

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.

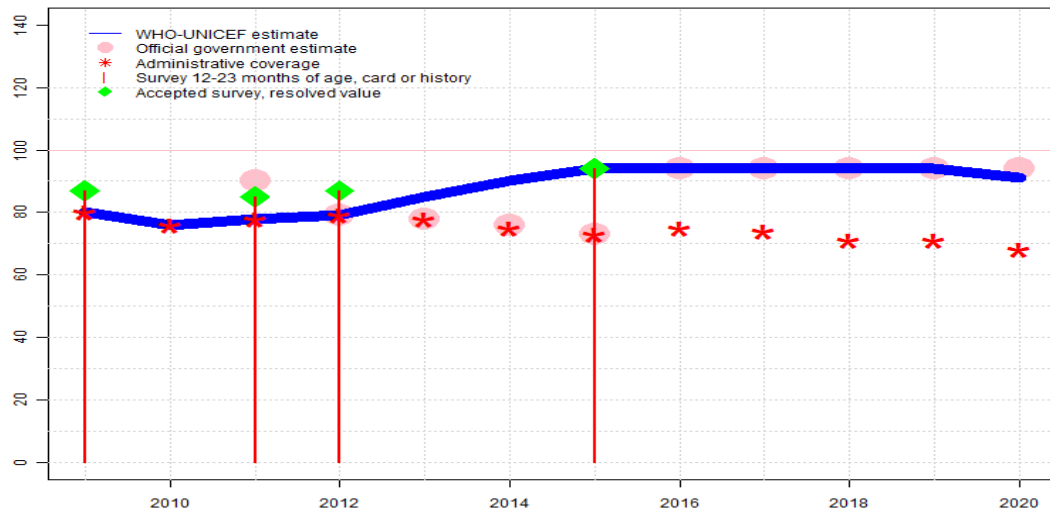
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect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

COM - BCG



Description:

- 2020: Estimate exceptionally based on the difference between administrative coverage 2019 to 2020 applied to the 2019 WUENIC estimate. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. 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-
- 2019: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2018: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 94 percent based on 1 survey(s). GoC=Assigned by working group. GoC assigned to maintain consistency across vaccines.
- 2014: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 85 percent based on 1 survey(s). Reported data excluded due to an increase from 76 percent to 90 percent with decrease 79 percent. Estimate challenged by: D-
- 2010: Estimate based on reported administrative data. Estimate challenged by: D-S-
- 2009: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Estimate challenged by: D-

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	80	76	78	79	85	90	94	94	94	94	94	91
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	90	79	78	76	73	94	94	94	94	94
Administrative	80	76	78	79	78	75	73	75	74	71	71	68
Survey	87	NA	85	87	NA	NA	94	NA	NA	NA	NA	NA

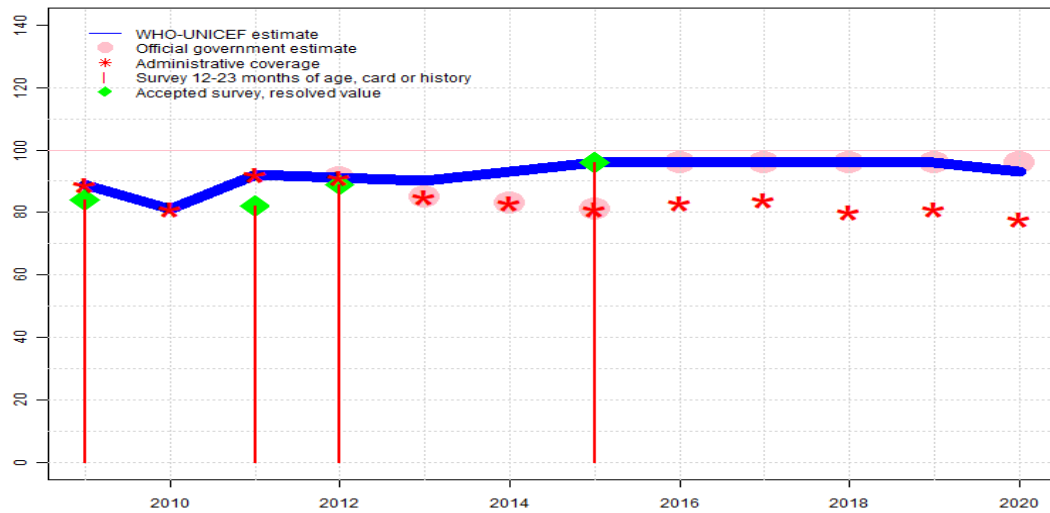
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2020 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.

