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 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 the assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or approaches. Approaches to determine OFFICIAL coverage may differ across countries.

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

ABBREVIATIONS
**BCG:** percentage of births who received one dose of Bacillus Calmette Guerin vaccine.
**DTP1 / DTP3:** percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.
**Pol3:** percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.
**IPV1:** percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

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

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

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

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

**HepB:** 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.

**PeV3:** 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 PeV 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 (wunec) 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.

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

### Description:

2016: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on coverage reported by national government. GoC=R+ D+

2012: DTP1 coverage estimated based on DTP3 coverage of 84. Estimate challenged by: D-R-

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

2010: Estimate based on coverage reported by national government. GoC=R+ D+

2009: Estimate based on coverage reported by national government. Survey results for DTP1 are not presented due to transitions to DTP-HepB-Hib vaccine during period covered by survey. GoC=R+ D+

2008: Estimate based on coverage reported by national government. GoC=R+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ D+

2006: Estimate based on coverage reported by national government. Estimate challenged by: D-

2005: Estimate based on interpolation between data reported by national government. Suriname Multiple Indicator Cluster Survey 2006 results ignored by working group. Survey conducted for year of pentavalent introduction. Reported data excluded because 107 percent greater than 100 percent. Reported data excluded due to an unexplained increase from 92 percent to 107 percent with decrease 94 percent. GoC=R+ D+
The WHO and UNICEF estimates of national immunization coverage (vaccine) 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.

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

### Description:

2016: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on coverage reported by national government. GoC=R+ D+

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

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

2010: Estimate based on coverage reported by national government. Estimate challenged by: D-

2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Suriname Multiple Indicator Cluster Survey 2010 card or history results of 83 percent modified for recall bias to 87 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 80 percent and 3d dose card only coverage of 77 percent. GoC=R+ S+ D+

2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2006: Estimate follows reported data. GoC=R+ D+

2005: Estimate based on coverage reported by national government. Suriname Multiple Indicator Cluster Survey 2006 results ignored by working group. Survey conducted for year of pentavalent introduction. Suriname Multiple Indicator Cluster Survey 2006 card or history results of 92 percent modified for recall bias to 97 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 84 percent and 3d dose card only coverage of 83 percent. Estimate challenged by: D-
The WHO and UNICEF estimates of national immunization coverage (vaccine) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

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

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

### Description:

- **2016**: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. Estimate is based on reported data following introduction. GoC=R+ D+
- **2015**: Estimate based on coverage reported by national government. IPV introduced during 2015. 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.

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

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

### Description:

2016: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on coverage reported by national government. Programme reports a three month stock-out at national level. GoC=R+ D+

2013: Estimate based on coverage reported by national government. Increase in coverage reflects recovery from prior years stockout in spite of 2 month stockout during 2013 at national level and in 2 districts. GoC=R+ D+

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

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

2010: Estimate based on coverage reported by national government. Estimate challenged by: S-

2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 78 percent based on 1 survey(s). GoC=R+ S+ D+

2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+

2005: Estimate based on coverage reported by national government. Suriname Multiple Indicator Cluster Survey 2006 results ignored by working group. Survey conducted for year of pentavalent introduction. Reported coverage includes doses administered during campaign. Estimate challenged by: D-

---

July 4, 2017; page 8

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

data received as of July 3, 2017
Suriname - MCV2

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

2016: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. Estimate based on reported data following a change in recommended age for vaccination. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on reported administrative estimate. Second dose of MCV introduced during 2005 but not systematically provided until 2013. Reporting started in 2013. Presentation is MMR and is recommended at 4 years of age. GoC=R+ D+

The WHO and UNICEF estimates of national immunization coverage (wunimc) 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.
Suriname - RCV1

Description:

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

2016: Estimate based on estimated MCV1. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. GoC=R+ D+

2015: Estimate based on estimated MCV1. GoC=R+ D+

2014: Estimate based on estimated MCV1. GoC=R+ D+

2013: Estimate based on estimated MCV1. GoC=R+ D+

2012: Estimate based on estimated MCV1. GoC=R+ D+

2011: Estimate based on estimated MCV1. GoC=R+ S+ D+

2010: Estimate based on estimated MCV1. Estimate challenged by: S-

2009: Estimate based on estimated MCV1. GoC=R+ S+ D+

2008: Estimate based on estimated MCV1. GoC=R+ S+ D+

2007: Estimate based on estimated MCV1. GoC=R+ S+ D+

2006: Estimate based on estimated MCV1. GoC=R+ D+

2005: Estimate based on estimated MCV1. Estimate challenged by: 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.

