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 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. Co verage 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 2011 levels. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Preliminary DHS 2016 results suggest coverage of 96 percent for the 2014-15 birth cohort. Estimate challenged by: R-

2015: Reported data calibrated to 2011 levels. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: R-

2014: Reported data calibrated to 2011 levels. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Programme reports four month stock-out at national level. Estimate challenged by: R-

2013: Reported data calibrated to 2011 levels. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: R-

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: S-

2009: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2005: Estimate of 90 percent assigned by working group. Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Estimate challenged by: R-
The WHO and UNICEF estimates of national immunization coverage (wunieic) 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 extrapolation from data reported by national government. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Preliminary DHS 2016 results suggest coverage of 95 percent for the 2014-15 birth cohort. Estimate challenged by: D-

#### 2015:
Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: D-

#### 2014:
Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Estimate challenged by: D-

#### 2013:
Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Reported data excluded because 106 percent greater than 100 percent. Estimate challenged by: D-

#### 2012:
Estimate based on extrapolation from data reported by national government. 1 month vaccine shortage. GoC=R+ S+ D+

#### 2011:
Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R+ S+ D+

#### 2010:
Estimate based on coverage reported by national government supported by survey. Survey evidence of 93 percent based on 1 survey(s). GoC=R+ S+ D+

#### 2009:
Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

#### 2008:
Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

#### 2007:
Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

#### 2006:
Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

#### 2005:
Estimate of 90 percent assigned by working group. Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Estimate challenged by: R-
Uganda - DTP3

Description:

2016: Estimate based on extrapolation from data reported by national government. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Preliminary DHS 2016 results suggest coverage of 79 percent for the 2014-15 birth cohort. Estimate challenged by: D-

2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: D-

2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Estimate challenged by: D-

2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-S-

2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. Estimate challenged by: S-

2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). GoC=R+ S+ D+

2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). Uganda Demographic and Health Survey 2011 card or history results of 72 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 58 percent and 3d dose card only coverage of 50 percent. Estimate challenged by: S-

2009: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-S-

2008: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2006: Reported data calibrated to 2005 and 2010 levels. 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.

July 4, 2017; page 5

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

data received as of July 3, 2017
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.

### 2016
- **Description:** Estimate based on extrapolation from data reported by national government. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Preliminary DHS 2016 results suggest coverage of 66 percent for the 2014-15 birth cohort. Estimate challenged by: D-

### 2015
- **Description:** Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: D-

### 2014
- **Description:** Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Estimate challenged by: D-

### 2013
- **Description:** Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-

### 2012
- **Description:** Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ S+ D+

### 2011
- **Description:** Estimate based on coverage reported by national government. GoC=R+ S+ D+

### 2010
- **Description:** Estimate is based on reported data to maintain consistency with other vaccines. Uganda Demographic and Health Survey 2011 card or history results of 63 percent modified for recall bias to 79 percent of 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 58 percent and 3d dose card only coverage of 49 percent. GoC=R+ S+ D+

### 2009
- **Description:** Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

### 2008
- **Description:** Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

### 2007
- **Description:** Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

### 2006
- **Description:** Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: D-R-

### 2005
- **Description:** Estimate of 59 percent assigned by working group. Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Uganda Demographic and Health Survey 2006 card or history results of 59 percent modified for recall bias to 72 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 61 percent and 3d dose card only coverage of 49 percent. Estimate challenged by: D-R-S-
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: Inactivated polio vaccine introduced during 2016. Estimate based exceptionally on reported data during introduction period. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-R-
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: Estimate based on extrapolation from data reported by national government. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. GoC=R+ D+

2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Quality of data on number of children vaccinated possibly due to some districts adding together routine and campaign doses. Estimate challenged by: D-

2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Programme reports two month stock-out at national level. Estimate challenged by: D-

2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-

2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 85 percent based on 1 survey(s). GoC=R+ S+ D+

2010: Estimate based on coverage reported by national government supported by survey. Survey evidence of 76 percent based on 1 survey(s). Estimate challenged by: S-

2009: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2005: Estimate of 68 percent assigned by working group. Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Estimate challenged by: D-R-

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<td>2016</td>
<td>82%</td>
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**Estimate**

- 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.
No estimate for infant immunization made.

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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 (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.

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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.
Uganda - HepB3

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 extrapolation from data reported by national government. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Preliminary DHS 2016 results suggest coverage of 79 percent for the 2014-15 birth cohort. Estimate challenged by: D-

2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: D-

2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Estimate challenged by: D-

2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-

2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ D+

2011: Estimate based on coverage reported by national government. GoC=R+ D+

2010: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. GoC=R+ D+

2009: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2005: Estimate of 64 percent assigned by working group. DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. 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.