Comoros - DTP1

COM - DTP1



Description:

- 2020: Estimate exceptionally based on the difference between administrative coverage 2019 to 2020 applied to the 2019 WUENIC estimate. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports three month vaccine stock-out at national level. Estimate challenged by: D-R-
- 2019: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2018: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 96 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 89 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 82 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on reported administrative data. Estimate challenged by: D-
- 2009: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 84 percent based on 1 survey(s). Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: D-

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	89	81	92	91	90	93	96	96	96	96	96	93
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	NA	91	85	83	81	96	96	96	96	96
Administrative	89	81	92	91	85	83	81	83	84	80	81	78
Survey	84	NA	82	89	NA	NA	96	NA	NA	NA	NA	NA

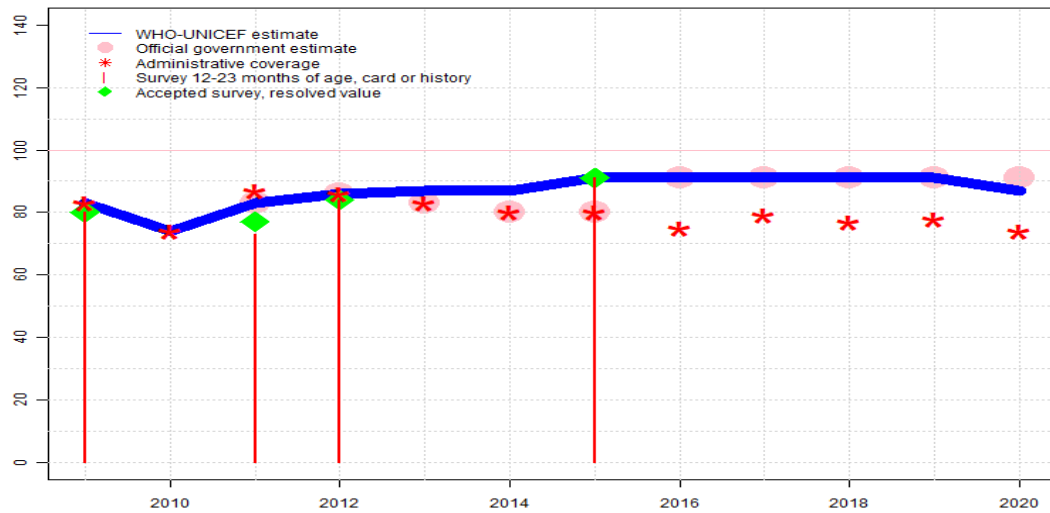
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2020 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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Comoros - DTP3

COM - DTP3



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	83	74	83	86	87	87	91	91	91	91	91	87
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	83	86	83	80	80	91	91	91	91	91
Administrative	83	74	87	86	83	80	80	75	79	77	78	74
Survey	80	NA	73	84	NA	NA	91	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: 2020 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:

2020: Estimate exceptionally based on the difference between administrative coverage 2019 to 2020 applied to the 2019 WUENIC estimate. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports three month vaccine stock-out at national level. Estimate challenged by: D-R-

2019: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2018: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 91 percent based on 1 survey(s). Estimate challenged by: D-R-

2014: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-

2013: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-

2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 84 percent based on 1 survey(s). Estimate challenged by: D-

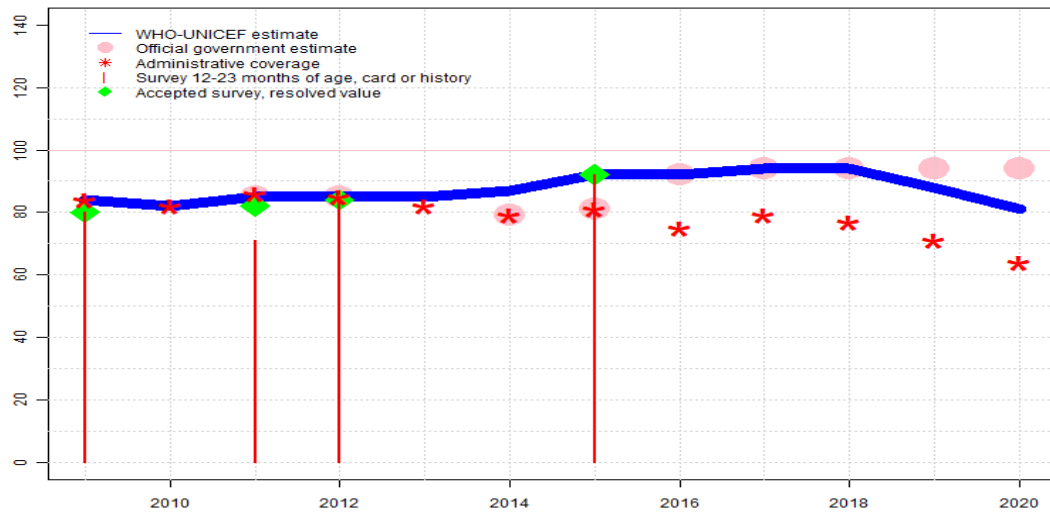
2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 77 percent based on 1 survey(s). Comoros Demographic and Health and Multiple Indicator Survey 2012 card or history results of 73 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 82 percent, 1st dose card only coverage of 69 percent and 3rd dose card only coverage of 65 percent. Estimate challenged by: D-

2010: Estimate based on reported administrative data. Estimate challenged by: D-

2009: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: D-

Comoros - Pol3

COM - Pol3



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	84	82	85	85	85	87	92	92	94	94	88	81
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	NA	NA	85	85	NA	79	81	92	94	94	94	94
Administrative	84	82	86	85	82	79	81	75	79	77	71	64
Survey	80	NA	71	84	NA	NA	92	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: 2020 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.

