

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.

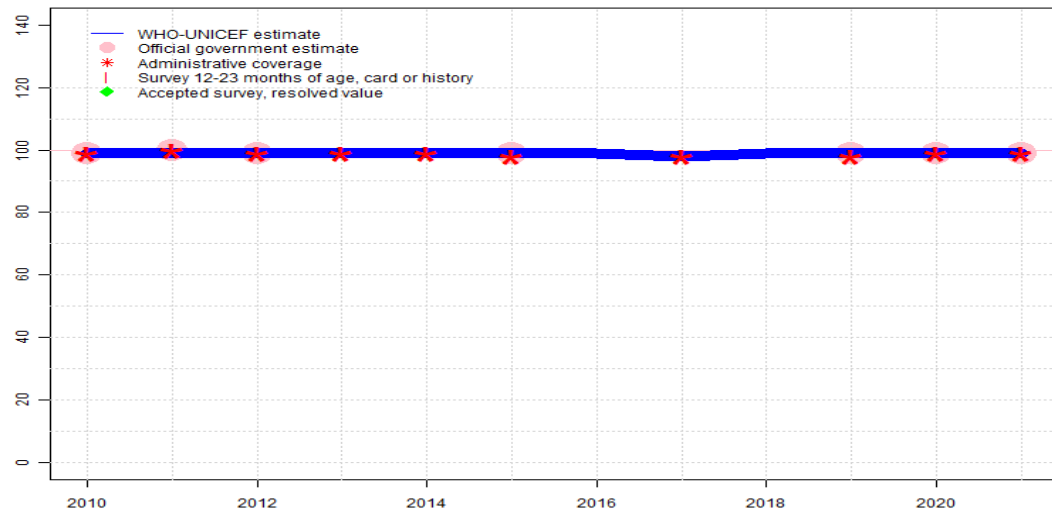
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect 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.

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Malaysia - BCG

MYS - BCG



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	99	99	99	99	99	99	99	98	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●	●●	●	●●	●●	●
Official	99	100	99	NA	NA	99	NA	NA	NA	99	99	99
Administrative	99	100	99	99	99	98	NA	98	NA	98	99	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.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2021: Estimate based on coverage reported by national government. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

2020: Estimate based on coverage reported by national government. GoC=R+ D+

2019: Estimate based on coverage reported by national government. GoC=R+ D+

2018: Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data

2017: Estimate based on reported administrative data. GoC=R+ D+

2016: Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data

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

2014: Estimate based on reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

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

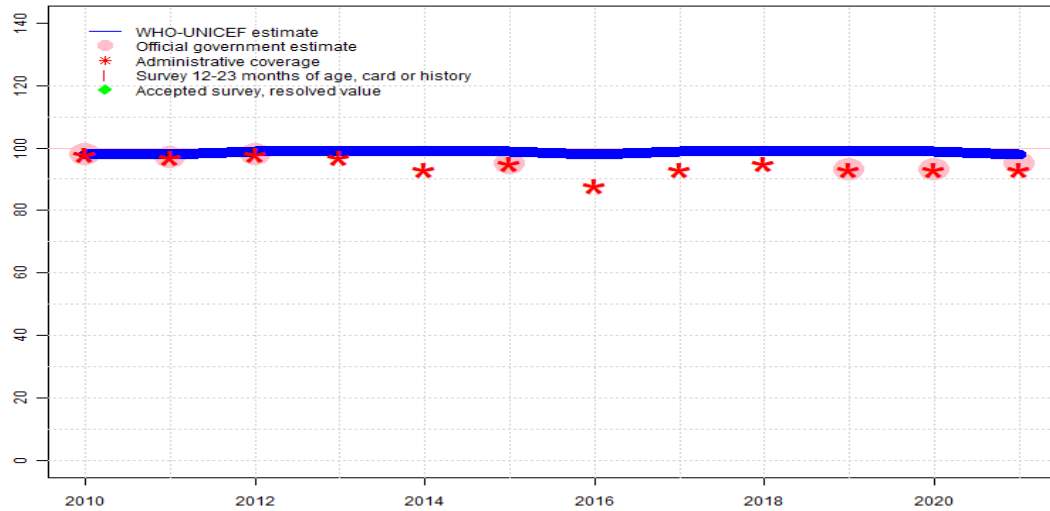
2012: Estimate based on coverage reported by national government. GoC=R+ D+

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

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

Malaysia - DTP1

MYS - DTP1



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	98	98	99	99	99	99	98	99	99	99	99	98
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	98	97	98	NA	NA	95	NA	NA	NA	93	93	95
Administrative	98	97	98	97	93	95	88	93	95	93	93	93
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.

