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

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

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

DATA SOURCES.

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

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or 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.
PcV3: 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.
RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine.
PeV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine.
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.

July 2, 2019; page 2

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2020

data received as of June 28, 2019
Tonga - BCG

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: 2017 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:**

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 89 percent based on 1 survey(s). Estimate challenged by: D-R-

2010: Reported data calibrated to 1998 and 2011 levels. Estimate challenged by: D-R-

2009: Reported data calibrated to 1998 and 2011 levels. Estimate challenged by: D-R-

2008: Reported data calibrated to 1998 and 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 1998 and 2011 levels. Estimate challenged by: R-
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2017 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.

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-borns which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-borns. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-borns which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-borns. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported data excluded because 105 percent greater than 100 percent. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-borns which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-borns. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 86 percent based on 1 survey(s). Estimate challenged by: D-R-

2010: Reported data calibrated to 2000 and 2011 levels. Estimate challenged by: D-R-

2009: Reported data calibrated to 2000 and 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2000 and 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2000 and 2011 levels. Estimate challenged by: R-
Tonga - DTP3

Description:

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported data excluded because 101 percent greater than 100 percent. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 82 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 66 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 48 percent and 3rd dose card only coverage of 46 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2009: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-R-

Estimate GoC

<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>Official</td>
<td>87</td>
<td>86</td>
<td>84</td>
<td>82</td>
<td>82</td>
<td>77</td>
<td>82</td>
<td>80</td>
<td>78</td>
<td>78</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>Survey</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>Admin</td>
<td>100</td>
<td>100</td>
<td>99</td>
<td>99</td>
<td>100</td>
<td>95</td>
<td>100</td>
<td>95</td>
<td>96</td>
<td>96</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<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></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>
</tbody>
</table>

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.

Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2017 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-]; challenges 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 2, 2019; page 5 WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2020 data received as of June 28, 2019
The WHO and UNICEF estimates of national immunization coverage (wunic) are based on data and information which 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: 2017 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+] 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:

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the Government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported data excluded because 101 percent greater than 100 percent. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 84 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 68 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 48 percent and 3rd dose card only coverage of 46 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2009: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-R-

2006: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births.
Tonga - IPV1

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).

2018: Estimate based on estimated DTP3 coverage. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Estimate based on estimated DTP3 coverage. Estimate challenged by: D-R-

2016: Estimate is based on the estimated DTP3 coverage level. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Estimate is based on reported data. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.
Tonga - MCV1

Description:

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate for MCV1 is likely underestimated slightly because the survey results reflect coverage for children aged 12-23 m at the time of survey while measles vaccine is recommended at 12 m. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Estimate of 85 percent assigned by working group. Estimate is based on reported coverage adjusted by the difference in estimated and reported coverage for DTP1. Kingdom of Tonga Demographic and Health Survey 2012 results ignored by working group. Survey results for MCV1 are ignored given that MCV1 is recommended at 12 months according to data reported in the national immunization schedule. The survey results are from children aged 12-23 months at the time of the survey and therefore may underestimate coverage. Estimate challenged by: D-R-

2010: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2009: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

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

- Estimate is supported by reported data [R+] coverage recalculated with an independent denominator from the World Population Prospects: 2017 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.
2008: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-
2007: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-
Tonga - MCV2

**Description:**

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

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Estimate of 85 percent assigned by working group. Estimate is based on reported coverage adjusted by the difference in estimated and reported coverage for DTP1. Estimate challenged by: D-R-

2010: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: R-

2009: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2003 and 2011 levels. Estimate challenged by: R-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2017 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.
**Tonga - RCV1**

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: 2017 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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimate</th>
<th>Observation</th>
<th>GoC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