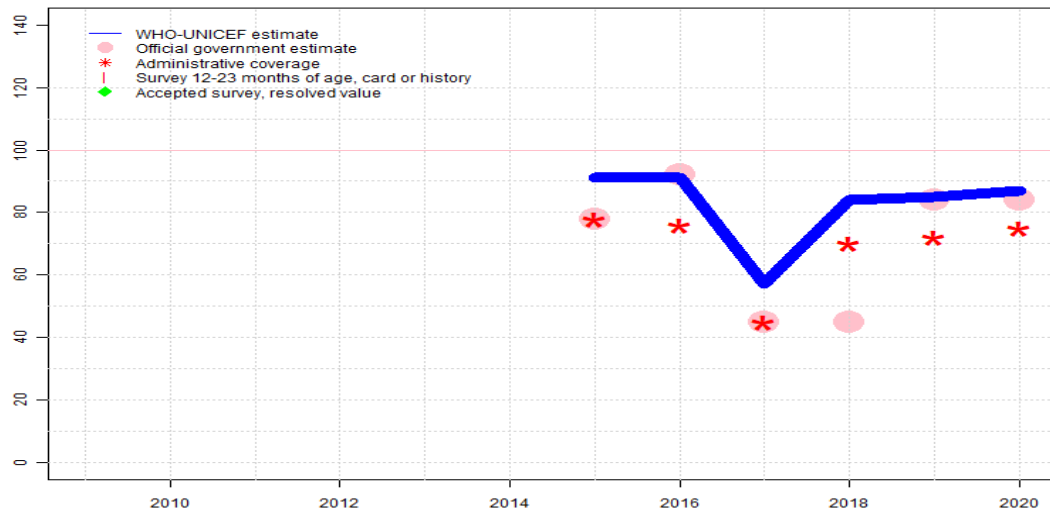
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2020: Estimate reflects trends in reported administrative data. Programme reports three month vaccine stock-out at national and district levels. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. 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-
- 2019: Estimate reflects trends in reported administrative data. Programme reports three month vaccine stock-out at national and district levels. Estimate of 88 percent changed from previous revision value of 94 percent. Estimate challenged by: D-R-
- 2018: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
- 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 92 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 84 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 82 percent based on 1 survey(s). Comoros Demographic and Health and Multiple Indicator Survey 2012 card or history results of 71 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 87 percent, 1st dose card only coverage of 72 percent and 3rd dose card only coverage of 68 percent. Estimate challenged by: D-
- 2010: Estimate based on reported administrative data. Estimate challenged by: D-
- 2009: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). Estimate challenged by: D-

Comoros - IPV1

COM - IPV1



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	NA	NA	NA	NA	NA	NA	91	91	57	84	85	87
Estimate GoC	NA	NA	NA	NA	NA	NA	●	●	●	●	●	●
Official	NA	NA	NA	NA	NA	NA	78	92	45	45	84	84
Administrative	NA	NA	NA	NA	NA	NA	78	76	45	70	72	75
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: 2020 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:

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).

2020: Estimate based on estimated DTP3 coverage. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. 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-

2019: Estimate of 85 percent assigned by working group. Estimate based on estimated DTP3 coverage adjusted for the difference in reported administrative coverage between DTP3 and IPV1. Estimate of 85 percent changed from previous revision value of 84 percent. Estimate challenged by: D-R-

2018: Estimate of 84 percent assigned by working group. Estimate based on estimated DTP3 coverage adjusted for the difference in reported administrative coverage between DTP3 and IPV1. Estimate challenged by: D-R-

