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:

*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around possible biases in available data. For methods see:


SURVEY coverage: percentage of surviving infants who received at least one dose of Bacillus Calmette Guerin 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.
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: Reported data calibrated to 2003 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Preliminary 2016 SA-DHS survey results suggest coverage of 93 percent. Estimate challenged by: R-

2015: Reported data calibrated to 2003 levels. Programme reports three month national level stock-out. Estimate of 67 percent changed from previous revision value of 69 percent. GoC=Assigned by working group. Consistency with other vaccines absent evidence otherwise.

2014: Reported data calibrated to 2003 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate challenged by: D-R-

2013: Reported data calibrated to 2003 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 73 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2003 levels. Estimate of 73 percent changed from previous revision value of 84 percent. Estimate challenged by: D-R-

2011: Reported data calibrated to 2003 levels. Estimate of 72 percent changed from previous revision value of 78 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 2003 levels. Estimate of 70 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-

2009: Reported data calibrated to 2003 levels. Estimate of 73 percent changed from previous revision value of 78 percent. Estimate challenged by: D-R-

2008: Reported data calibrated to 2003 levels. Estimate of 77 percent changed from previous revision value of 60 percent. Estimate challenged by: D-R-


2006: Reported data calibrated to 2003 levels. Estimate of 75 percent changed from previous revision value of 63 percent. Estimate challenged by: R-

2005: Reported data calibrated to 2003 levels. Estimate of 73 percent changed from previous revision value of 70 percent. Estimate challenged by: R-
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: Reported data calibrated to 2013 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Programme reports one month national and district stock-out. Preliminary 2016 SA-DHS survey results suggest coverage of 91 percent. Estimate challenged by: R-

2015: Reported data calibrated to 2013 levels. Estimate of 83 percent changed from previous revision value of 72 percent. Estimate challenged by: R-

2014: Reported data calibrated to 2013 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 85 percent changed from previous revision value of 73 percent. Estimate challenged by: R-

2013: Estimate of 81 percent assigned by working group. Estimate is based on the year to year change in the reported data from 2012 to 2013. Decreases in coverage may reflect use of revised target population estimates. Estimate of 81 percent changed from previous revision value of 69 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2005 and 2013 levels. Estimate of 72 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R-

2011: Reported data calibrated to 2005 and 2013 levels. Estimate of 80 percent changed from previous revision value of 77 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 2005 and 2013 levels. Reported data excluded. Reported data for DTP1 and DTP3 inconsistent with that reported in surrounding periods. Estimate of 80 percent changed from previous revision value of 77 percent. Estimate challenged by: R-

2009: Reported data calibrated to 2005 and 2013 levels. Reported data excluded due to decline in reported coverage from 109 percent to 14 percent with increase to 69 percent. Estimate of 81 percent changed from previous revision value of 77 percent. Estimate challenged by: D-R-

2008: Reported data calibrated to 2005 and 2013 levels. Reported data excluded because 109 percent greater than 100 percent. Estimate of 81 percent changed from previous revision value of 76 percent. Estimate challenged by: D-R-

2007: Reported data calibrated to 2005 and 2013 levels. South African National HIV Prevalence, Incidence, Behaviour and Communication Survey, 2008 results ignored by working group. Nonstandard analysis of survey results; awaiting clarification from national authorities. Reported data excluded. Reported data for DTP1 and DTP3 inconsistent with that reported in surrounding periods. Reported data excluded because 104 percent greater than 100 percent. Estimate of 83 percent changed from previous revision value of 76 percent. Estimate challenged by: D-R-