Description:

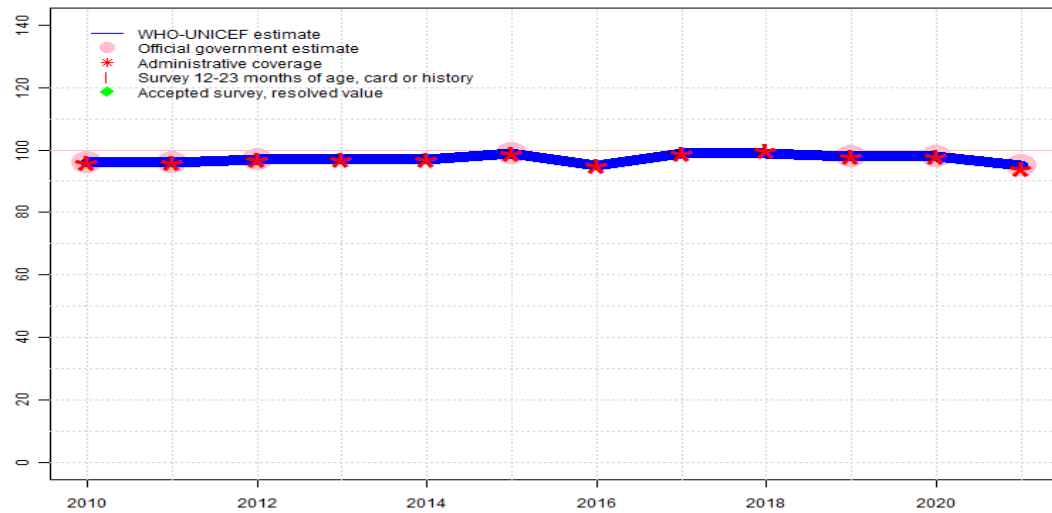
2021: DTP1 coverage estimated based on DTP3 coverage of 95. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-R-

2020: DTP1 coverage estimated based on DTP3 coverage of 98. Estimate challenged by: R-
 2019: DTP1 coverage estimated based on DTP3 coverage of 98. Estimate challenged by: R-
 2018: DTP1 coverage estimated based on DTP3 coverage of 100. Estimate challenged by: R-
 2017: DTP1 coverage estimated based on DTP3 coverage of 99. Estimate challenged by: R-
 2016: DTP1 coverage estimated based on DTP3 coverage of 95. Estimate challenged by: D-R-
 2015: DTP1 coverage estimated based on DTP3 coverage of 99. Estimate challenged by: R-
 2014: DTP1 coverage estimated based on DTP3 coverage of 97. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. Estimate challenged by: R-

2013: DTP1 coverage estimated based on DTP3 coverage of 97. Estimate challenged by: R-
 2012: DTP1 coverage estimated based on DTP3 coverage of 97. Estimate challenged by: R-
 2011: DTP1 coverage estimated based on DTP3 coverage of 96. Estimate challenged by: R-
 2010: DTP1 coverage estimated based on DTP3 coverage of 96. Estimate challenged by: R-

Malaysia - DTP3

MYS - DTP3



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	96	96	97	97	97	99	95	99	99	98	98	95
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	96	96	97	NA	NA	99	NA	NA	NA	98	98	95
Administrative	96	96	97	97	97	99	95	99	100	98	98	94
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.

Description:

2021: Estimate based on coverage reported by national government. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

