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 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 survivors 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 (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: 2022 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: 2022 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:

#### 2021: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

#### 2020: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

#### 2019: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

#### 2018: Estimate based on coverage reported by national government. GoC=R+

#### 2017: Estimate based on coverage reported by national government. GoC=R+

#### 2016: Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

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

---

### Table: Estimates of DTP1 coverage

<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>Estimate</td>
<td>98</td>
<td>98</td>
<td>97</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<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>
<td>•••</td>
</tr>
<tr>
<td>Official</td>
<td>98</td>
<td>98</td>
<td>97</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Administrative</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>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

July 8, 2022; page 4

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2023

data received as of July 7, 2022
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

- **2021**: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- **2020**: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+
- **2019**: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+
- **2018**: Estimate based on coverage reported by national government. GoC=R+
- **2017**: Estimate based on coverage reported by national government. GoC=R+
- **2016**: Estimate based on coverage reported by national government. GoC=R+
- **2015**: Estimate based on coverage reported by national government. GoC=R+
- **2014**: Estimate based on coverage reported by national government. GoC=R+
- **2013**: Estimate based on coverage reported by national government. GoC=R+
- **2012**: Estimate based on coverage reported by national government. GoC=R+
- **2011**: Estimate based on coverage reported by national government. GoC=R+
- **2010**: Estimate based on coverage reported by national government. GoC=R+

### Description:

- **2021**: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- **2020**: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+
- **2019**: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+
- **2018**: Estimate based on coverage reported by national government. GoC=R+
- **2017**: Estimate based on coverage reported by national government. GoC=R+
- **2016**: Estimate based on coverage reported by national government. GoC=R+
- **2015**: Estimate based on coverage reported by national government. GoC=R+
- **2014**: Estimate based on coverage reported by national government. GoC=R+
- **2013**: Estimate based on coverage reported by national government. GoC=R+
- **2012**: Estimate based on coverage reported by national government. GoC=R+
- **2011**: Estimate based on coverage reported by national government. GoC=R+
- **2010**: Estimate based on coverage reported by national government. GoC=R+

---

**United States of America - DTP3**

![Graph showing DTP3 coverage from 2010 to 2021](graph.png)

**Table of Estimates**

<table>
<thead>
<tr>
<th>Year</th>
<th>Official</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2020</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2019</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2018</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2017</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2016</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2015</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2014</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2013</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2012</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2011</td>
<td>95</td>
<td>NA</td>
</tr>
<tr>
<td>2010</td>
<td>95</td>
<td>NA</td>
</tr>
</tbody>
</table>

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: 2022 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 8, 2022; page 5

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2023

Data received as of July 7, 2022
The WHO and UNICEF estimates of national immunization coverage 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: 2022 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:

**2021:** Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

**2020:** Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, derived from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

**2019:** Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

**2018:** Estimate based on coverage reported by national government. GoC=R+

**2017:** Estimate based on coverage reported by national government. GoC=R+

**2016:** Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

**2010:** Estimate based on coverage reported by national government. GoC=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: 2022 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.

### UNITED STATES OF AMERICA - IPV1

**Description:**

Estimates for a dose of inactivated polio vaccine (IPV) begin in 2015 following the Global Polio Eradication Initiative’s Polio Eradication and Endgame Strategic Plan: 2013-2018 which recommended at least one full dose or two fractional doses of IPV into routine immunization schedules as a strategy to mitigate the potential consequences should any re-emergence of type 2 poliovirus occur following the planned withdrawal of Sabin type 2 strains from oral polio vaccine (OPV).

2021: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

2020: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

2018: Estimate based on coverage reported by national government. GoC=R+

2017: Estimate based on coverage reported by national government. GoC=R+

2016: Estimate based on coverage reported by national government. GoC=R+

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

---

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>96</td>
<td>97</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Estimate GoC</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Official</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>96</td>
<td>97</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Administrative</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>
<td>NA</td>
</tr>
<tr>
<td>Survey</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>
<td>NA</td>
</tr>
</tbody>
</table>
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:

2021: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data.

2020: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus which is by 20 months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

2018: Estimate based on coverage reported by national government. GoC=R+

2017: Estimate based on coverage reported by national government. GoC=R+

2016: Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

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

### 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>Total</td>
<td>Estimate</td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>92</td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>92</td>
<td>90</td>
<td>91</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Official</td>
<td></td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>92</td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>92</td>
<td>90</td>
<td>91</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Survey</td>
<td></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>
<td></td>
</tr>
</tbody>
</table>

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 (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: 2022 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:

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

- **2021:** Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- **2020:** Estimate based on extrapolation from data reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=No accepted empirical data
- **2019:** Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+
- **2018:** Estimate based on coverage reported by national government. GoC=R+
- **2017:** Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data
- **2016:** Estimate based on coverage reported by national government. Reported coverage is based on the median of the state-specific MMR2 plus coverage for the 2016-17 school year. GoC=R+
- **2015:** Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data
- **2014:** Estimate based on interpolation between data reported by national government. Beginning in 2014, the recommended age of administration for MCV2 changed from by age 6 years to by age 4 years. GoC=No accepted empirical data
- **2013:** Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data
- **2012:** Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data
- **2011:** Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data
accepted empirical data

2010: Estimate based on interpolation between data reported by national government. GoC=No
accepted empirical data
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: 2022 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:

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.