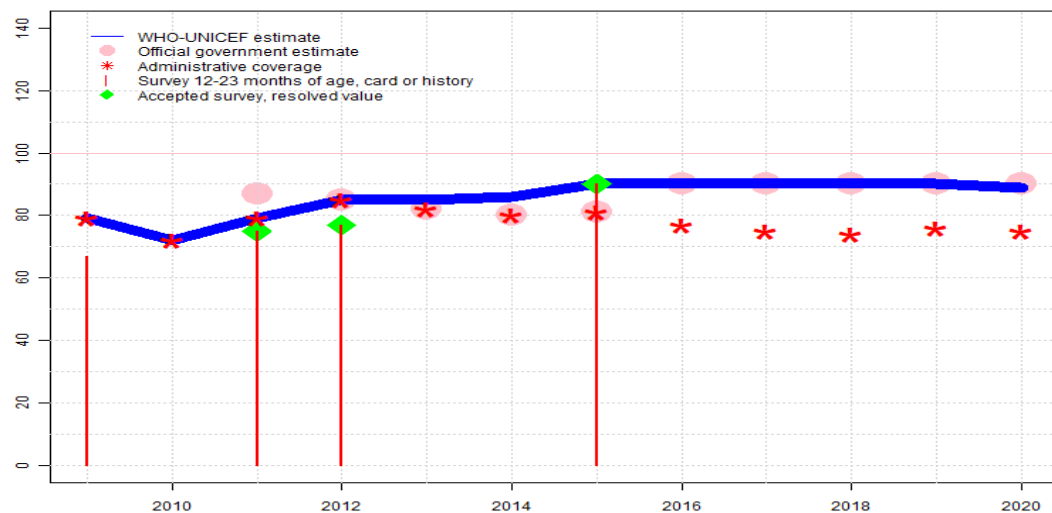
2017: Estimate based on the relation between DTP3 reported and estimate. Programme reports a nine-month vaccine stock-out. Estimate challenged by: D-R-

2016: Estimate of 91 percent assigned by working group. Estimate is based on estimated DTP3 coverage level. Reported data excluded due to an increase from 78 percent to 92 percent with decrease 45 percent. Reported official coverage levels are based on survey results. Estimate challenged by: D-R-

2015: Estimate of 91 percent assigned by working group. Estimate is based on estimated DTP3 coverage level. Inactivated polio vaccine introduced during January 2015. Estimate challenged by: D-R-

Comoros - MCV1

COM - MCV1



Description:

- 2020: Estimate exceptionally based on the difference between administrative coverage 2019 to 2020 applied to the 2019 WUENIC estimate. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. 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-
- 2019: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2018: Estimate based on coverage reported by national government. Programme reports three month vaccine stock-out at the national level. Estimate challenged by: D-
- 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
- 2015: Estimate of 90 percent assigned by working group. Estimate is based on survey results consistent with observed survey results for other vaccines which confirmed reported coverage. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 and 2015 levels. Estimate challenged by: D-R-
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 77 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 75 percent based on 1 survey(s). No explanation provided for adjustment of official coverage from administrative. Estimate challenged by: D-
- 2010: Estimate based on reported administrative data. Estimate challenged by: D-
- 2009: Estimate based on reported administrative data. Immunization Coverage Survey in the Union of Comoros (October 2010) results ignored by working group. Survey supports reported data for other antigens. Estimate challenged by: D-

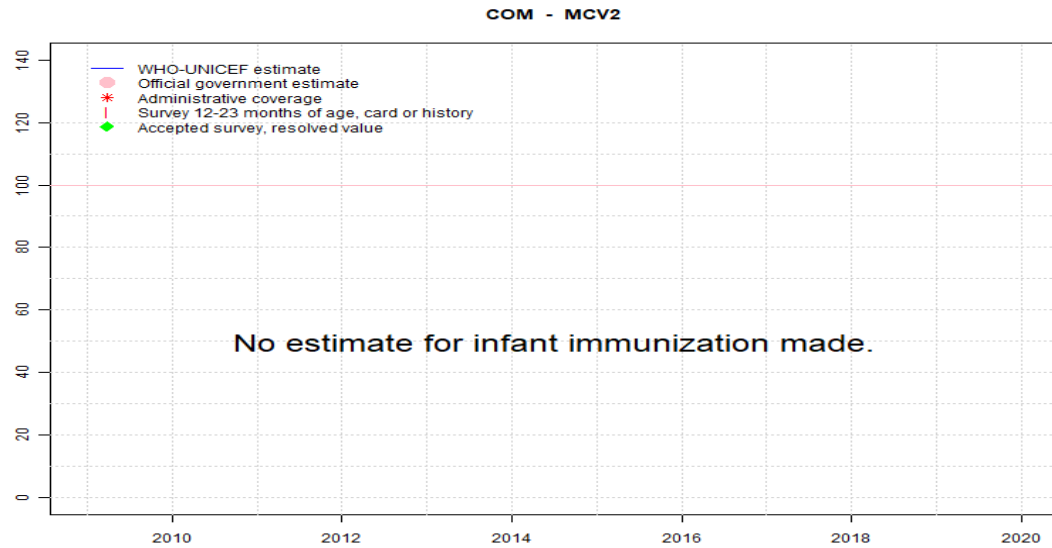
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	79	72	79	85	85	86	90	90	90	90	90	89
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	87	85	82	80	81	90	90	90	90	90
Administrative	79	72	79	85	82	80	81	77	75	74	76	75
Survey	67	NA	75	77	NA	NA	90	NA	NA	NA	NA	NA

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: 2020 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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Comoros - MCV2