### Description:

2016: Estimate based on extrapolation from data reported by national government. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Preliminary DHS 2016 results suggest coverage of 79 percent for the 2014-15 birth cohort. Estimate challenged by: D-

2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: D-

2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Estimate challenged by: D-

2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. A national web based health management information system was implemented in all districts. A DQS conducted in 2013 suggests problems in reporting and monitoring and shows that data were being over reported. The programme plans to address this and other monitoring issues during 2014. Estimate challenged by: D-

2012: Estimate based on coverage reported by national government. 1 month vaccine shortage. GoC=R+ D+

2011: Estimate based on coverage reported by national government. GoC=R+ D+

2010: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. GoC=R+ D+

2009: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2006: Reported data calibrated to 2005 and 2010 levels. Estimate challenged by: R-

2005: Estimate of 64 percent assigned by working group. DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. 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.

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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.
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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 is based on estimated DTP3 coverage level. Preliminary DHS 2016 results suggest coverage of 64 percent for the 2014-15 birth cohort. Reported data excluded. Concerns remain about the quality of the reported data given preliminary results from the DHS 2016 as well as vis-a-vis the prior nationally representative survey results. WHO and UNICEF are aware of a Demographic and Health Survey taking place (fieldwork April-September 2016) and await final results. Estimate challenged by: D-R-

**2015:** Estimate based adjustment from DTP3 level. Reported data excluded. Unexplained decline in reported target population, both births and surviving infants. Estimate challenged by: D-R-

**2014:** Reported data excluded. Implementation of the Uganda 2012-14 EPI revitalization plan resulted in marked increase in administrative coverage and the number of children vaccinated between 2012 and 2014. It is, however, unclear whether these rapid increases represent true gains or are an artifact of reported activity around improved data recording and monitoring. Pneumococcal conjugate vaccine introduced during 2014. Estimate challenged by: R-

---

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### Uganda - survey details


Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
--- | --- | --- | --- | --- | ---
BCG | Card | 78 | 12-23 m | 25811 | 79 |
BCG | Card or History | 97 | 12-23 m | 33265 | 79 |
DTP1 | Card | 77 | 12-23 m | 25811 | 79 |
DTP1 | Card or History | 96 | 12-23 m | 33265 | 79 |
DTP3 | Card | 74 | 12-23 m | 25811 | 79 |
DTP3 | Card or History | 92 | 12-23 m | 33265 | 79 |
MCV1 | Card | 70 | 12-23 m | 25811 | 79 |
MCV1 | Card or History | 85 | 12-23 m | 33265 | 79 |
DTP3 | Card or History | 72 | 12-23 m | 33265 | 79 |
DTP3 | Card or History | 50 | 12-23 m | 604 | 59 |
MCV1 | Card or History | 85 | 12-23 m | 33265 | 79 |
DTP1 | Card or History | 93 | 12-23 m | 33265 | 79 |
DTP1 | Card or History | 58 | 12-23 m | 876 | 59 |
Pol1 | Card or History | 57 | 24-35 m | 1480 | 59 |
Pol1 | Card or History | 47 | 24-35 m | 876 | 59 |
Pol2 | Card or History | 68 | 24-35 m | 876 | 59 |
Pol2 | Card or History | 50 | 24-35 m | 604 | 59 |
Pol3 | Card or History | 68 | 24-35 m | 876 | 59 |
Pol3 | Card or History | 50 | 24-35 m | 604 | 59 |

#### 2009 Uganda Demographic and Health Survey 2011

Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
--- | --- | --- | --- | --- | ---
BCG | C or H <12 months | 93 | 24-35 m | 1515 | 59 |
DTP1 | C or H <12 months | 91 | 24-35 m | 1515 | 59 |
DTP3 | C or H <12 months | 55 | 24-35 m | 1515 | 59 |
MCV1 | C or H <12 months | 61 | 24-35 m | 1515 | 59 |
Pol1 | C or H <12 months | 90 | 24-35 m | 1515 | 59 |
Pol3 | C or H <12 months | 64 | 24-35 m | 1515 | 59 |

#### 2008 Uganda Demographic and Health Survey 2011

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

#### 2007 Uganda Demographic and Health Survey 2011

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

#### 2005 Uganda Demographic and Health Survey 2006

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

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**1999 Uganda Demographic and Health Survey 2000-2001**

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1997 Uganda Immunization Coverage Validation Survey 1998/1999

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July 4, 2017; page 17

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2018 data received as of July 3, 2017
Further information and estimates for previous years are available at:
http://www.data.unicef.org/child-health/immunization