#### 2021:
Estimate based on estimated MCV1. GoC=No accepted empirical data

#### 2020:
Estimate based on estimated MCV1. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

#### 2019:
Estimate based on estimated MCV1. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

#### 2018:
Estimate based on estimated MCV1. GoC=R+

#### 2017:
Estimate based on estimated MCV1. GoC=R+

#### 2016:
Estimate based on estimated MCV1. GoC=R+

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

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

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

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

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

#### 2010:
Estimate based on estimated MCV1. GoC=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: 2022 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:

**2021:** Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

**2020:** Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

**2019:** Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

**2018:** Estimate based on coverage reported by national government. GoC=R+

**2017:** Estimate based on coverage reported by national government. GoC=R+

**2016:** Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

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

---

July 8, 2022; page 12

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2023

data received as of July 7, 2022
United States of America - HepB3

**Description:**

2021: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

2020: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

2018: Estimate based on coverage reported by national government. GoC=R+

2017: Estimate based on coverage reported by national government. GoC=R+

2016: Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

2010: Estimate based on coverage reported by national government. GoC=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: 2022 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: 2022 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:

- **2021**: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

- **2020**: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

- **2019**: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

- **2018**: Estimate based on coverage reported by national government. GoC=R+

- **2017**: Estimate based on coverage reported by national government. GoC=R+

- **2016**: Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

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

---

<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>Official</td>
<td>90</td>
<td>94</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
<td>90</td>
<td>94</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Survey</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>
<td>NA</td>
</tr>
</tbody>
</table>
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: 2022 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:

2021: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

2020: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. GoC=R+

2019: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

2018: Estimate based on coverage reported by national government. GoC=R+

2017: Estimate based on coverage reported by national government. GoC=R+

2016: Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

2010: Estimate based on coverage reported by national government. GoC=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: 2022 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:

2021: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data

2020: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2020 reflect estimates of coverage by age 24 months, except for rotavirus that it is by eight months, obtained from children born in 2016 and 2017. See: MMWR October 23, 2020 69 pp. 1505–1511. Reported data for 2020 does not include disruptions related to COVID-19. Thus, WUENIC estimates for 2020 are likely an overestimate. Several reports from various jurisdictions in the United States suggest disruptions to the immunization program. For example, for 10 jurisdictions, declines were close to 15 percent for some vaccines in March-May 2020 compared to the same period 2018-2019. MMWR June 11, 2021 70 pp. 840–845. Reported coverage might be for PCV dose 4. GoC=R+

2019: Estimate based on coverage reported by national government. Reported coverage is derived from the National Immunization Survey-Child, an annual survey of children 19-35 months of age. The NIS-Child is a list-assisted random digit-dialed telephone survey followed by mailed survey to immunization providers. Reported data for 2019 reflect estimates obtained from children born in 2015 and 2016. Kaplan Meier analysis was used to estimate vaccination coverage by age 24 months, except for rotavirus and Hepatitis A. This approach to data analysis represents a change from prior reporting, which was done by survey year. GoC=R+

2018: Estimate based on coverage reported by national government. GoC=R+

2017: Estimate based on coverage reported by national government. GoC=R+

2016: Estimate based on coverage reported by national government. GoC=R+

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

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

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

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

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

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

### 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>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>93</td>
<td>94</td>
<td>92</td>
<td>92</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>92</td>
<td>92</td>
<td>92</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Official</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>
<td>NA</td>
</tr>
<tr>
<td>Administrative</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>
<td>NA</td>
</tr>
</tbody>
</table>

July 8, 2022; page 16

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2023

Data received as of July 7, 2022
## United States of America - survey details

### 2013 Vaccination Coverage Among Children Aged 19-35 Months, United States, 2015

<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>DTP3</td>
<td>Card or History</td>
<td>95</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>HepB3</td>
<td>Card or History</td>
<td>92.6</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>HepBB</td>
<td>Card or History</td>
<td>72.4</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>Hib3</td>
<td>Card or History</td>
<td>82.7</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>MCV1</td>
<td>Card or History</td>
<td>91.9</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>PCV3</td>
<td>Card or History</td>
<td>93.3</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>Pol3</td>
<td>Card or History</td>
<td>93.7</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
<tr>
<td>RotaC</td>
<td>Card or History</td>
<td>73.2</td>
<td>19-35 m</td>
<td>15167</td>
<td></td>
</tr>
</tbody>
</table>

