Turkmenistan: WHO and UNICEF estimates of immunization coverage: 2022 revision
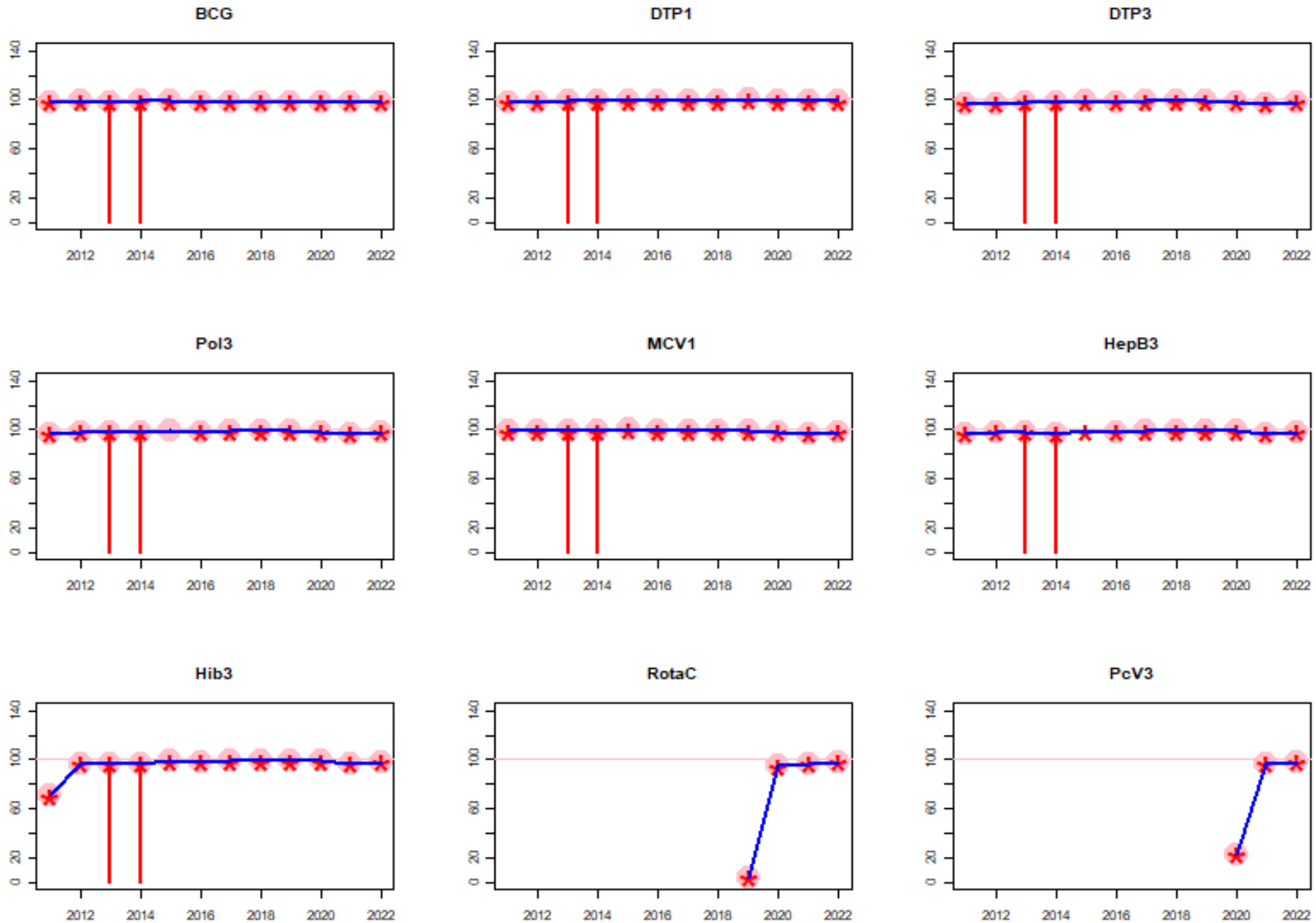
WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2024
data received as of June 26, 2023

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:

*Burton et al. 2009. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.
*Burton et al. 2012. A formal representation of the WHO and UNICEF estimates of national immunization coverage: a computational logic approach.
*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around the WHO and UNICEF estimates of national immunization coverage.

DATA SOURCES.

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

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.

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

ABBREVIATIONS

BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.

DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.

Pol3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

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

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

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

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

HepBB: percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are produced only for countries with a universal birth dose policy. Estimates are not produced for countries that recommend a birth dose to infants born to HepB virus-infected mothers only or where there is insufficient information to determine whether vaccination is within 24 hours of birth.

HepB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.

Hib3: percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.

RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.
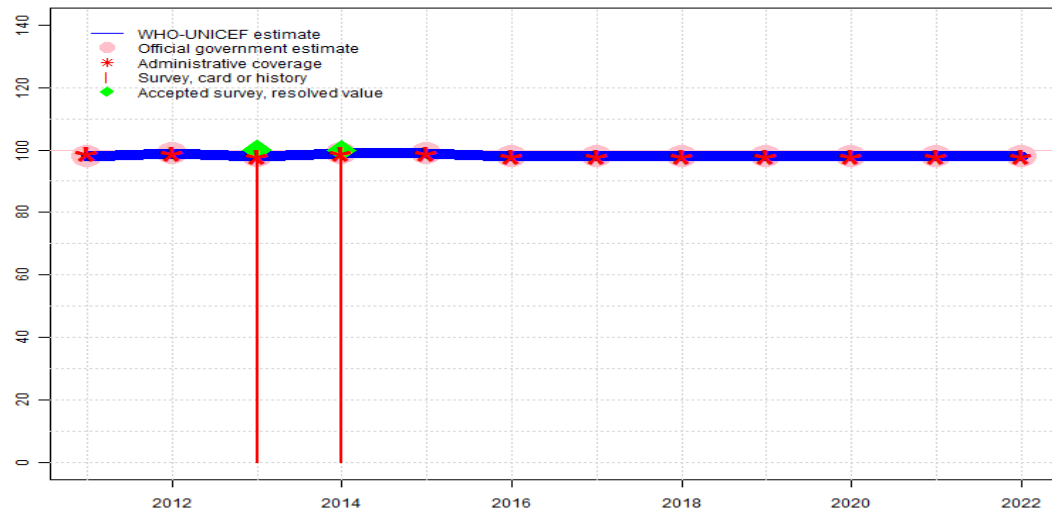
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PcV prior to the 1st birthday.

YFV: percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

TKM - BCG

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 100 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 100 percent based on 1 survey(s). GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. GoC=R+ S+

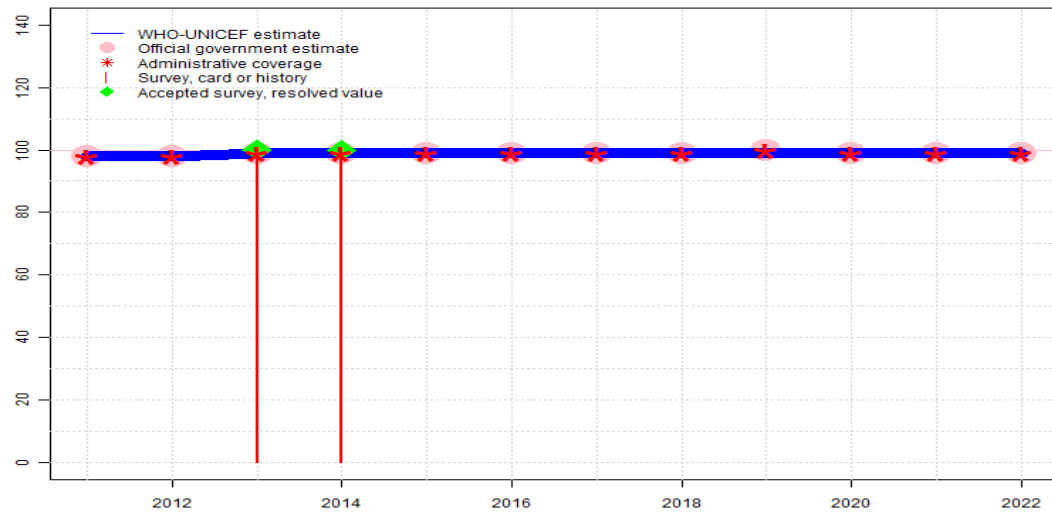|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	99	98	99	99	98	98	98	98	98	98	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	98	99	98	99	99	98	98	98	98	98	98	98
Administrative	99	99	98	99	99	98	98	98	98	98	98	98
Survey	NA	NA	100	100	NA	NA	NA	NA	NA	NA	NA	NA

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.

Turkmenistan - DTP1

TKM - DTP1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 100 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 100 percent based on 1 survey(s). GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. GoC=R+ S+

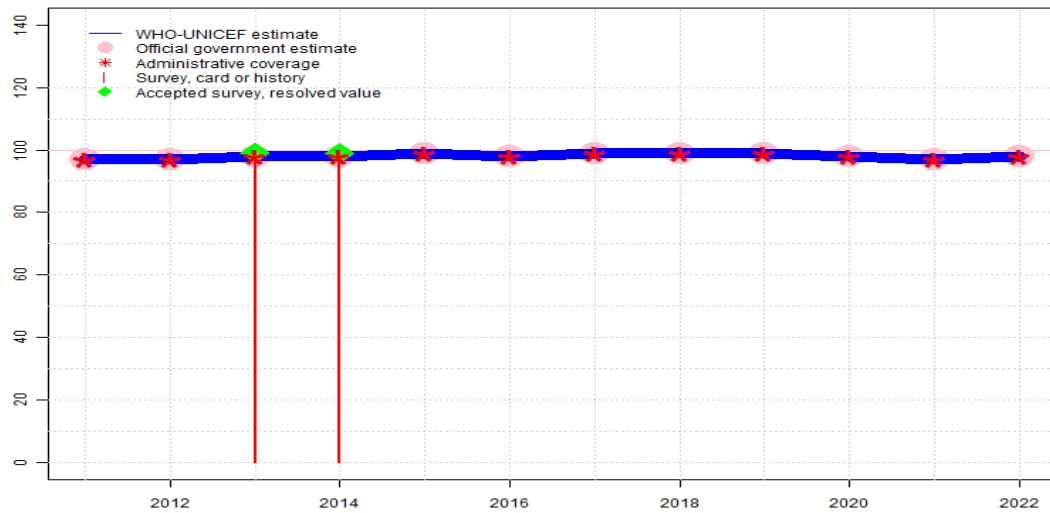|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	98	99	99	99	99	99	99	99	99	99	99
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	98	98	99	99	99	99	99	99	100	99	99	99
Administrative	98	98	99	99	99	99	99	99	100	99	99	99
Survey	NA	NA	100	100	NA	NA	NA	NA	NA	NA	NA	NA