- 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 10

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.

### Description:

- **2016**: Estimate based on extrapolation from data reported by national government. Reported data excluded due to unexplained sudden change in coverage from 65 level to 80 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. Estimate challenged by: D-

- **2015**: Estimate based on coverage reported by national government. GoC=R+ D+

- **2014**: Estimate based on coverage reported by national government. Estimate based on reported data. GoC=R+

- **2013**: Estimate based on reported administrative data. GoC=R+ D+

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

- **2011**: Estimate based on interpolation between data reported by national government. GoC=S+

- **2010**: Estimate based on interpolation between data reported by national government. GoC=S+

- **2009**: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 38 percent based on 1 survey(s). GoC=R+ S+ D+

- **2008**: Estimate based on reported data. Estimate challenged by: S-

- **2007**: Estimate based on interpolation between data reported by national government. Estimate challenged by: S-

- **2006**: Estimate based on reported data. GoC=R+ D+

### Table:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GoC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Official</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>51</td>
<td>45</td>
<td>64</td>
<td>65</td>
<td>65</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Administrative</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>51</td>
<td>45</td>
<td>64</td>
<td>65</td>
<td>65</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>38</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

July 4, 2017; page 11

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

data received as of July 3, 2017
Suriname - HepB3

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

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

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

### Description:

2016: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on coverage reported by national government. Estimate challenged by: D-

2013: Estimate based on coverage reported by national government. GoC=R+ D+

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

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

2010: Estimate based on coverage reported by national government. GoC=R+ D+

2009: Estimate based on coverage reported by national government. Survey results for HepB3 are not presented due to transitions to DTP-HepB-Hib vaccine during period covered by survey. GoC=R+ D+

2008: Estimate based on coverage reported by national government. GoC=R+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ D+

2006: Estimate based on coverage reported by national government. Estimate challenged by: D-


### Table:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>83</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>87</td>
<td>86</td>
<td>86</td>
<td>84</td>
<td>86</td>
<td>85</td>
<td>89</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Estimate GoC</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
</tr>
<tr>
<td></td>
<td>Official</td>
<td>83</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>87</td>
<td>86</td>
<td>86</td>
<td>84</td>
<td>86</td>
<td>85</td>
<td>89</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Administrative</td>
<td>83</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>87</td>
<td>87</td>
<td>88</td>
<td>84</td>
<td>86</td>
<td>85</td>
<td>89</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
<td>6</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

The WHO and UNICEF estimates of national immunization coverage (wunec) 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.
Suriname - Hib3

Description:

2016: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. GoC=R+ D+

2015: Estimate based on coverage reported by national government. GoC=R+ D+

2014: Estimate based on coverage reported by national government. GoC=R+ D+

2013: Estimate based on coverage reported by national government. GoC=R+ D+

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

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

2010: Estimate based on coverage reported by national government. GoC=R+ D+

2009: Estimate based on coverage reported by national government. Survey results for Hib3 are not presented due to transitions to DTP-HepB-Hib vaccine during period covered by survey. GoC=R+ D+

2008: Estimate based on coverage reported by national government. GoC=R+ D+

2007: Estimate based on coverage reported by national government. GoC=R+ D+

2006: Estimate based on coverage reported by national government. Estimate challenged by: 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.

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.

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 (vwi, vwc) 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 (wunie) 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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimate</th>
<th>GoC</th>
<th>D+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF are aware of a Multiple Indicator Cluster Survey in 2017 and await the final vaccination coverage results from the survey. Programme reports a three week vaccine stock-out. GoC=R+ D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Estimate based on coverage reported by national government. GoC=R+ D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Estimate based on coverage reported by national government. Estimate is based on reported data. Decline in reported number of doses administered is unexplained. GoC=R+ D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Estimate based on interpolation between reported values. Reported data excluded. Increase reflects expansion of service delivery following introduction to national birth cohort in 2012 and suboptimal recording practices. Reported data excluded due to an unexplained increase from 73 percent to 93 percent with decrease 79 percent. Estimate challenged by: D-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Estimate based on coverage reported by national government. Yellow fever vaccine is now offered to the entire national target population. GoC=R+ D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>YFV introduced in 2005 for high-risk areas only. Seventy-seven percent coverage was achieved in 13 percent of the total annual national target population. GoC=D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>YFV introduced in 2005 for high-risk areas only. Eighty percent coverage was achieved in 14 percent of the total annual national target population. GoC=D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>Estimate extrapolated from 2008 estimate. No reported data provided. Survey results ignored. Sample size 154 less than 300. GoC=No accepted empirical data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>YFV introduced in 2005 for high-risk areas only. Seventy-one percent coverage was achieved in 16 percent of the national target population. GoC=D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>YFV introduced in 2005 for high-risk areas only. Eighty percent coverage was achieved in 15 percent of the national target population. GoC=D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>YFV introduced in 2005 for high-risk areas only. Eighty percent coverage was achieved in 17 percent of the national target population. GoC=D+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>YFV introduced in 2005 for high-risk areas only. Ninety-seven percent coverage was achieved in 18 percent of the national target population. Suriname Multiple Indicator Cluster Survey 2006 results ignored by working group. Survey conducted for year of pentavalent introduction. YFV partially introduced in 2004. Reporting started in 2005. GoC=D+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Suriname - survey details