2020: Estimate based on coverage reported by national government. GoC=R+ D+

2019: Estimate based on coverage reported by national government. GoC=R+ D+

2018: Estimate based on reported administrative data. GoC=R+ D+

2017: Estimate based on reported administrative data. GoC=R+ D+

2016: Estimate based on reported administrative data. GoC=R+ D+

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

2014: Estimate based on reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

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

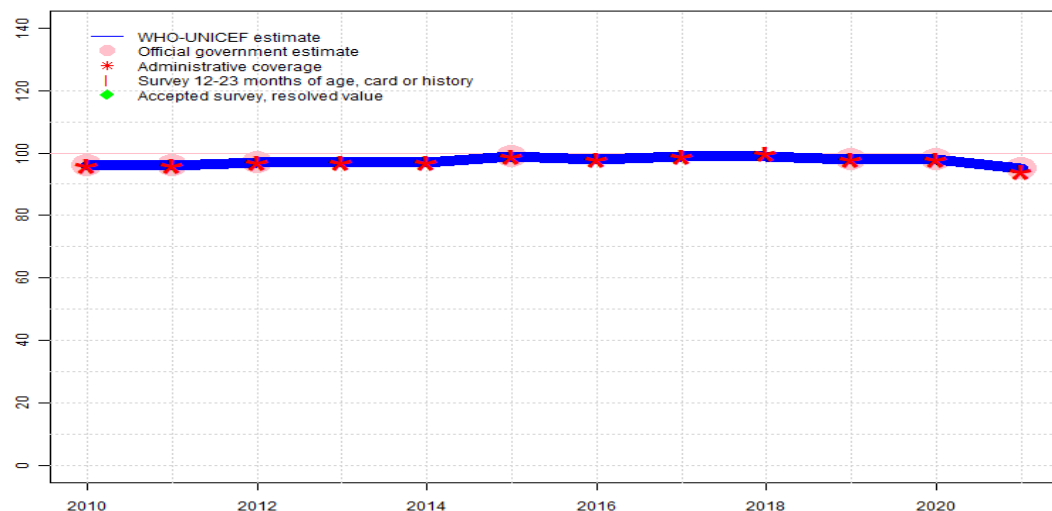
2012: Estimate based on coverage reported by national government. GoC=R+ D+

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

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

Malaysia - Pol3

MYS - Pol3



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	96	96	97	97	97	99	98	99	99	98	98	95
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	96	96	97	NA	NA	99	NA	NA	NA	98	98	95
Administrative	96	96	97	97	97	99	98	99	100	98	98	94
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

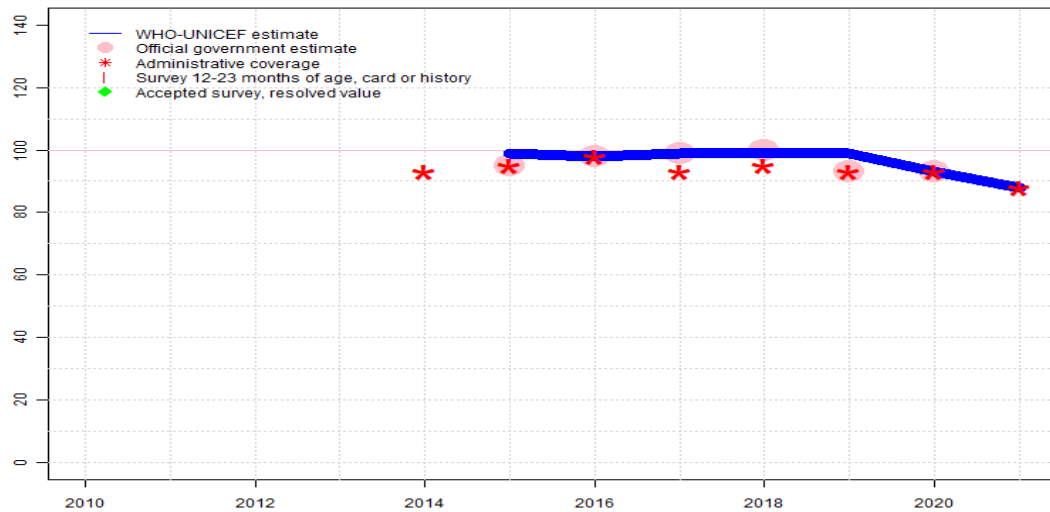
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2021: Estimate based on coverage reported by national government. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+
- 2020: Estimate based on coverage reported by national government. GoC=R+ D+
- 2019: Estimate based on coverage reported by national government. GoC=R+ D+
- 2018: Estimate based on reported administrative data. GoC=R+ D+
- 2017: Estimate based on reported administrative data. GoC=R+ D+
- 2016: Estimate based on reported administrative data. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+
- 2013: Estimate based on reported administrative data. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+

Malaysia - IPV1

MYS - IPV1



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	99	98	99	99	99	93	88
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	••	••
Official	NA	NA	NA	NA	NA	95	98	99	100	93	93	NA
Administrative	NA	NA	NA	NA	93	95	98	93	95	93	93	88
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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- 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.