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.

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• 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.

Turkmenistan - DTP3

TKM - DTP3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

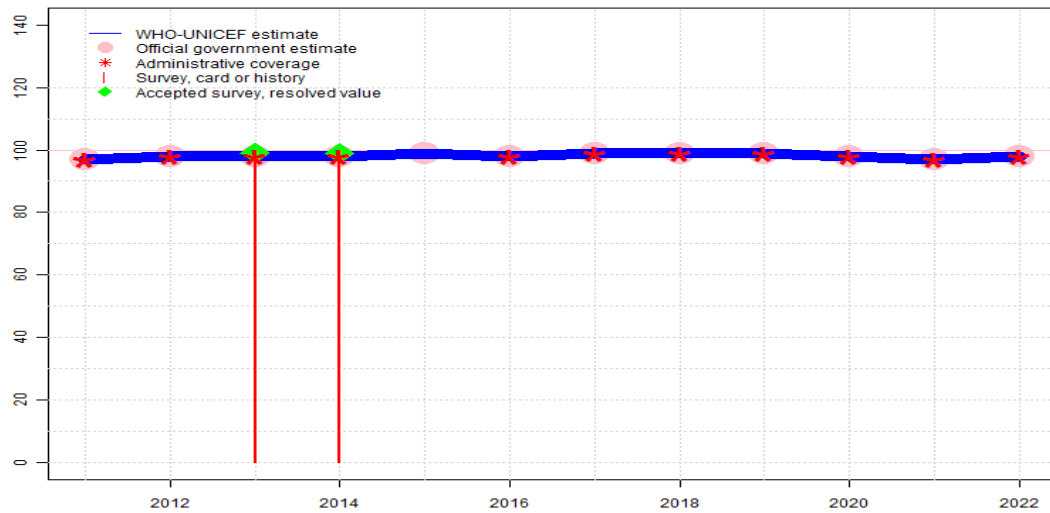|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	97	97	98	98	99	98	99	99	99	98	97	98
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	97	97	98	98	99	98	99	99	99	98	97	98
Administrative	97	97	98	98	99	98	99	99	99	98	97	98
Survey	NA	NA	100	99	NA	NA	NA	NA	NA	NA	NA	NA

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.

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● 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:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). Turkmenistan Multiple Indicator Cluster Survey 2015-2016 card or history results of 100 percent modifed for recall bias to 99 percent based on 1st dose card or history coverage of 100 percent, 1st dose card only coverage of 99 percent and 3rd dose card only coverage of 99 percent. GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. GoC=R+ S+

TKM - Pol3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). Turkmenistan Multiple Indicator Cluster Survey 2015-2016 card or history results of 100 percent modifed for recall bias to 99 percent based on 1st dose card or history coverage of 100 percent, 1st dose card only coverage of 99 percent and 3rd dose card only coverage of 99 percent. GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. GoC=R+ S+

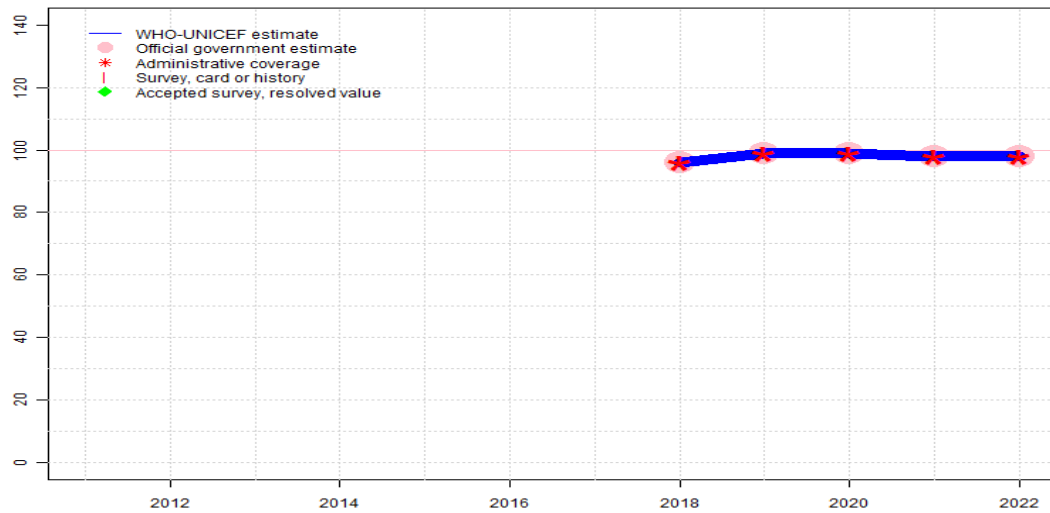|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	97	98	98	98	99	98	99	99	99	98	97	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	97	98	98	98	99	98	99	99	99	98	97	98
Administrative	97	98	98	98	NA	98	99	99	99	98	97	98
Survey	NA	NA	100	99	NA	NA	NA	NA	NA	NA	NA	NA