### 2012 National Immunization Survey, 2014

<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>DTP3</td>
<td>Card or History</td>
<td>94.7</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>HepB3</td>
<td>Card or History</td>
<td>91.6</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>HepBB</td>
<td>Card or History</td>
<td>72.4</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>Hib3</td>
<td>Card or History</td>
<td>92.6</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>MCV1</td>
<td>Card or History</td>
<td>91.5</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>PCV3</td>
<td>Card or History</td>
<td>92.6</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>Pol3</td>
<td>Card or History</td>
<td>93.3</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
<tr>
<td>RotaC</td>
<td>Card or History</td>
<td>71.7</td>
<td>19-35 m</td>
<td>14893</td>
<td></td>
</tr>
</tbody>
</table>

### 2011 National Immunization Survey, 2013

<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>DTP3</td>
<td>Card or History</td>
<td>93.6</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
<tr>
<td>HepB3</td>
<td>Card or History</td>
<td>89.7</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
<tr>
<td>Hib3</td>
<td>Card or History</td>
<td>92.3</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
<tr>
<td>MCV1</td>
<td>Card or History</td>
<td>90.1</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
<tr>
<td>PCV3</td>
<td>Card or History</td>
<td>91.9</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
<tr>
<td>Pol3</td>
<td>Card or History</td>
<td>91.8</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
<tr>
<td>RotaC</td>
<td>Card or History</td>
<td>72.6</td>
<td>19-35 m</td>
<td>13611</td>
<td></td>
</tr>
</tbody>
</table>

### 2010 National Immunization Survey 2012

<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>DTP3</td>
<td>Card or History</td>
<td>93.8</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>HepB3</td>
<td>Card or History</td>
<td>88.8</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>Hib3</td>
<td>Card or History</td>
<td>92.7</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>MCV1</td>
<td>Card or History</td>
<td>89.3</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>PCV3</td>
<td>Card or History</td>
<td>91.8</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>Pol3</td>
<td>Card or History</td>
<td>91.9</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>RotaC</td>
<td>Card or History</td>
<td>68.6</td>
<td>19-23 m</td>
<td>16000</td>
<td></td>
</tr>
</tbody>
</table>

### 2009 National Immunization Survey 2011

<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>DTP3</td>
<td>Card</td>
<td>95.5</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>HepB3</td>
<td>Card</td>
<td>91.1</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>HepBB</td>
<td>Card</td>
<td>68.6</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>Hib3</td>
<td>Card</td>
<td>94</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>MCV1</td>
<td>Card</td>
<td>91.6</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>PCV3</td>
<td>Card</td>
<td>93.6</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>Pol3</td>
<td>Card</td>
<td>93.9</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
<tr>
<td>RotaC</td>
<td>Card</td>
<td>67.3</td>
<td>19-35 m</td>
<td>19534</td>
<td></td>
</tr>
</tbody>
</table>

### 2005 National Immunization Survey (NIS) 2008

<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>DTP3</td>
<td>Card</td>
<td>95.6</td>
<td>19-35 m</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>HepB3</td>
<td>Card</td>
<td>92.8</td>
<td>19-35 m</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>Hib3</td>
<td>Card</td>
<td>90</td>
<td>19-35 m</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>MCV1</td>
<td>Card</td>
<td>90.3</td>
<td>19-35 m</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>PCV3</td>
<td>Card</td>
<td>92.1</td>
<td>19-35 m</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>Pol3</td>
<td>Card</td>
<td>92.3</td>
<td>19-35 m</td>
<td>18430</td>
<td></td>
</tr>
</tbody>
</table>

### 2004 National Immunization Survey (NIS) 2007
### United States of America - survey details

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccine</td>
<td>Confirmation method</td>
</tr>
<tr>
<td>DTP3</td>
<td>Card</td>
</tr>
<tr>
<td>HepB3</td>
<td>Card</td>
</tr>
<tr>
<td>Hib</td>
<td>Card</td>
</tr>
<tr>
<td>MCV1</td>
<td>Card</td>
</tr>
<tr>
<td>Pol3</td>
<td>Card</td>
</tr>
</tbody>
</table>

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
| DTP3 | Card | 95.8 | 19-35 m | - | - |
| HepB3 | Card | 93.3 | 19-35 m | - | - |
| Hib | Card | 93.4 | 19-35 m | - | - |
| MCV1 | Card | 92.3 | 19-35 m | - | - |
| Pol3 | Card | 92.8 | 19-35 m | - | - |

### 2002 National Immunization Survey (NIS) 2007

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
| DTP3 | Card | 96.1 | 19-35 m | - | - |
| HepB3 | Card | 92.9 | 19-35 m | - | - |
| Hib | Card | 93.9 | 19-35 m | - | - |
| MCV1 | Card | 91.5 | 19-35 m | - | - |
| Pol3 | Card | 91.7 | 19-35 m | - | - |

### 2000 National Immunization Survey 2002

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
| DTP3 | Card or History | 93.9 | 19-35 m | - | - |
| HepB3 | Card or History | 88.3 | 19-35 m | - | - |
| Hib | Card or History | 91.3 | 19-35 m | - | - |
| MCV1 | Card or History | 89.8 | 19-35 m | - | - |

Further information and estimates for previous years are available at:
[https://immunizationdata.who.int/listing.html](https://immunizationdata.who.int/listing.html)