### 2009 Suriname Multiple Indicator Cluster Survey 2010

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Confirmation method</th>
<th>Coverage</th>
<th>Age cohort</th>
<th>Sample</th>
<th>Cards seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>HepBB C or H &lt;12 months</td>
<td>38</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepBB Card</td>
<td>33</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepBB Card or History</td>
<td>38</td>
<td>18-29 m 746</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepBB History</td>
<td>6</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCV1 C or H &lt;18 months</td>
<td>74</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCV1 Card</td>
<td>70</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCV1 Card or History</td>
<td>78</td>
<td>18-29 m 746</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCV1 History</td>
<td>7</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol1 C or H &lt;12 months</td>
<td>90</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol1 Card</td>
<td>80</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol1 Card or History</td>
<td>90</td>
<td>18-29 m 746</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol1 History</td>
<td>10</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol3 C or H &lt;12 months</td>
<td>79</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol3 Card</td>
<td>77</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol3 Card or History</td>
<td>83</td>
<td>18-29 m 746</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol3 History</td>
<td>6</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YFV C or H &lt;12 months</td>
<td>15</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YFV Card</td>
<td>59</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YFV Card or History</td>
<td>64</td>
<td>18-29 m 154</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YFV History</td>
<td>5</td>
<td>18-29 m</td>
<td>82</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2005 Suriname Multiple Indicator Cluster Survey 2006

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Confirmation method</th>
<th>Coverage</th>
<th>Age cohort</th>
<th>Sample</th>
<th>Cards seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTP1 C or H &lt;12 months</td>
<td>95</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP1 Card</td>
<td>84</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP1 Card or History</td>
<td>96</td>
<td>12-23 m 412</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP1 History</td>
<td>12</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 C or H &lt;12 months</td>
<td>86</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 Card</td>
<td>84</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 Card or History</td>
<td>91</td>
<td>12-23 m 412</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 History</td>
<td>7</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepB1 C or H &lt;12 months</td>
<td>9</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepB1 Card</td>
<td>9</td>
<td>12-23 m</td>
<td>412 81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepB1 Card or History</td>
<td>9</td>
<td>12-23 m 412</td>
<td>81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 1999 Suriname Multiple Indicator Cluster Survey 2000, 2001

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Confirmation method</th>
<th>Coverage</th>
<th>Age cohort</th>
<th>Sample</th>
<th>Cards seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTP1 Card</td>
<td>84</td>
<td>12-23 m</td>
<td>376 85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP1 Card or History</td>
<td>89</td>
<td>12-23 m 376</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP1 History</td>
<td>5</td>
<td>12-23 m</td>
<td>376 85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 Card</td>
<td>76</td>
<td>12-23 m</td>
<td>376 85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 Card or History</td>
<td>79</td>
<td>12-23 m 376</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP3 History</td>
<td>3</td>
<td>12-23 m</td>
<td>376 85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Suriname - survey details

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Card</th>
<th>Age (m)</th>
<th>Coverage (%)</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCV1 Card</td>
<td>56</td>
<td>12-23 m</td>
<td>376</td>
<td>85</td>
</tr>
<tr>
<td>MCV1 Card or History</td>
<td>60</td>
<td>12-23 m</td>
<td>376</td>
<td>85</td>
</tr>
<tr>
<td>MCV1 History</td>
<td>5</td>
<td>12-23 m</td>
<td>376</td>
<td>85</td>
</tr>
<tr>
<td>Pol1 Card</td>
<td>84</td>
<td>12-23 m</td>
<td>376</td>
<td>85</td>
</tr>
<tr>
<td>Pol1 Card or History</td>
<td>88</td>
<td>12-23 m</td>
<td>376</td>
<td>85</td>
</tr>
</tbody>
</table>

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

July 4, 2017; page 18  
WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2018  
data received as of July 3, 2017