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.

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• 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:

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).

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. Inactivated polio vaccine introduced in February 2018. GoC=R+

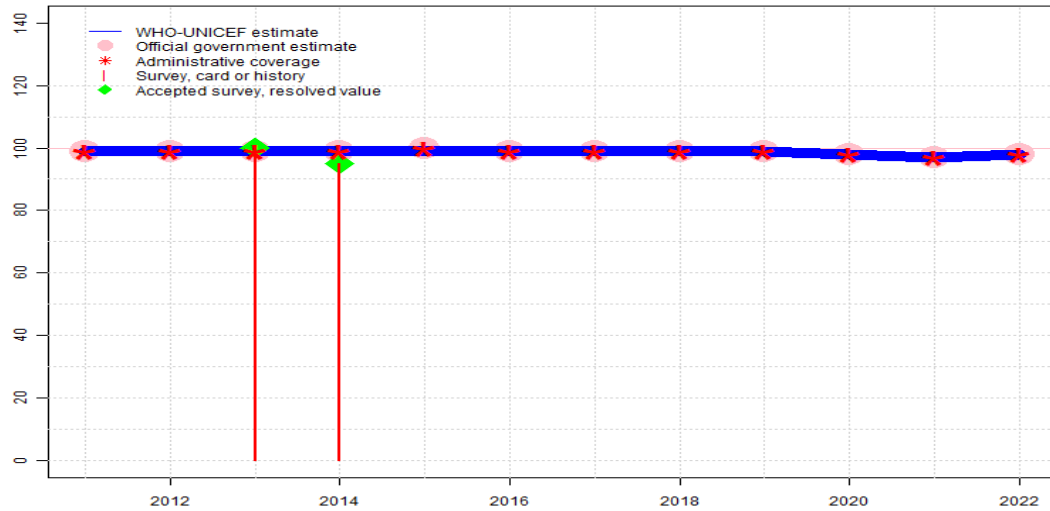|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	NA	96	99	99	98	98
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	96	99	99	98	98
Administrative	NA	NA	NA	NA	NA	NA	NA	96	99	99	98	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

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● 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.

Turkmenistan - MCV1

TKM - MCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 95 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 100 percent based on 1 survey(s). GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. GoC=R+ S+

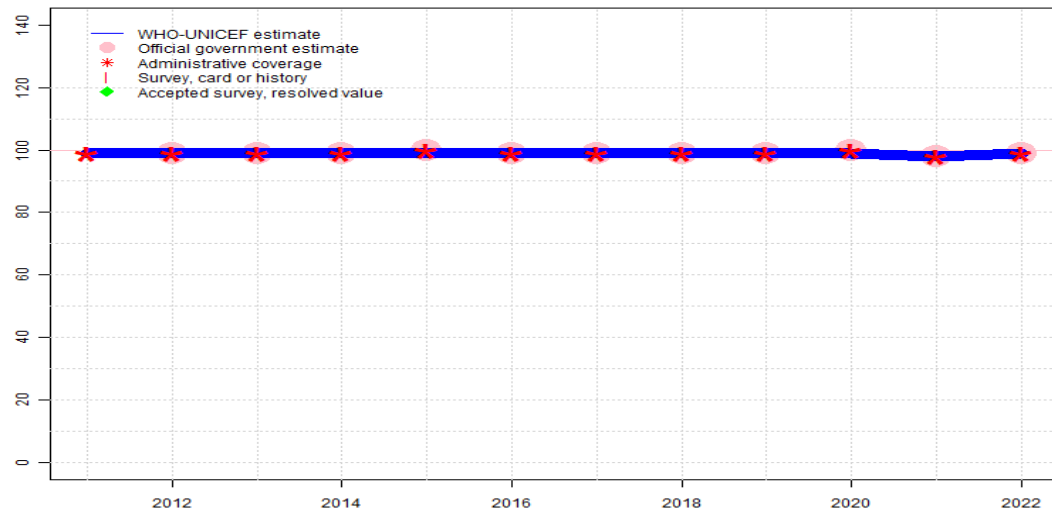|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	99	98	97	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	99	99	99	99	100	99	99	99	99	98	97	98
Administrative	99	99	99	99	100	99	99	99	99	98	97	98
Survey	NA	NA	100	95	NA	NA	NA	NA	NA	NA	NA	NA

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.