2006: Reported data calibrated to 2005 and 2013 levels. Reported data excluded. Reported data for DTP1 and DTP3 inconsistent with that reported in surrounding periods. Reported data excluded because 104 percent greater than 100 percent. Estimate of 82 percent
changed from previous revision value of 75 percent. Estimate challenged by: D-R-
2005. Estimate of 83 percent assigned by working group. Estimate based on the estimated DTP3
coverage and absolute difference in reported coverage for DTP1 and DTP3. Reported
data excluded because 101 percent greater than 100 percent. Estimate of 83 percent
changed from previous revision value of 75 percent. Estimate challenged by: D-R-
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:** Reported data calibrated to 2003 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Programme reports one month national and district stock-out. Preliminary 2016 SA-DHS survey results suggest coverage of 65 percent. Estimate challenged by: D-R-
- **2015:** Reported data calibrated to 2003 levels. Estimate of 75 percent changed from previous revision value of 69 percent. Estimate challenged by: D-R-
- **2014:** Reported data calibrated to 2003 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 77 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R-
- **2013:** Reported data calibrated to 2003 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 73 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-
- **2012:** Reported data calibrated to 2003 levels. Estimate of 65 percent changed from previous revision value of 68 percent. Estimate challenged by: D-R-
- **2011:** Reported data calibrated to 2003 levels. Estimate of 69 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-
- **2010:** Reported data calibrated to 2003 levels. Reported data excluded. Reported data for DTP1 and DTP3 inconsistent with that reported in surrounding periods. Estimate of 72 percent changed from previous revision value of 66 percent. Estimate challenged by: R-
- **2009:** Reported data calibrated to 2003 levels. Reported data excluded due to decline in reported coverage from 105 percent to 12 percent with increase to 63 percent. Estimate of 76 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R-
- **2008:** Reported data calibrated to 2003 levels. Reported data excluded because 105 percent greater than 100 percent. Estimate of 79 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-
- **2007:** Reported data calibrated to 2003 levels. South African National HIV Prevalence, Incidence, Behaviour and Communication Survey, 2008 results ignored by working group. Nonstandard analysis of survey results; awaiting clarification from national authorities. Estimate of 82 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-
- **2006:** Reported data calibrated to 2003 levels. Estimate of 82 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-
- **2005:** Reported data calibrated to 2003 levels. Estimate of 79 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-
The WHO and UNICEF estimates of national immunization coverage (uemic) 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.

**Estimate GoC**

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</table>

**Description:**

- 2016: Reported data calibrated to 2010 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Preliminary 2016 SA-DHS survey results suggest coverage of 65 percent. Estimate challenged by: D-R-
- 2015: Reported data calibrated to 2010 levels. Estimate of 75 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2010 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 77 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2010 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 73 percent changed from previous revision value of 66 percent. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2010 levels. Estimate of 65 percent changed from previous revision value of 69 percent. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2010 levels. Estimate of 69 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-
- 2010: Estimate of 72 percent assigned by working group. Estimate is based on estimated DTP3 coverage level. Reported data excluded. Reported decrease in coverage may be partially explained with change in vaccination presentation and reporting practices. Estimate of 72 percent changed from previous revision value of 74 percent. Estimate challenged by: R-
- 2009: Reported data calibrated to 2003 and 2010 levels. Reported data excluded. Reported decrease in coverage may be partially explained with change in vaccination presentation and reporting practices. Reported data excluded due to decline in reported coverage from 105 percent to 12 percent with increase to 63 percent. Estimate of 75 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-
- 2008: Reported data calibrated to 2003 and 2010 levels. Reported data excluded because 105 percent greater than 100 percent. Estimate of 77 percent changed from previous revision value of 75 percent. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2003 and 2010 levels. Estimate of 79 percent changed from previous revision value of 75 percent. Estimate challenged by: D-R-
- 2005: Reported data calibrated to 2003 and 2010 levels. Estimate of 75 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-
The WHO and UNICEF estimates of national immunization coverage (wunic) 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.

2016: Estimate is based on estimated DTP3 coverage level. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Programme reports one month national and district stock-out. Estimate challenged by: D-R-

2015: IPV introduced during 2009. Estimate is based on estimated DTP3 coverage level. Estimate of 83 percent changed from previous revision value of 95 percent. GoC=Assigned by working group. Consistency with other vaccines absent evidence otherwise.
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 2016: Reported data calibrated to 2003 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Recommended age of vaccination for measles changed for first dose from 9 months to 6 months. Preliminary 2016 SA-DHS survey results suggest coverage of 86 percent. Estimate challenged by: D-R.

2015: Reported data calibrated to 2003 levels. Estimate challenged by: D-R.

2014: Reported data calibrated to 2003 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 71 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R.

2013: Reported data calibrated to 2003 levels. Decreases in coverage may reflect use of revised target population estimates. Decline in reported coverage may be due to 2 months of stock outs. Estimate challenged by: D-R.