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

**2018:** Estimate based on estimated MCV1. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

**2017:** Estimate based on estimated MCV1. Estimate challenged by: D-R-

**2016:** Estimate based on estimated MCV1. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

**2015:** Estimate based on estimated MCV1. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

**2014:** Estimate based on estimated MCV1. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

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

**2012:** Estimate based on estimated MCV1. Estimate challenged by: D-R-

**2011:** Estimate based on estimated MCV1. Estimate challenged by: D-R-

**2010:** Estimate based on estimated MCV1. Estimate challenged by: R-

**2009:** Estimate based on estimated MCV1. Estimate challenged by: R-

**2008:** Estimate based on estimated MCV1. Estimate challenged by: R-

**2007:** Estimate based on estimated MCV1. Estimate challenged by: R-

**2006:** Estimate based on estimated MCV1. Estimate challenged by: R-
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

-*** Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2017 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:**

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Estimate of 89 percent assigned by working group. Estimate is based on survey result for BCG. Estimate challenged by: D-R-

2010: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2009: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2011 levels. Estimate challenged by: R-
### Tonga - HepB3

**Description:**

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the Government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported data excluded because 101 percent greater than 100 percent. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 82 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 66 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 48 percent and 3rd dose card only coverage of 46 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: D-R-

2009: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 1997 and 2011 levels. Estimate challenged by: R-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2017 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.
Tonga - Hib3

Description:

2018: Reported data calibrated to 2011 levels. Programme has expressed disagreement with the WHO and UNICEF estimates reflecting the results of the 2012 Demographic and Health Survey providing evidence of the vaccination experience for the 2011 birth cohort. In a 2015 health sector review report, the Government notes that the home-based records seen during the survey may not have been up-to-date and their concern that caregiver recall of vaccination history is inaccurate. Results from the 2012 Demographic and Health Survey suggest coverage among children with documented evidence in home-based records are consistent with reported high vaccination coverage levels by the government. The survey suggests that 48 percent of children currently maintained a home-based record at the time of the survey. There is recognition that there may have been problems with caregiver recall of vaccination history in the survey. It is relevant to note, however, that the survey did identify children with no evidence of vaccination. WHO and UNICEF recommend an independent assessment of the recording and reporting in collaboration with the programme during the coming 12 months. Estimate challenged by: R-

2017: Reported data calibrated to 2011 levels. Estimate challenged by: D-R-

2016: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2015: Reported data calibrated to 2011 levels. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 levels. Reported data excluded because 101 percent greater than 100 percent. Reported target population data for 2014 through 2016 suggest an implied infant mortality rate of 60 deaths per 1000 live-births which is inconsistent with other published data suggesting infant mortality rates that are much lower, around 11 deaths per 1000 live-births. Reported adjustment to administrative data are unexplained. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 levels. Estimate challenged by: R-

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

2011: Survey evidence does not support reported data. Survey evidence of 82 percent based on 1 survey(s). Kingdom of Tonga Demographic and Health Survey 2012 card or history results of 66 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 48 percent and 3rd dose card only coverage of 46 percent. Estimate challenged by: D-R-

2010: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2009: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2008: Reported data calibrated to 2011 levels. Estimate challenged by: R-