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Description:

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

2021: Estimate based on reported administrative estimate. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

2020: Estimate based on coverage reported by national government. GoC=R+ D+

2019: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2018: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

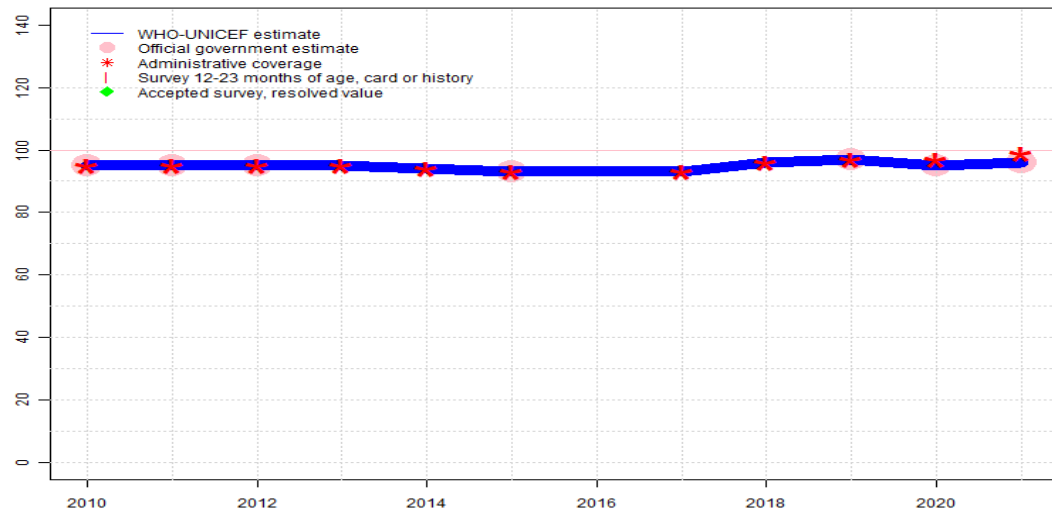
2017: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2016: Estimate is based on estimated DTP1 level. Estimate challenged by: R-

2015: Estimate is based on estimated DTP1 level. Inactivated polio vaccine as part of a combination DTP-IPV-Hib vaccine in June 2009 and was available nationally during 2010. Estimate challenged by: R-

Malaysia - MCV1

MYS - MCV1



Description:

- 2021: Estimate based on coverage reported by national government. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+
- 2020: Estimate based on coverage reported by national government. GoC=R+ D+
- 2019: Estimate based on coverage reported by national government. GoC=R+ D+
- 2018: Estimate based on reported administrative data. GoC=R+ D+
- 2017: Estimate based on reported administrative data. GoC=R+ D+
- 2016: Estimate based on interpolation between data reported by national government. GoC=No accepted empirical data
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+
- 2013: Estimate based on reported administrative data. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. GoC=R+ D+

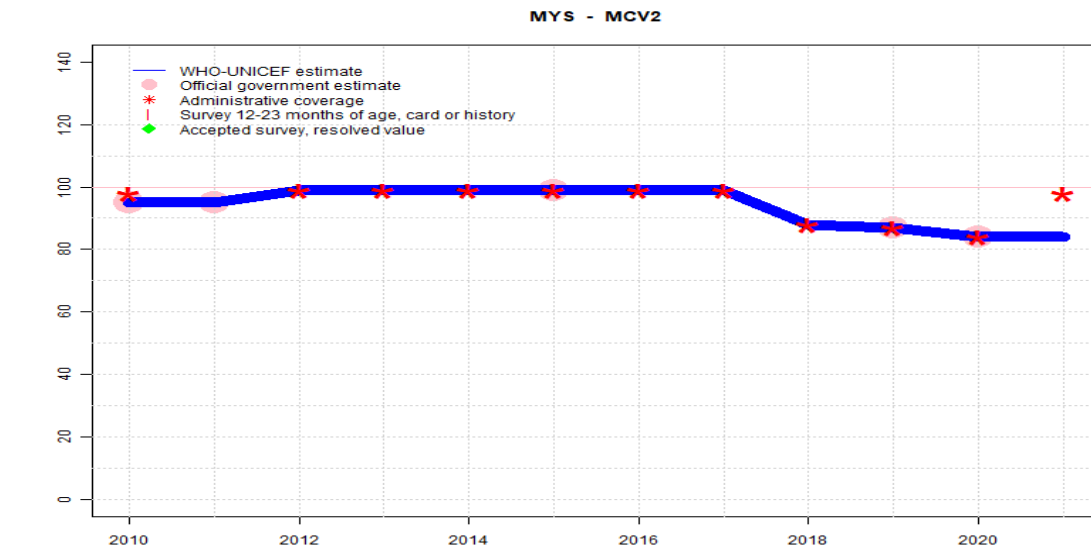
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	95	95	95	95	94	93	93	93	96	97	95	96
Estimate GoC	●●	●●	●●	●●	●●	●●	●	●●	●●	●●	●●	●●
Official	95	95	95	NA	NA	93	NA	NA	NA	97	95	96
Administrative	95	95	95	95	94	93	NA	93	96	97	97	99
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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- 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.