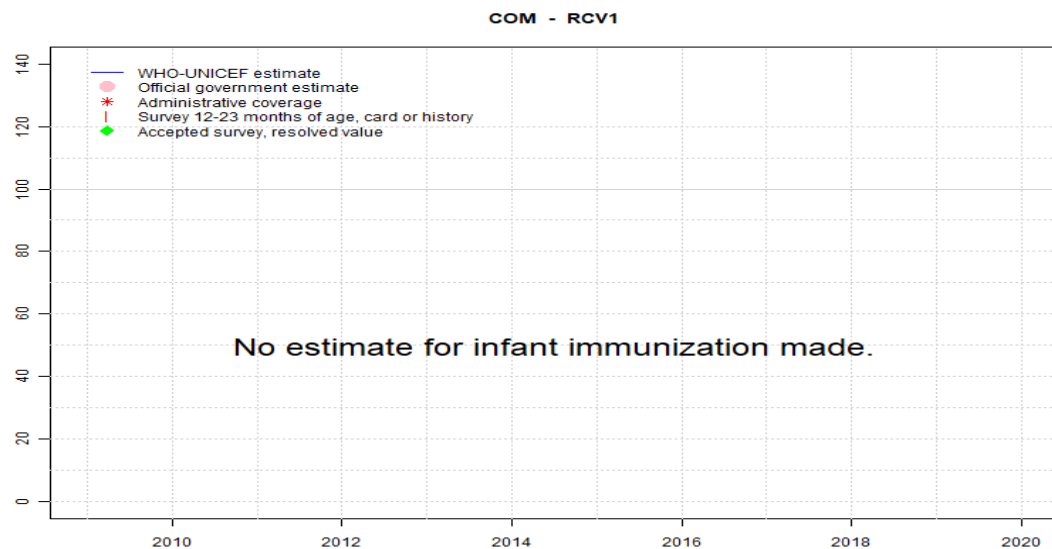
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2020 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.

Comoros - RCV1



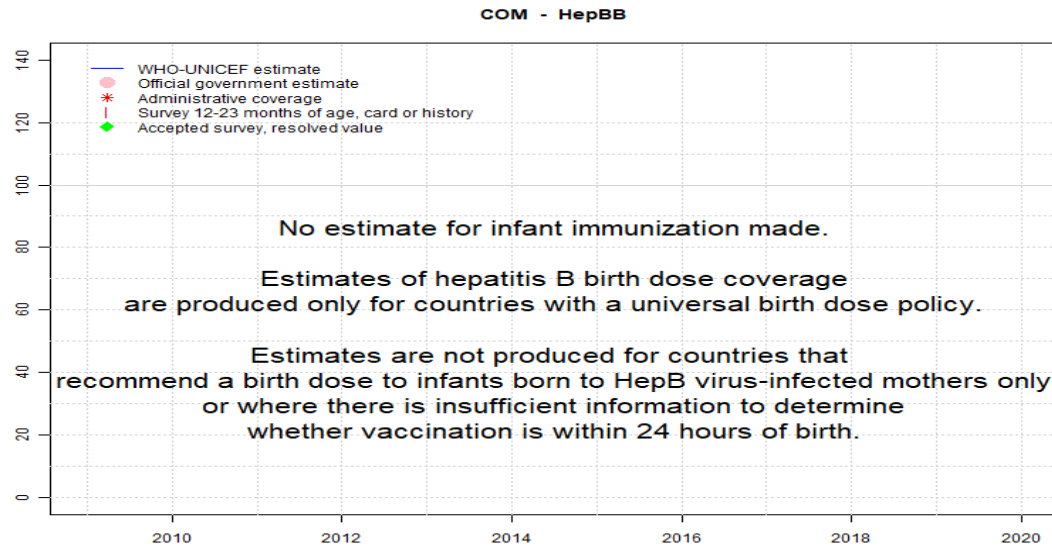
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2020 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.

Comoros - HepBB



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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

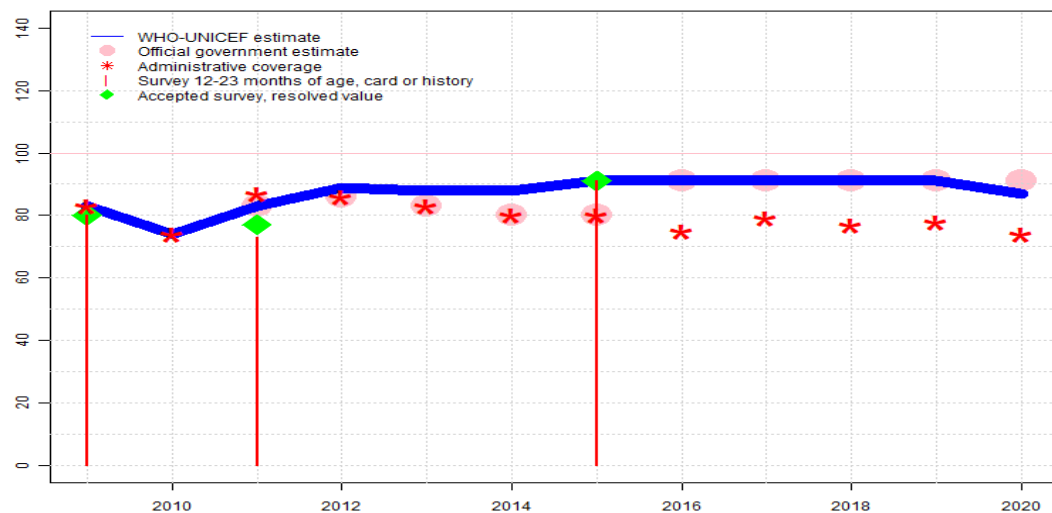
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2020 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.