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• 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.

Turkmenistan - MCV2

TKM - MCV2

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

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

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+

2015: Estimate informed by reported data. GoC=R+

2014: Estimate informed by reported data. GoC=R+

2013: Estimate informed by reported data. GoC=R+

2012: Estimate informed by reported data. GoC=R+

2011: Estimate informed by reported administrative data. GoC=R+

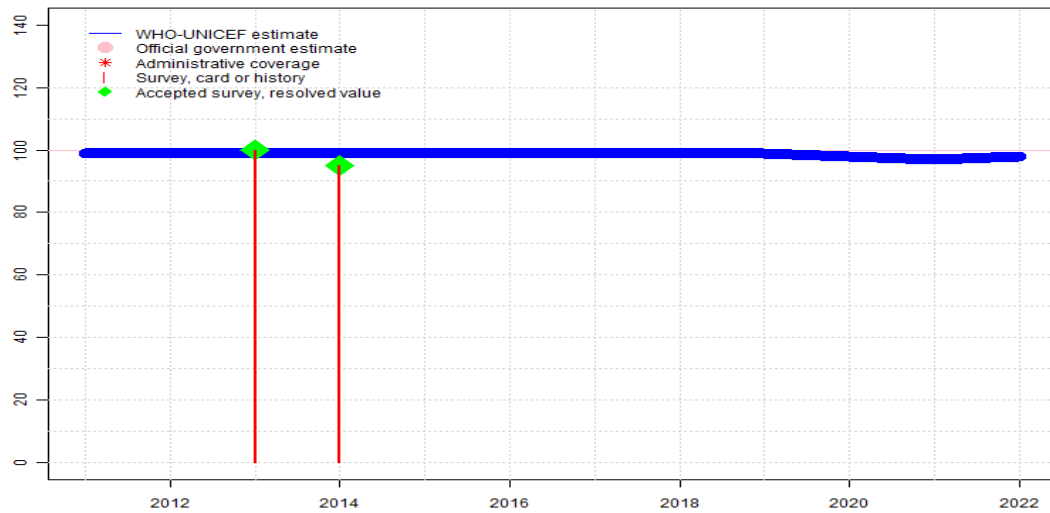|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	99	99	98	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	99	99	99	100	99	99	99	99	100	98	99
Administrative	99	99	99	99	100	99	99	99	99	100	98	99
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

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● 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.

Turkmenistan - RCV1

TKM - RCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	99	98	97	98
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	100	95	NA	NA	NA	NA	NA	NA	NA	NA

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 the accompanying graph and data table.

2022: Estimate based on estimated MCV1. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate based on estimated MCV1. GoC=R+
2020: Estimate based on estimated MCV1. GoC=R+
2019: Estimate based on estimated MCV1. 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+ S+
2015: Estimate based on estimated MCV1. GoC=R+ S+
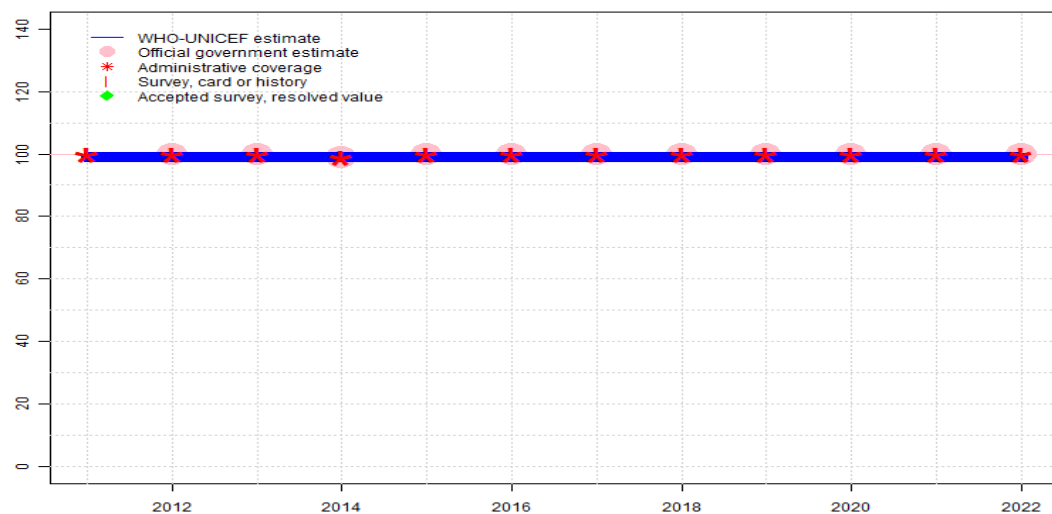2014: Estimate based on estimated MCV1. GoC=R+ S+
2013: Estimate based on estimated MCV1. GoC=R+ S+
2012: Estimate based on estimated MCV1. GoC=R+ S+
2011: Estimate based on estimated MCV1. GoC=R+ S+