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Malaysia - MCV2



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	95	95	99	99	99	99	99	99	88	87	84	84
Estimate GoC	●●	●●	●●	●	●	●	●●	●	●●	●●	●●	●●
Official	95	95	NA	NA	NA	99	NA	NA	NA	87	84	NA
Administrative	98	NA	99	99	99	99	99	99	88	87	84	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.

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Description:

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

2021: Estimate based on extrapolation from data reported by national government. Reported data excluded due to sudden change in coverage from 84 level to 98 percent. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

2020: Estimate based on coverage reported by national government. GoC=R+ D+

2019: Estimate based on coverage reported by national government. GoC=R+ D+

2018: Estimate based on reported administrative estimate. Reported decline in administrative coverage appears to be due in part to a change in the recommended age for administration and an increase in the reported target population. Number of children vaccinated increased 8 percent between 2017 and 2018. GoC=R+ D+

2017: Estimate based on reported administrative estimate. Estimate challenged by: D-

2016: Estimate based on reported administrative estimate. GoC=R+ D+

2015: Estimate based on coverage reported by national government. Estimate challenged by: D-

2014: Estimate based on reported administrative estimate. Estimate challenged by: D-

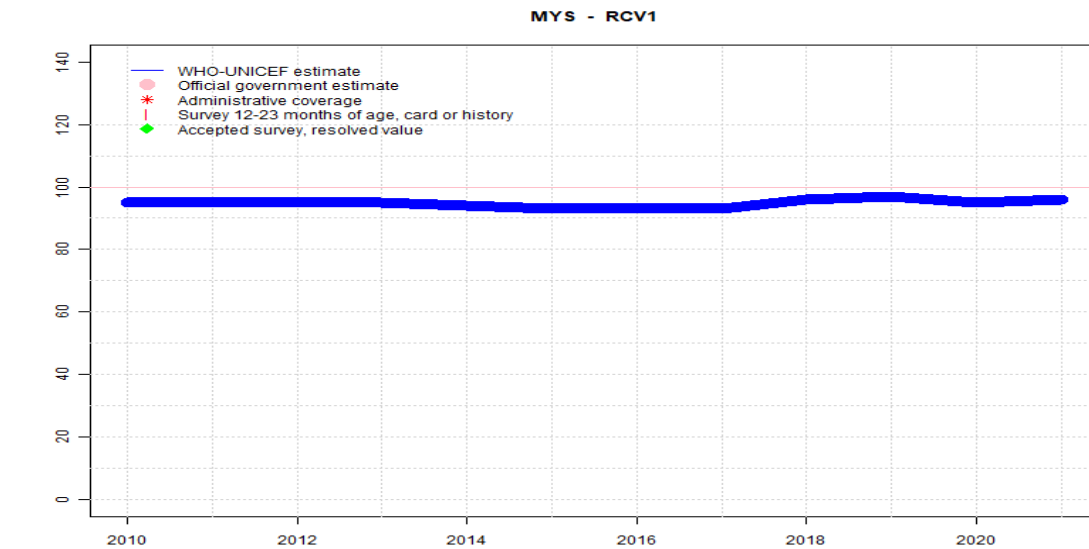
2013: Estimate based on reported administrative estimate. Estimate challenged by: D-

2012: Estimate based on reported administrative estimate. GoC=R+ D+

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

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

Malaysia - RCV1



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	95	95	95	95	94	93	93	93	96	97	95	96
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	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.

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.

2021: Estimate based on estimated MCV1. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