Comoros - HepB3

COM - HepB3



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	83	74	83	89	88	88	91	91	91	91	91	87
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	83	86	83	80	80	91	91	91	91	91
Administrative	83	74	87	86	83	80	80	75	79	77	78	74
Survey	80	NA	73	NA	NA	NA	91	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: 2020 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:

2020: Estimate exceptionally based on the difference between administrative coverage 2019 to 2020 applied to the 2019 WUENIC estimate. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports three month vaccine stock-out at national level. Estimate challenged by: D-R-

2019: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2018: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 91 percent based on 1 survey(s). Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 and 2015 levels. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 and 2015 levels. Estimate challenged by: D-R-S-

2012: Reported data calibrated to 2011 and 2015 levels. Estimate challenged by: D-R-S-

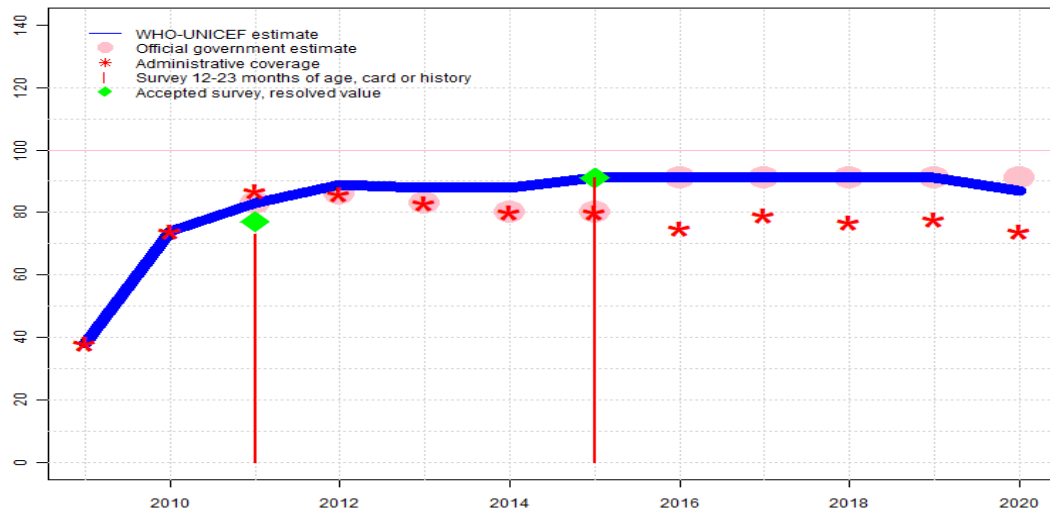
2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 77 percent based on 1 survey(s). Comoros Demographic and Health and Multiple Indicator Survey 2012 card or history results of 73 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 82 percent, 1st dose card only coverage of 69 percent and 3rd dose card only coverage of 65 percent. Estimate challenged by: D-

2010: Estimate based on reported administrative data. Estimate challenged by: D-

2009: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). Vaccine presentation changed to DTP-HepB-Hib. Estimate challenged by: D-

Comoros - Hib3

COM - Hib3



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	38	74	83	89	88	88	91	91	91	91	91	87
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	83	86	83	80	80	91	91	91	91	91
Administrative	38	74	87	86	83	80	80	75	79	77	78	74
Survey	NA	NA	73	NA	NA	NA	91	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: 2020 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:

2020: Estimate exceptionally based on the difference between administrative coverage 2019 to 2020 applied to the 2019 WUENIC estimate. Programme notes that reported official coverage is informed by results from a 2016 coverage survey. WHO and UNICEF recommend an assessment of the administrative data. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports three month vaccine stock-out at national level. Estimate challenged by: D-R-

2019: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2018: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2017: Estimate based on coverage reported by national government. Estimate challenged by: D-
 2016: . Reported official coverage levels are based on survey results. Estimate challenged by: D-
 2015: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 91 percent based on 1 survey(s). Estimate challenged by: D-R-

2014: Reported data calibrated to 2011 and 2015 levels. Estimate challenged by: D-R-

