

2005 Ghana Multiple Indicator Cluster Survey 2006

Ghana - survey details

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	94	12-23 m	706	85
BCG	Card	83	12-23 m	706	85
BCG	Card or History	94	12-23 m	706	85
BCG	History	11	12-23 m	706	85
DTP1	C or H <12 months	94	12-23 m	706	85
DTP1	Card	84	12-23 m	706	85
DTP1	Card or History	94	12-23 m	706	85
DTP1	History	10	12-23 m	706	85
DTP3	C or H <12 months	81	12-23 m	706	85
DTP3	Card	78	12-23 m	706	85
DTP3	Card or History	84	12-23 m	706	85
DTP3	History	6	12-23 m	706	85
HepB1	C or H <12 months	94	12-23 m	706	85
HepB1	Card	84	12-23 m	706	85
HepB1	Card or History	94	12-23 m	706	85
HepB1	History	10	12-23 m	706	85
HepB3	C or H <12 months	81	12-23 m	706	85
HepB3	Card	78	12-23 m	706	85
HepB3	Card or History	84	12-23 m	706	85
HepB3	History	6	12-23 m	706	85
Hib1	C or H <12 months	94	12-23 m	706	85
Hib1	Card	84	12-23 m	706	85
Hib1	Card or History	94	12-23 m	706	85
Hib1	History	10	12-23 m	706	85
Hib3	C or H <12 months	81	12-23 m	706	85
Hib3	Card	78	12-23 m	706	85
Hib3	Card or History	84	12-23 m	706	85
Hib3	History	6	12-23 m	706	85
MCV1	C or H <12 months	78	12-23 m	706	85
MCV1	Card	74	12-23 m	706	85
MCV1	Card or History	85	12-23 m	706	85
MCV1	History	11	12-23 m	706	85
Pol1	C or H <12 months	96	12-23 m	706	85
Pol1	Card	84	12-23 m	706	85
Pol1	Card or History	96	12-23 m	706	85
Pol1	History	12	12-23 m	706	85
Pol3	C or H <12 months	80	12-23 m	706	85
Pol3	Card	76	12-23 m	706	85
Pol3	Card or History	82	12-23 m	706	85

Pol3	History	6	12-23 m	706	85
YFV	C or H <12 months	77	12-23 m	706	85
YFV	Card	74	12-23 m	706	85
YFV	Card or History	84	12-23 m	706	85
YFV	History	10	12-23 m	706	85

2002 Ghana National Demographic and Health Survey 2003

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	90	12-23 m	695	83
BCG	Card	79	12-23 m	695	83
BCG	Card or history	91	12-23 m	695	83
BCG	History	12	12-23 m	695	83
DTP1	C or H <12 months	90	12-23 m	695	83
DTP1	Card	80	12-23 m	695	83
DTP1	Card or history	91	12-23 m	695	83
DTP1	History	10	12-23 m	695	83
DTP3	C or H <12 months	77	12-23 m	695	83
DTP3	Card	74	12-23 m	695	83
DTP3	Card or history	80	12-23 m	695	83
DTP3	History	5	12-23 m	695	83
MCV1	C or H <12 months	69	12-23 m	695	83
MCV1	Card	74	12-23 m	695	83
MCV1	Card or history	83	12-23 m	695	83
MCV1	History	9	12-23 m	695	83
Pol1	C or H <12 months	92	12-23 m	695	83
Pol1	Card	82	12-23 m	695	83
Pol1	Card or history	93	12-23 m	695	83
Pol1	History	12	12-23 m	695	83
Pol3	C or H <12 months	76	12-23 m	695	83
Pol3	Card	74	12-23 m	695	83
Pol3	Card or history	79	12-23 m	695	83
Pol3	History	5	12-23 m	695	83
YFV	C or H <12 months	58	12-23 m	695	83
YFV	Card	69	12-23 m	695	83
YFV	Card or history	77	12-23 m	695	83
YFV	History	8	12-23 m	695	83

Ghana - survey details

1997 Ghana Demographic and Health Survey 1998

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	86	12-23 m	1193	76
BCG	Card or History	84	12-23 m	1193	76
DTP1	C or H <12 months	88	12-23 m	1193	76
DTP1	Card or History	82	12-23 m	1193	76
DTP3	C or H <12 months	68	12-23 m	1193	76
DTP3	Card or History	59	12-23 m	1193	76

MCV1	C or H <12 months	61	12-23 m	1193	76
MCV1	Card or History	58	12-23 m	1193	76
Pol1	C or H <12 months	90	12-23 m	1193	76
Pol1	Card or History	85	12-23 m	1193	76
Pol3	C or H <12 months	67	12-23 m	1193	76
Pol3	Card or History	58	12-23 m	1193	76
YFV	C or H <12 months	39	12-23 m	1193	76
YFV	Card or History	40	12-23 m	1193	76

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