2020: Estimate based on estimated MCV1. GoC=R+ D+

2019: Estimate based on estimated MCV1. GoC=R+ D+

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

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

2016: Estimate based on estimated MCV1. GoC=No accepted empirical data

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

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

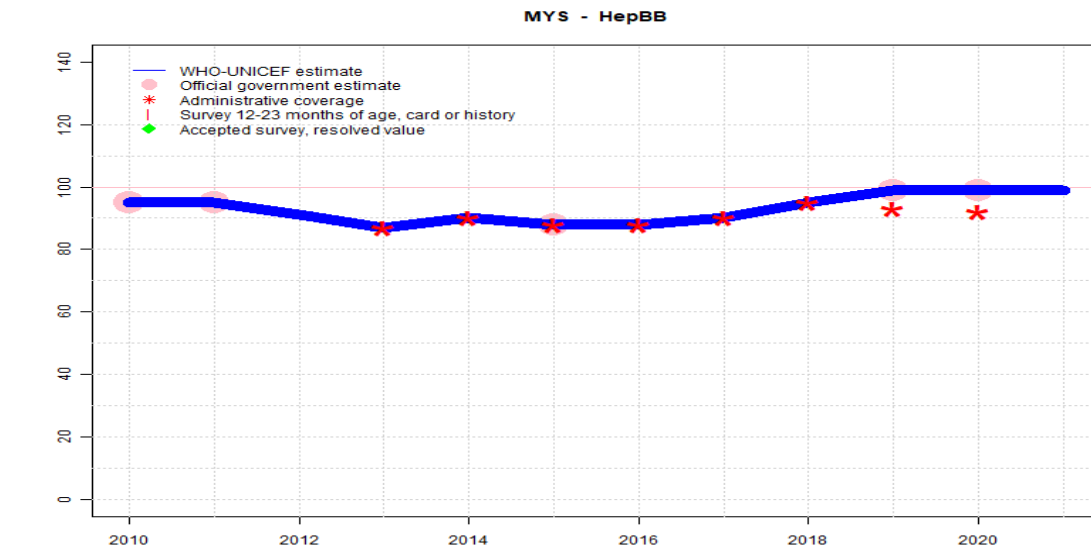
2013: Estimate based on estimated MCV1. GoC=R+ D+

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

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

2010: Estimate based on estimated MCV1. GoC=R+ D+

Malaysia - HepBB



Description:

- 2021: Estimate based on extrapolation from data reported by national government. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=No accepted empirical data
- 2020: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2019: Estimate based on coverage reported by national government. GoC=R+ D+
- 2018: Estimate based on reported administrative estimate. GoC=R+ D+
- 2017: Estimate based on reported administrative estimate. GoC=R+ D+
- 2016: Estimate based on reported administrative estimate. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on reported administrative estimate. GoC=R+ D+
- 2013: Estimate based on reported administrative estimate. GoC=R+ D+
- 2012: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2011: Estimate based on coverage reported by national government. GoC=R+
- 2010: Estimate based on coverage reported by national government. GoC=R+

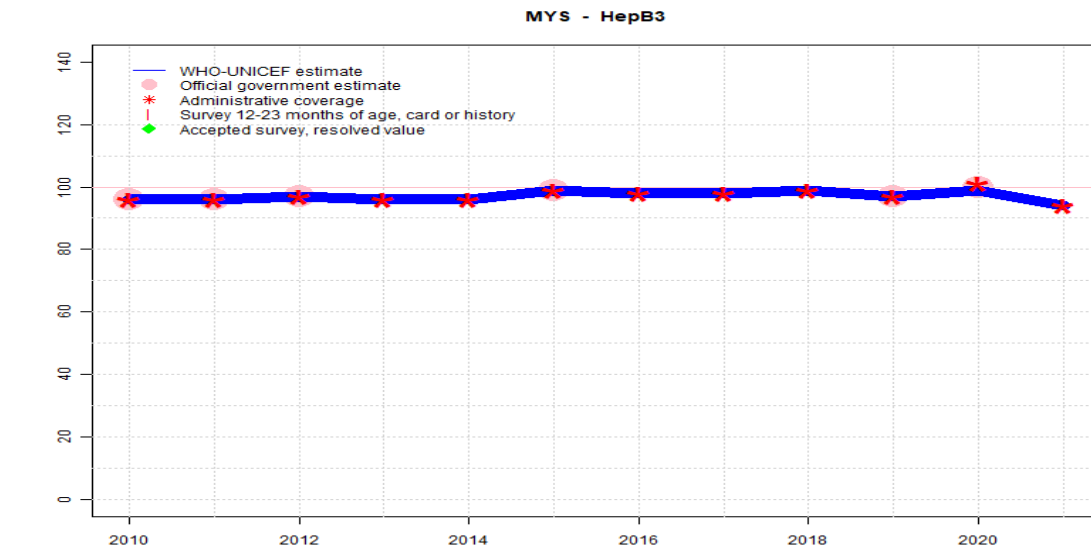
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	95	95	91	87	90	88	88	90	95	99	99	99
Estimate GoC	●●	●●	●	●●	●●	●●	●●	●●	●●	●●	●	●
Official	95	95	NA	NA	NA	88	NA	NA	NA	99	99	NA
Administrative	NA	NA	NA	87	90	88	88	90	95	93	92	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Malaysia - HepB3



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	96	96	97	96	96	99	98	98	99	97	99	94
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	96	96	97	NA	NA	99	NA	NA	NA	97	100	NA
Administrative	96	96	97	96	96	99	98	98	99	97	101	94
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.