2012: Reported data calibrated to 2003 levels. Estimate of 68 percent changed from previous revision value of 79 percent. Estimate challenged by: D-R.

2011: Reported data calibrated to 2003 levels. Estimate of 68 percent changed from previous revision value of 78 percent. Estimate challenged by: D-R.

2010: Reported data calibrated to 2003 levels. Estimate of 64 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R.

2009: Reported data calibrated to 2003 levels. Estimate of 70 percent changed from previous revision value of 78 percent. Estimate challenged by: D-R.

2008: Reported data calibrated to 2003 levels. Estimate of 67 percent changed from previous revision value of 64 percent. Estimate challenged by: D-R.


2006: Reported data calibrated to 2003 levels. Estimate of 65 percent changed from previous revision value of 64 percent. Estimate challenged by: D-R.

2005: Reported data calibrated to 2003 levels. Estimate of 62 percent changed from previous revision value of 63 percent. Estimate challenged by: D-R.

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.

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WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2018

data received as of July 3, 2017
Coverage estimates for the second dose of measles containing vaccine are for children by the nationally recommended age.

2016: Reported data calibrated to 2003 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Recommended age of vaccination for measles changed for second dose from 18 months to 12 months. Preliminary 2016 SA-DHS survey results suggest coverage of 59 percent. Estimate challenged by: D-R-

2015: Reported data calibrated to 2003 levels. Estimate of 66 percent changed from previous revision value of 63 percent. Estimate challenged by: D-R-

2014: Reported data calibrated to 2003 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 62 percent changed from previous revision value of 60 percent. Estimate challenged by: D-R-

2013: Reported data calibrated to 2003 levels. Decreases in coverage may reflect use of revised target population estimates. Decline in reported coverage may be due to 2 months of stock outs. Estimate of 56 percent changed from previous revision value of 53 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2003 levels. Estimate of 59 percent changed from previous revision value of 67 percent. Estimate challenged by: D-R-

2011: Reported data calibrated to 2003 levels. Estimate of 58 percent changed from previous revision value of 62 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 2003 levels. Estimate of 59 percent changed from previous revision value of 62 percent. Estimate challenged by: D-R-

2009: Reported data calibrated to 2003 levels. Estimate challenged by: D-R-

2008: Reported data calibrated to 2003 levels. Estimate of 57 percent changed from previous revision value of 49 percent. Estimate challenged by: D-R-

2007: Reported data calibrated to 2003 levels. Estimate of 52 percent changed from previous revision value of 48 percent. Estimate challenged by: D-R-

2006: Reported data calibrated to 2003 levels. Estimate of 55 percent changed from previous revision value of 51 percent. Estimate challenged by: D-R-

2005: Reported data calibrated to 2003 levels. Estimate of 49 percent changed from previous revision value of 44 percent. Estimate challenged by: D-R-

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.
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.
The WHO and UNICEF estimates of national immunization coverage (wunic) 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.
The WHO and UNICEF estimates of national immunization coverage (vaccination) 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.

South Africa - HepB3

Description:

2016: Reported data calibrated to 2015 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Programme reports one month national and district stock-out. Preliminary 2016 SA-DHS survey results suggest coverage of 65 percent. Estimate challenged by: D-R-

2015: Estimate of 75 percent assigned by working group. Estimate is based on estimated DTP3 coverage level. Estimate of 75 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 and 2015 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 80 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 and 2015 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 70 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2011 and 2015 levels. Estimate of 68 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-

2011: Estimate of 76 percent assigned by working group. Estimate is based on estimated DTP3 coverage level. Estimate of 76 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 2003 and 2011 levels. Estimate of 71 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-

2009: Reported data calibrated to 2003 and 2011 levels. Estimate of 74 percent changed from previous revision value of 70 percent. GoC=No accepted empirical data

2008: Reported data calibrated to 2003 and 2011 levels. Estimate of 76 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-


2006: Reported data calibrated to 2003 and 2011 levels. Estimate of 83 percent changed from previous revision value of 76 percent. Estimate challenged by: D-R-

2005: Reported data calibrated to 2003 and 2011 levels. Estimate of 79 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-
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.
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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.