2007: Reported data calibrated to 2011 levels. Estimate challenged by: R-

Estimate GoC

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 able 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: 2017 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: 2017 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 (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: 2017 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-], challenge 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.
### 2011 Kingdom of Tonga Demographic and Health 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>BCG</td>
<td>C or H &lt; 12 months</td>
<td>89.4</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>BCG</td>
<td>Card</td>
<td>48.2</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>BCG</td>
<td>Card or History</td>
<td>89.4</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>BCG</td>
<td>History</td>
<td>41.2</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>C or H &lt; 12 months</td>
<td>86</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>Card</td>
<td>48</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>Card or History</td>
<td>86</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>History</td>
<td>38.1</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>DTP3</td>
<td>C or H &lt; 12 months</td>
<td>65.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>DTP3</td>
<td>Card</td>
<td>46.5</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>DTP3</td>
<td>Card or History</td>
<td>65.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>DTP3</td>
<td>History</td>
<td>19.2</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>C or H &lt; 12 months</td>
<td>86</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>Card</td>
<td>48</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>Card or History</td>
<td>86</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>History</td>
<td>38.1</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>C or H &lt; 12 months</td>
<td>65.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>Card</td>
<td>46.5</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>Card or History</td>
<td>65.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>History</td>
<td>19.2</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>C or H &lt; 12 months</td>
<td>86</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>Card</td>
<td>48</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>Card or History</td>
<td>86</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>History</td>
<td>38.1</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>C or H &lt; 12 months</td>
<td>65.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>Card</td>
<td>46.5</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>Card or History</td>
<td>65.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>History</td>
<td>19.2</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>C or H &lt; 12 months</td>
<td>3.5</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>Card</td>
<td>30</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>Card or History</td>
<td>66.2</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>History</td>
<td>36.2</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>C or H &lt; 12 months</td>
<td>87.9</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>Card</td>
<td>48</td>
<td>12-23 m</td>
<td>148</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>Card or History</td>
<td>87.9</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>History</td>
<td>39.9</td>
<td>12-23 m</td>
<td>159</td>
<td>48</td>
</tr>
<tr>
<td>Pol3</td>
<td>C or H &lt; 12 months</td>
<td>67.1</td>
<td>12-23 m</td>
<td>307</td>
<td>48</td>
</tr>
</tbody>
</table>

### 2010 Kingdom of Tonga Demographic and Health 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>BCG</td>
<td>C or H &lt; 12 months</td>
<td>86.8</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>C or H &lt; 12 months</td>
<td>83.4</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>DTP3</td>
<td>C or H &lt; 12 months</td>
<td>59.9</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>C or H &lt; 12 months</td>
<td>83.4</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>C or H &lt; 12 months</td>
<td>59.9</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>C or H &lt; 12 months</td>
<td>83.4</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>C or H &lt; 12 months</td>
<td>59.9</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>C or H &lt; 12 months</td>
<td>2.1</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>C or H &lt; 12 months</td>
<td>84.9</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
<tr>
<td>Pol3</td>
<td>C or H &lt; 12 months</td>
<td>61.2</td>
<td>24-35 m</td>
<td>383</td>
<td>48</td>
</tr>
</tbody>
</table>

### 2009 Kingdom of Tonga Demographic and Health 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>BCG</td>
<td>C or H &lt; 12 months</td>
<td>85.4</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>C or H &lt; 12 months</td>
<td>83.6</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>DTP3</td>
<td>C or H &lt; 12 months</td>
<td>59.4</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>C or H &lt; 12 months</td>
<td>83.6</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>C or H &lt; 12 months</td>
<td>59.4</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>C or H &lt; 12 months</td>
<td>83.6</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>C or H &lt; 12 months</td>
<td>59.4</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>C or H &lt; 12 months</td>
<td>2.3</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>C or H &lt; 12 months</td>
<td>84.2</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
<tr>
<td>Pol3</td>
<td>C or H &lt; 12 months</td>
<td>60.2</td>
<td>36-47 m</td>
<td>334</td>
<td>48</td>
</tr>
</tbody>
</table>

### 2008 Kingdom of Tonga Demographic and Health 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>BCG</td>
<td>C or H &lt; 12 months</td>
<td>84.6</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>DTP1</td>
<td>C or H &lt; 12 months</td>
<td>80.6</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
</tbody>
</table>

July 2, 2019; page 17

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2020
data received as of June 28, 2019
### Tonga - survey details

<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>61.3</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>HepB1</td>
<td>Card or History</td>
<td>80.6</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>HepB3</td>
<td>Card or History</td>
<td>61.3</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>Hib1</td>
<td>Card or History</td>
<td>80.6</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>Hib3</td>
<td>Card or History</td>
<td>61.3</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>MCV1</td>
<td>Card or History</td>
<td>6.3</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>Pol1</td>
<td>Card or History</td>
<td>83.1</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
<tr>
<td>Pol3</td>
<td>Card or History</td>
<td>61.1</td>
<td>48-59 m</td>
<td>302</td>
<td>48</td>
</tr>
</tbody>
</table>

2002 Evaluation of Immunization Program of the Kingdom of Tonga, 2003

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