2013: Reported data calibrated to 2011 and 2015 levels. Estimate challenged by: D-R-S-

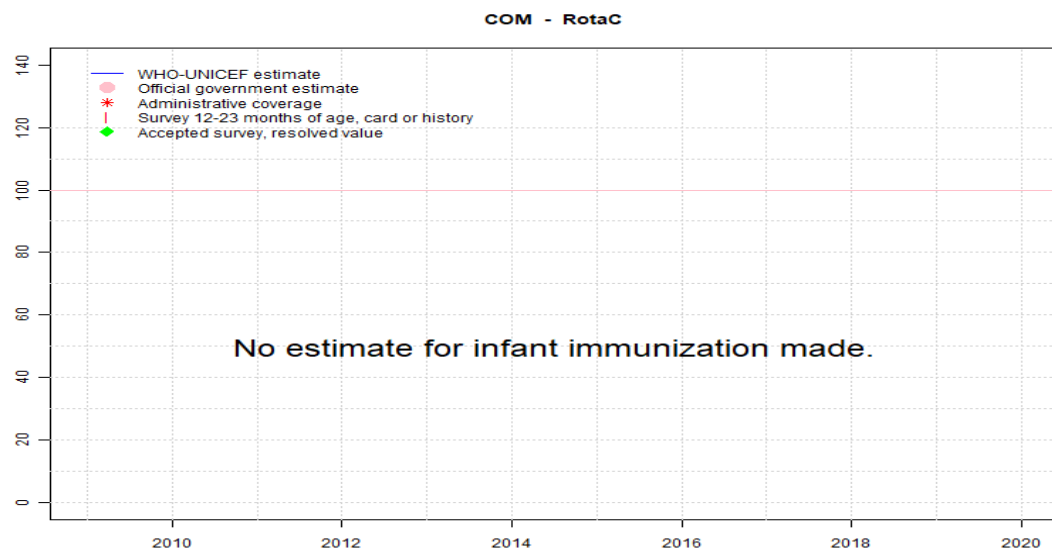
2012: Reported data calibrated to 2011 and 2015 levels. Estimate challenged by: D-R-S-

2011: Estimate based on coverage reported by national government supported by survey. Survey evidence of 77 percent based on 1 survey(s). Comoros Demographic and Health and Multiple Indicator Survey 2012 card or history results of 73 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 82 percent, 1st dose card only coverage of 69 percent and 3rd dose card only coverage of 65 percent. Estimate challenged by: D-

2010: Estimate based on reported data. Estimate challenged by: D-

2009: Estimate based on reported data. Hib vaccine introduced in 2009. Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: S-

Comoros - RotaC

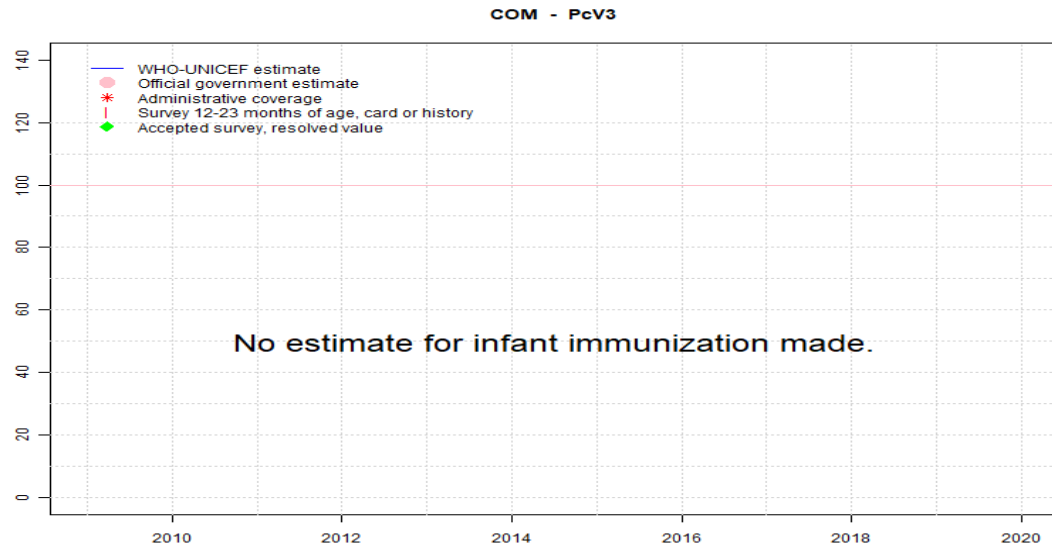


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2020 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.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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: 2020 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.