South Africa - Hib3

Description:

2016: Reported data calibrated to 2010 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Programme reports one month national and district stock-out. Preliminary 2016 SA-DHS survey results suggest coverage of 65 percent. Estimate challenged by: D-R-

2015: Reported data calibrated to 2010 levels. Estimate of 75 percent changed from previous revision value of 69 percent. Estimate challenged by: D-R-

2014: Reported data calibrated to 2010 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 77 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R-

2013: Reported data calibrated to 2010 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 73 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2010 levels. Estimate of 65 percent changed from previous revision value of 68 percent. Estimate challenged by: D-R-

2011: Reported data calibrated to 2010 levels. Estimate of 69 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-

2010: Estimate of 72 percent assigned by working group. Estimate is based on estimated DTP3 coverage level. Reported data excluded. Reported decrease in coverage may be partially explained with change in vaccination presentation and reporting practices. Estimate of 72 percent changed from previous revision value of 66 percent. Estimate challenged by: R-

2009: Reported data calibrated to 2003 and 2010 levels. Reported data excluded. Reported decrease in coverage may be partially explained with change in vaccination presentation and reporting practices. Reported data excluded due to decline in reported coverage from 105 percent to 12 percent with increase to 63 percent. Estimate of 77 percent changed from previous revision value of 70 percent. Estimate challenged by: D-R-

2008: Reported data calibrated to 2003 and 2010 levels. Reported data excluded because 105 percent greater than 100 percent. Estimate of 80 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-


2006: Reported data calibrated to 2003 and 2010 levels. Estimate of 84 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-

2005: Reported data calibrated to 2003 and 2010 levels. Estimate of 82 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-
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.

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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: Estimates follows reported data calibrated down based on adjustment factor from DTP3 calculation. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Preliminary 2016 SA-DHS survey results suggest coverage of 70 percent. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Estimate of 77 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 76 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 71 percent changed from previous revision value of 64 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2011 levels. Estimate of 71 percent changed from previous revision value of 78 percent. Estimate challenged by: D-R-

2011: Estimate of 67 percent assigned by working group. Estimate is based on reported data adjusted by the difference between estimated and reported DTP3 coverage levels. Estimate of 67 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-

2010: Estimate is based on reported data. Estimate of 60 percent changed from previous revision value of 66 percent. GoC=R+ D+

2009: Estimate based on reported data. Rotavirus vaccine introduced in 2009 Estimate of 17 percent changed from previous revision value of 19 percent. GoC=R+ D+
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.

### Description:

2016: Reported data calibrated to 2011 levels. WHO and UNICEF are aware of the conduct of a Demographic and Health Survey and await the final results. Preliminary 2016 SA-DHS survey results suggest coverage of 62 percent. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Estimate of 77 percent changed from previous revision value of 69 percent. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Unexplained decline in reported target population for 2014 compared to 2013 following substantial increase in target population between 2012 and 2013. WHO and UNICEF encourage a revision of the reported coverage time series using updated population estimates following the release of the recent census. Estimate of 72 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Decreases in coverage may reflect use of revised target population estimates. Estimate of 69 percent changed from previous revision value of 62 percent. Estimate challenged by: D-R-

2012: Reported data calibrated to 2011 levels. Estimate of 70 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-

2011: Estimate of 62 percent assigned by working group. Estimate is based on reported data adjusted by the difference between estimated and reported DTP3 coverage levels. Estimate of 62 percent changed from previous revision value of 72 percent. Estimate challenged by: D-R-

2010: Estimate is based on reported data. Estimate of 58 percent changed from previous revision value of 64 percent. GoC=R+ D+

2009: Estimate based on reported data. Pneumococcal conjugate vaccine introduced in 2009 GoC=R+ D+

### Notes:

- **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.
## South Africa - survey details


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### 2003 South Africa Demographic and Health Survey 2003

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### 1997 South Africa Demographic and Health Survey 1998

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<th>Pol1</th>
<th>C or H &lt;12 months</th>
<th>90</th>
<th>12-23 m</th>
<th>973</th>
<th>75</th>
</tr>
</thead>
<tbody>
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<td>Card or History</td>
<td>91</td>
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</tr>
</tbody>
</table>

| Pol3   | Card or History  | 72 | 12-23 m | 973 | 75 |

Further information and estimates for previous years are available at:
http://www.data.unicef.org/child-health/immunization