Description:

2021: Estimate based on reported administrative data. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

2020: Estimate based on coverage reported by national government. GoC=R+ D+

2019: Estimate based on coverage reported by national government. GoC=R+ D+

2018: Estimate based on reported administrative data. GoC=R+ D+

2017: Estimate based on reported administrative data. GoC=R+ D+

2016: Estimate based on reported administrative data. GoC=R+ D+

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

2014: Estimate based on reported administrative data. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

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

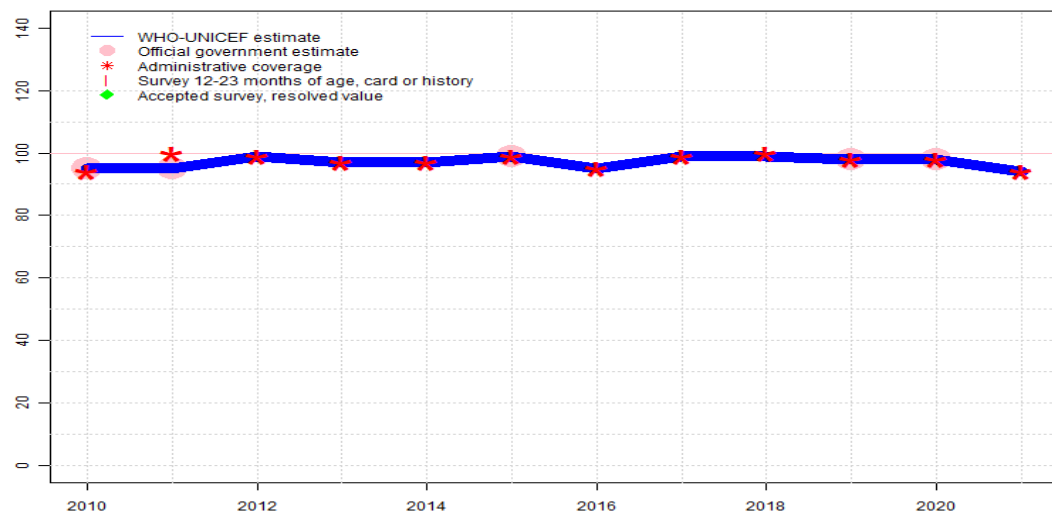
2012: Estimate based on coverage reported by national government. GoC=R+ D+

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

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

Malaysia - Hib3

MYS - Hib3



Description:

2021: Estimate based on reported administrative estimate. Declines in reported number of doses administered since 2019 are largely unreflected in reported coverage levels due in part to declines in the reported target population. From 2019 to 2021, the reported target population decreased 7 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

2020: Estimate based on coverage reported by national government. GoC=R+ D+

2019: Estimate based on coverage reported by national government. GoC=R+ D+

2018: Estimate based on reported administrative estimate. GoC=R+ D+

2017: Estimate based on reported administrative estimate. GoC=R+ D+

2016: Estimate based on reported administrative estimate. GoC=R+ D+

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

2014: Estimate based on reported administrative estimate. Results from the National Health and Morbidity Survey conducted in 2016 among children aged 12-23 months, reflecting coverage for the 2014 birth cohort, support reported coverage. GoC=R+ D+