Comoros - survey details

2015 Enquete de Couverture Vaccinale Post Campagne de la Rougeole et de la Vaccination de Routine en Union des Comores 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	93.7	12-23 m	669	80
DTP1	Card or History	96.1	12-23 m	669	80
DTP3	Card or History	91	12-23 m	669	80
HepB1	Card or History	96.1	12-23 m	669	80
HepB3	Card or History	91	12-23 m	669	80
Hib1	Card or History	96.1	12-23 m	669	80
Hib3	Card or History	91	12-23 m	669	80
MCV1	Card or History	90.1	12-23 m	669	80
Pol3	Card or History	91.6	12-23 m	669	80

2012 Enquête de la Couverture Vaccinale Post Campagne de Rougeole et de la Vaccination de Routine dans l'Union des Comores

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87.2	12-23 m	750	75
DTP1	Card or History	88.7	12-23 m	750	75
DTP3	Card or History	83.7	12-23 m	750	75
MCV1	Card or History	77.2	12-23 m	750	75
Pol1	Card or History	83.9	12-23 m	750	75
Pol3	Card or History	83.5	12-23 m	750	75

2011 Union des Comores Enquête Démographique et de Santé et à Indicateurs Multiples 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	84.6	12-23 m	660	73
BCG	Card	69.5	12-23 m	480	73
BCG	Card or History	85.4	12-23 m	660	73
BCG	History	15.9	12-23 m	180	73
DTP1	C or H <12 months	80.6	12-23 m	660	73
DTP1	Card	69.1	12-23 m	480	73

DTP1	Card or History	82.2	12-23 m	660	73
DTP1	History	13.1	12-23 m	180	73
DTP3	C or H <12 months	71.2	12-23 m	660	73
DTP3	Card	65.1	12-23 m	480	73
DTP3	Card or History	72.7	12-23 m	660	73
DTP3	History	7.6	12-23 m	180	73
HepB1	C or H <12 months	80.6	12-23 m	660	73
HepB1	Card	69.1	12-23 m	480	73
HepB1	Card or History	82.2	12-23 m	660	73
HepB1	History	13.1	12-23 m	180	73
HepB3	C or H <12 months	71.2	12-23 m	660	73
HepB3	Card	65.1	12-23 m	480	73
HepB3	Card or History	72.7	12-23 m	660	73
HepB3	History	7.6	12-23 m	180	73
Hib1	C or H <12 months	80.6	12-23 m	660	73
Hib1	Card	69.1	12-23 m	480	73
Hib1	Card or History	82.2	12-23 m	660	73
Hib1	History	13.1	12-23 m	180	73
Hib3	C or H <12 months	71.2	12-23 m	660	73
Hib3	Card	65.1	12-23 m	480	73
Hib3	Card or History	72.7	12-23 m	660	73
Hib3	History	7.6	12-23 m	180	73
MCV1	C or H <12 months	63.4	12-23 m	660	73
MCV1	Card	63	12-23 m	480	73
MCV1	Card or History	75.3	12-23 m	660	73
MCV1	History	12.2	12-23 m	180	73
Pol1	C or H <12 months	85.5	12-23 m	660	73
Pol1	Card	72.3	12-23 m	480	73
Pol1	Card or History	86.7	12-23 m	660	73
Pol1	History	14.4	12-23 m	180	73
Pol3	C or H <12 months	69.4	12-23 m	660	73
Pol3	Card	67.8	12-23 m	480	73
Pol3	Card or History	71	12-23 m	660	73
Pol3	History	3.2	12-23 m	180	73

2009 Enquête de couverture vaccinale en Union des Comores (Octobre 2010)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87	12-23 m	325	63

Comoros - survey details

DTP1	Card or History	84	12-23 m	325	63
DTP3	Card or History	80	12-23 m	325	63
HepB1	Card or History	84	12-23 m	325	63
HepB3	Card or History	80	12-23 m	325	63
MCV1	Card or History	67	12-23 m	325	63
Pol1	Card or History	82	12-23 m	325	63
Pol3	Card or History	80	12-23 m	325	63

HepB1	Card or History	92.2	12-23 m	217	77
HepB3	Card or History	82	12-23 m	217	77
MCV1	Card or History	70.5	12-23 m	217	77

1999 Comores, Enquête à Indicateurs Multiples (MICS 2000), 2001

2006 Enquête de couverture vaccinale en Union des Comores (Novembre 2007)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	94.9	12-23 m	217	77
DTP1	Card or History	92.2	12-23 m	217	77
DTP3	Card or History	82	12-23 m	217	77

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	79.1	12-23 m	956	71
DTP1	Card or History	73	12-23 m	956	71
DTP3	Card or History	70	12-23 m	956	71
MCV1	Card or History	72.9	12-23 m	956	71
Pol1	Card or History	74.6	12-23 m	956	71
Pol3	Card or History	70.4	12-23 m	956	71

Further information and estimates for previous years are available at:

<http://www.data.unicef.org/child-health/immunization>

<https://www.who.int/teams/immunization-vaccines-and-biologicals/immunization-analysis-and-insights/global-monitoring/data-statistics-and-graphics>