Turkmenistan - HepBB

TKM - HepBB

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+
2021: Estimate informed by reported data. GoC=R+
2020: Estimate informed by reported data. GoC=R+
2019: Estimate informed by reported data. GoC=R+
2018: Estimate informed by reported data. GoC=R+
2017: Estimate informed by reported data. GoC=R+
2016: Estimate informed by reported data. GoC=R+
2015: Estimate informed by reported data. GoC=R+
2014: Estimate informed by reported data. GoC=R+
2013: Estimate informed by reported data. GoC=R+
2012: Estimate informed by reported data. GoC=R+
2011: Estimate informed by reported administrative data. GoC=R+

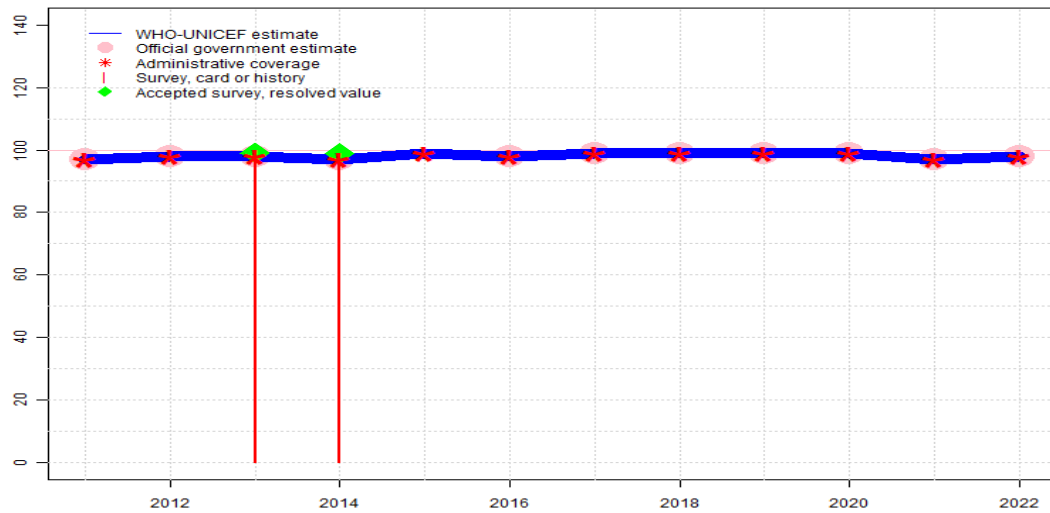|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	NA	100	100	99	100	100	100	100	100	100	100	100
Administrative	100	100	100	99	100	100	100	100	100	100	100	100
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Turkmenistan - HepB3

TKM - HepB3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported administrative data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). Turkmenistan Multiple Indicator Cluster Survey 2015-2016 card or history results of 100 percent modifed for recall bias to 99 percent based on 1st dose card or history coverage of 100 percent, 1st dose card only coverage of 99 percent and 3rd dose card only coverage of 98 percent. GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. GoC=R+ S+

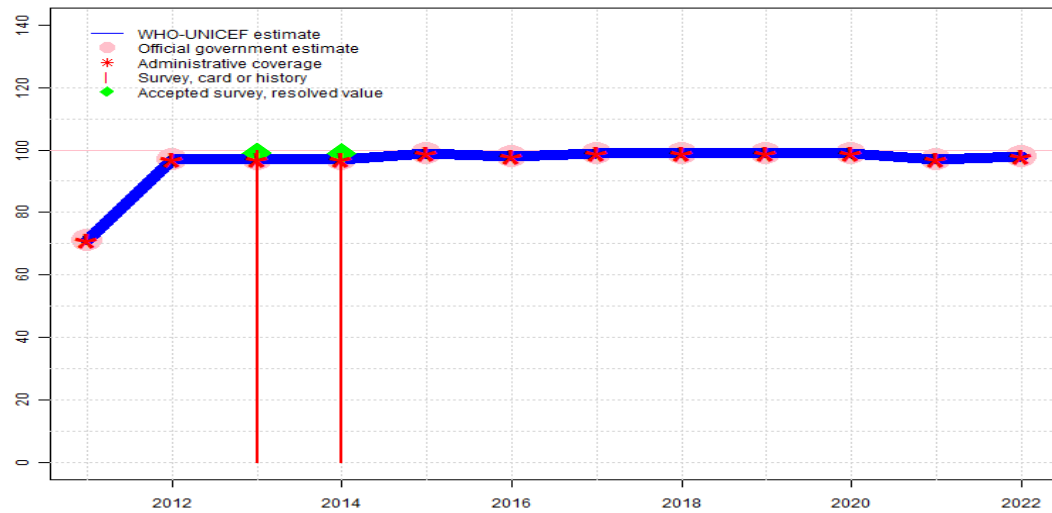|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	97	98	98	97	99	98	99	99	99	99	97	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	97	98	98	97	NA	98	99	99	99	99	97	98
Administrative	97	98	98	97	99	98	99	99	99	99	97	98
Survey	NA	NA	100	99	NA	NA	NA	NA	NA	NA	NA	NA

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.