2013: Estimate based on reported administrative estimate. GoC=R+ D+

2012: Estimate based on reported administrative estimate. GoC=R+ D+

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

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

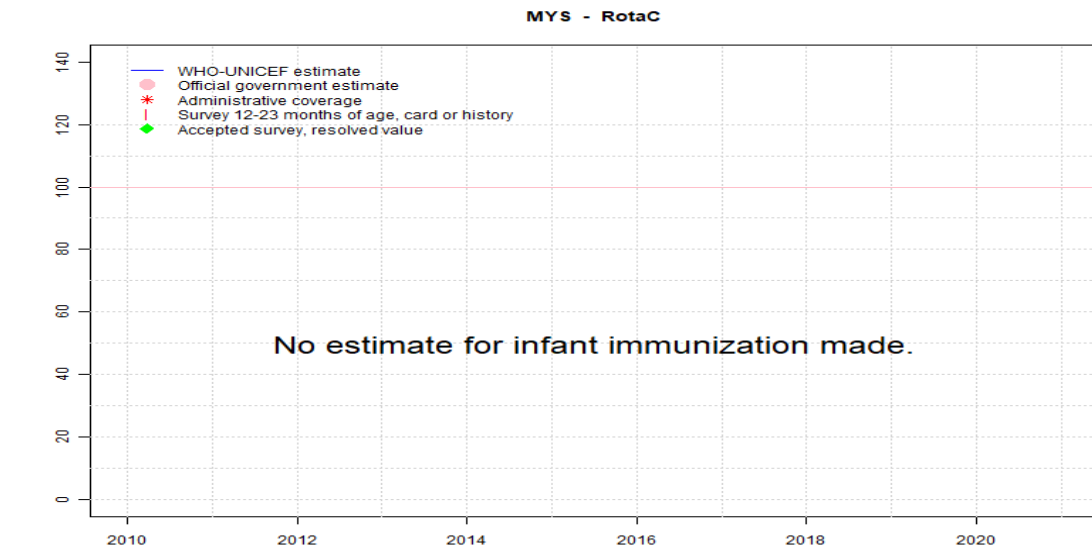
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	95	95	99	97	97	99	95	99	99	98	98	94
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	95	95	NA	NA	NA	99	NA	NA	NA	98	98	NA
Administrative	94	100	99	97	97	99	95	99	100	98	98	94
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

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Malaysia - RotaC



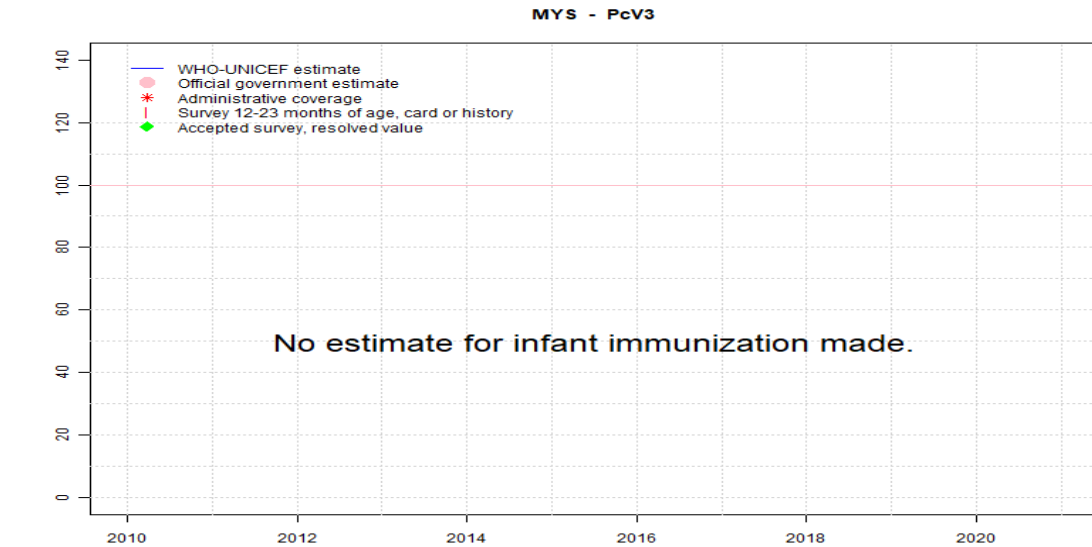
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Malaysia - PcV3



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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	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.

Malaysia - survey details

2014 Malaysia National Health and Morbidity Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	92.3	12-23 m	10138	86
DTP1	Card	89.8	12-23 m	10139	86
DTP1	History	9.5	12-23 m	10139	86
DTP3	Card	89	12-23 m	10139	86
DTP3	History	9.5	12-23 m	10139	86
HepB1	Card	92.2	12-23 m	10136	86
HepB1	History	7.8	12-23 m	10136	86

HepB3	Card	88.4	12-23 m	10136	86
HepB3	History	9.9	12-23 m	10136	86
Hib1	Card	89.8	12-23 m	10139	86
Hib1	History	9.5	12-23 m	10139	86
Hib3	Card	89	12-23 m	10139	86
Hib3	History	9.5	12-23 m	10139	86
IPV1	Card	89.8	12-23 m	10139	86
IPV1	History	9.5	12-23 m	10139	86
MCV1	Card	87.3	12-23 m	10139	86
MCV1	History	9.3	12-23 m	10139	86

Further information and estimates for previous years are available at:

<https://data.unicef.org/topic/child-health/immunization/>

<https://immunizationdata.who.int/listing.html>