TKM - Hib3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. GoC=R+

2018: Estimate informed by reported data. GoC=R+

2017: Estimate informed by reported data. GoC=R+

2016: Estimate informed by reported data. GoC=R+ S+

2015: Estimate informed by reported data. GoC=R+ S+

2014: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+

2013: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). Turkmenistan Multiple Indicator Cluster Survey 2015-2016 card or history results of 100 percent modifed for recall bias to 99 percent based on 1st dose card or history coverage of 100 percent, 1st dose card only coverage of 99 percent and 3rd dose card only coverage of 98 percent. GoC=R+ S+

2012: Estimate informed by reported data. GoC=R+ S+

2011: Estimate informed by reported data. Estimate challenged by: S-

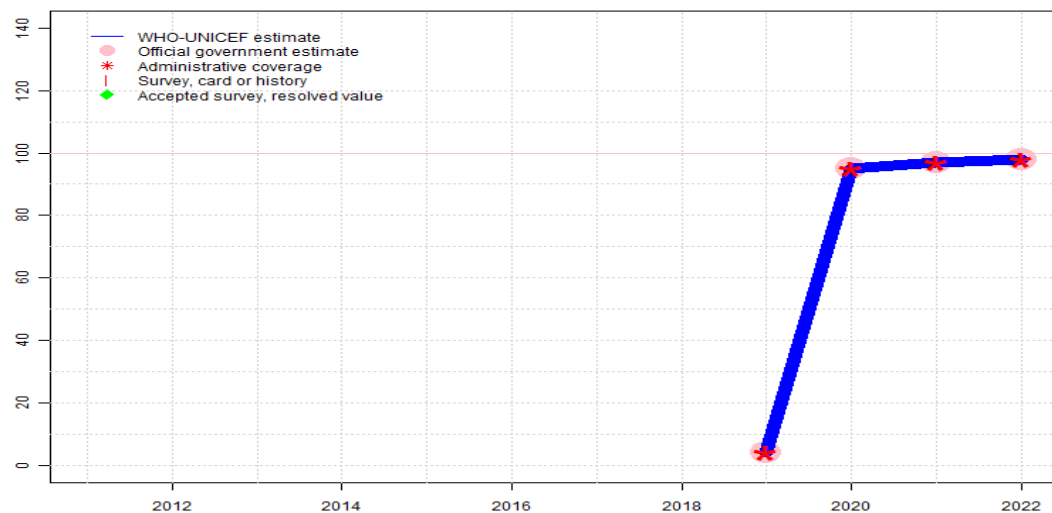|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	71	97	97	97	99	98	99	99	99	99	97	98
Estimate GoC	●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	71	97	97	97	99	98	99	99	99	99	97	98
Administrative	71	97	97	97	99	98	99	99	99	99	97	98
Survey	NA	NA	100	99	NA	NA	NA	NA	NA	NA	NA	NA

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.

TKM - RotaC

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. GoC=R+

2019: Estimate informed by reported data. Rotavirus vaccine introduced in October 2019. GoC=R+

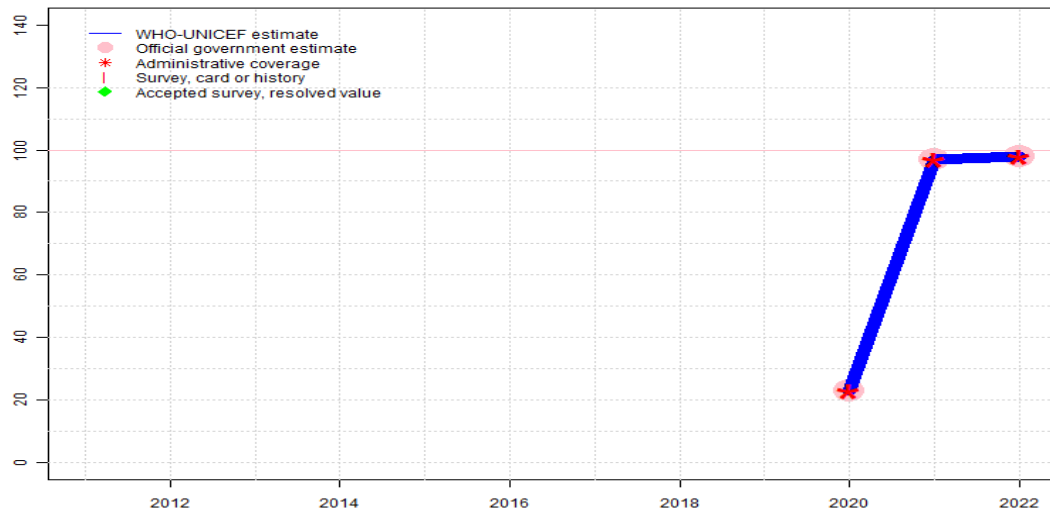|	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	4	95	97	98
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	●●	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	4	95	97	98
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	4	95	97	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Turkmenistan - PcV3

TKM - PcV3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey, card or history
- Accepted survey, resolved value

Description:

2022: Estimate informed by reported data. No nationally representative household survey inclusive of vaccination coverage assessment within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+

2021: Estimate informed by reported data. GoC=R+

2020: Estimate informed by reported data. Pneumococcal conjugate vaccine introduced during October 2019. PCV3 reporting started in 2020. GoC=R+

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	97	98
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	97	98
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	97	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

NOTE: A survey to measure vaccination coverage for infants (i.e., children
aged 0 to 11 months) will sample children aged 12 to 23 months at the
time of survey to capture the youngest annual cohort of children who
should have completed the vaccination schedule. Because WUENIC are for
infant vaccinations, survey data in this report are presented to reflect
the birth year of the youngest survey cohort. For example, results for a
survey conducted during December 2020 among children aged 12 to 23 months
at the time of the survey reflect the immunization experience of children
born in 2019. Depending on the timing of survey field work, results may
reflect the immunization experience of children born and vaccinated 1 or 2
years prior to the survey field work.

2014 Turkmenistan Multiple Indicator Cluster Survey 2015-2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99.9	12-23 m	778	100
BCG	Card	99.7	12-23 m	778	100
BCG	Card or History	99.9	12-23 m	778	100
DTP1	C or H <12 months	98.7	12-23 m	778	100
DTP1	Card	99.2	12-23 m	778	100
DTP1	Card or History	99.6	12-23 m	778	100
DTP3	C or H <12 months	98	12-23 m	778	100
DTP3	Card	98.1	12-23 m	778	100
DTP3	Card or History	99	12-23 m	778	100
HepB1	C or H <12 months	98.6	12-23 m	778	100
HepB1	Card	99.1	12-23 m	778	100
HepB1	Card or History	99.5	12-23 m	778	100
HepB3	C or H <12 months	98	12-23 m	778	100
HepB3	Card	98.2	12-23 m	778	100
HepB3	Card or History	99	12-23 m	778	100
Hib1	C or H <12 months	98.6	12-23 m	778	100
Hib1	Card	99.2	12-23 m	778	100
Hib1	Card or History	99.5	12-23 m	778	100
Hib3	C or H <12 months	98	12-23 m	778	100
Hib3	Card	98.4	12-23 m	778	100
Hib3	Card or History	99	12-23 m	778	100
MCV1	Card	90.5	12-23 m	778	100
MCV1	Card or History	95.2	12-23 m	778	100
Pol1	C or H <12 months	98.9	12-23 m	778	100
Pol1	Card	99.2	12-23 m	778	100
Pol1	Card or History	99.8	12-23 m	778	100
Pol3	C or H <12 months	98.6	12-23 m	778	100
Pol3	Card	98.1	12-23 m	778	100
Pol3	Card or History	98.8	12-23 m	778	100

2013 Turkmenistan Multiple Indicator Cluster Survey 2015-2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99.9	24-35 m	746	100
BCG	Card	99.6	24-35 m	746	100
BCG	Card or History	100	24-35 m	746	100
DTP1	C or H <12 months	98.4	24-35 m	746	100
DTP1	Card	99	24-35 m	746	100
DTP1	Card or History	99.9	24-35 m	746	100
DTP3	C or H <12 months	97.2	24-35 m	746	100
DTP3	Card	98.6	24-35 m	746	100
DTP3	Card or History	99.9	24-35 m	746	100
HepB1	C or H <12 months	98.4	24-35 m	746	100
HepB1	Card	99.1	24-35 m	746	100
HepB1	Card or History	99.9	24-35 m	746	100
HepB3	C or H <12 months	97.2	24-35 m	746	100
HepB3	Card	98.5	24-35 m	746	100
HepB3	Card or History	99.9	24-35 m	746	100
Hib1	C or H <12 months	98.4	24-35 m	746	100
Hib1	Card	98.9	24-35 m	746	100
Hib1	Card or History	99.9	24-35 m	746	100
Hib3	C or H <12 months	97	24-35 m	746	100
Hib3	Card	98.1	24-35 m	746	100
Hib3	Card or History	99.7	24-35 m	746	100
MCV1	C or H <12 months	99.3	24-35 m	746	100
MCV1	Card	99	24-35 m	746	100
MCV1	Card or History	99.8	24-35 m	746	100
Pol1	C or H <12 months	98.6	24-35 m	746	100
Pol1	Card	98.9	24-35 m	746	100
Pol1	Card or History	100	24-35 m	746	100
Pol3	C or H <12 months	97.2	24-35 m	746	100
Pol3	Card	98.6	24-35 m	746	100
Pol3	Card or History	99.9	24-35 m	746	100

1999 Turkmenistan Demographic and Health Survey 2000, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	93.4	12-23 m	646	94
DTP1	Card	93.5	12-23 m	646	94
DTP3	Card	92.3	12-23 m	646	94
MCV1	Card	87.6	12-23 m	646	94
Pol1	Card	93.4	12-23 m	646	94
Pol3	Card	91.5	12-23 m	646	94

Further information and estimates for previous years are available at:
https://data.unicef.org/topic/child-health/immunization/
https://immunizationdata.who.int/listing.html