Papua New Guinea: WHO and UNICEF estimates of immunization coverage: 2021 revision

BCG — DTP1 — DTP3 — Pol3 — MCV1 — HepB3 — Hib3 — RotaC (No estimate for infant immunization made.) — PcV3

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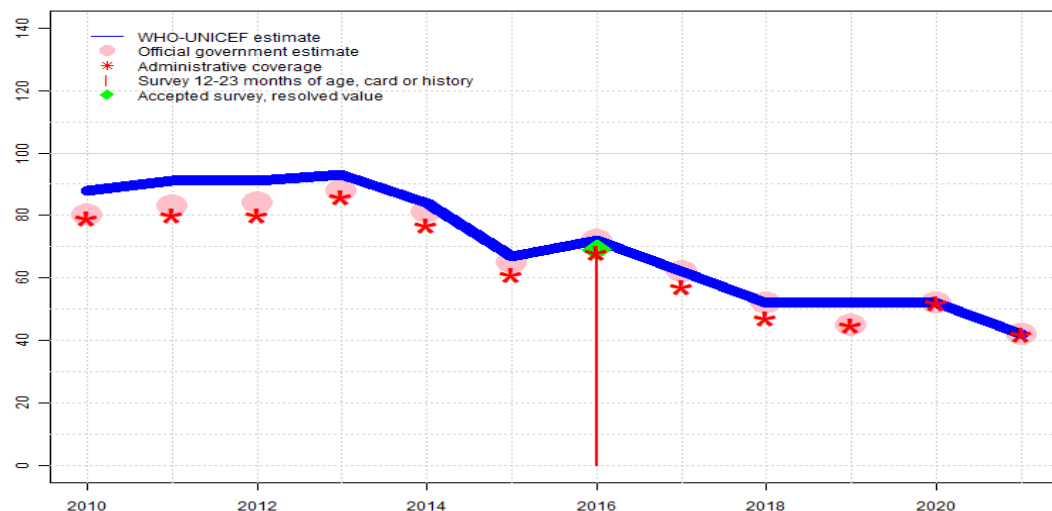
PcV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect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

Papua New Guinea - BCG

PNG - BCG

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	88	91	91	93	84	67	72	62	52	52	52	42
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	80	83	84	88	81	65	72	62	52	45	52	42
Administrative	79	80	80	86	77	61	68	57	47	45	52	42
Survey	NA	NA	NA	NA	NA	NA	69	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.
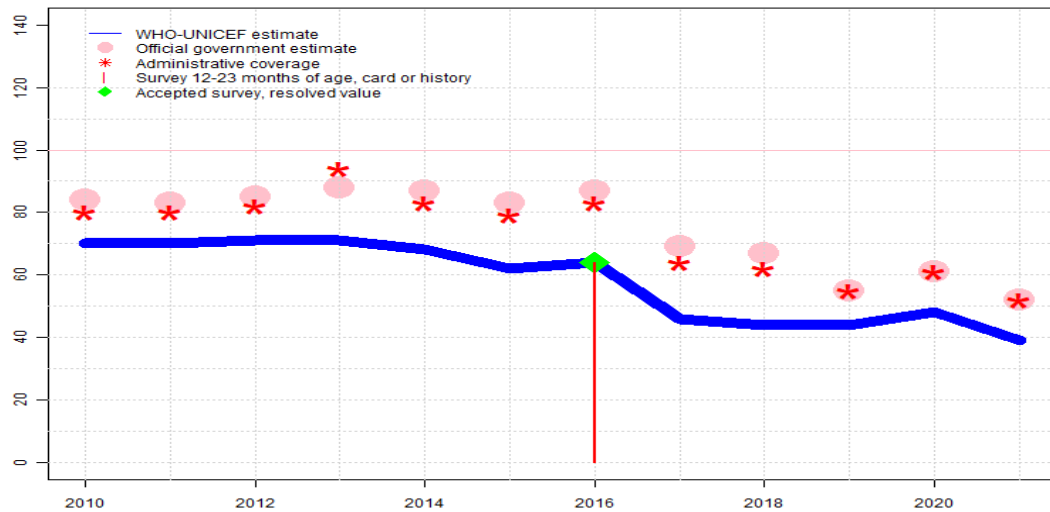
In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.

Description:

2021: Estimate based on coverage reported by national government. Estimate challenged by: D-

2020: Estimate based on coverage reported by national government. Estimate challenged by: D-

2019: Estimate based on interpolation between data reported by national government. Reported
data excluded. Observed decline in reported coverage for several antigens appears to
reflect unexplained seven percent increase in target population. Year to year population
growth was previously around three percent. GoC=Assigned by working group.
Consistency with other antigens.

2018: Estimate based on coverage reported by national government. Programme reports do not
include private sector providers. Programme notes administrative reporting complete-
ness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage
across the time series suggests challenges in routine monitoring system.

2017: Estimate based on coverage reported by national government. Programme reports that
persistent challenges contributed to the declines in coverage for 2017. Consistent decline
in reported coverage for almost all vaccines. GoC=Assigned by working group. See
comment in 2018.

2016: Estimate based on coverage reported by national government supported by survey. Sur-
vey evidence of 69 percent based on 1 survey(s). Reported data reflects three quarters
of expected district-level reports. Programme reports 3.5 months stock out at national
level. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2005 and 2016 levels. Programme reports a three month
vaccine stock-out at national level. GoC=Assigned by working group. See comment in
2018.

2014: Reported data calibrated to 2005 and 2016 levels. Target population increase of 13
percent compared to 2013. Programme reports two month stock-out at national level.
GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See
comment in 2018.

2012: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See
comment in 2018.

2011: Reported data calibrated to 2005 and 2016 levels. Administrative coverage is adjusted for
vaccinations provided in the private sector. Previous surveys have consistently indicated
higher coverage than administrative coverage. GoC=Assigned by working group. See
comment in 2018.

2010: Reported data calibrated to 2005 and 2016 levels. Public - private sector discrepancy
noted by WHO and UNICEF, however, adjustment inconsistently applied across anti-
gens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - DTP1

PNG - DTP1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

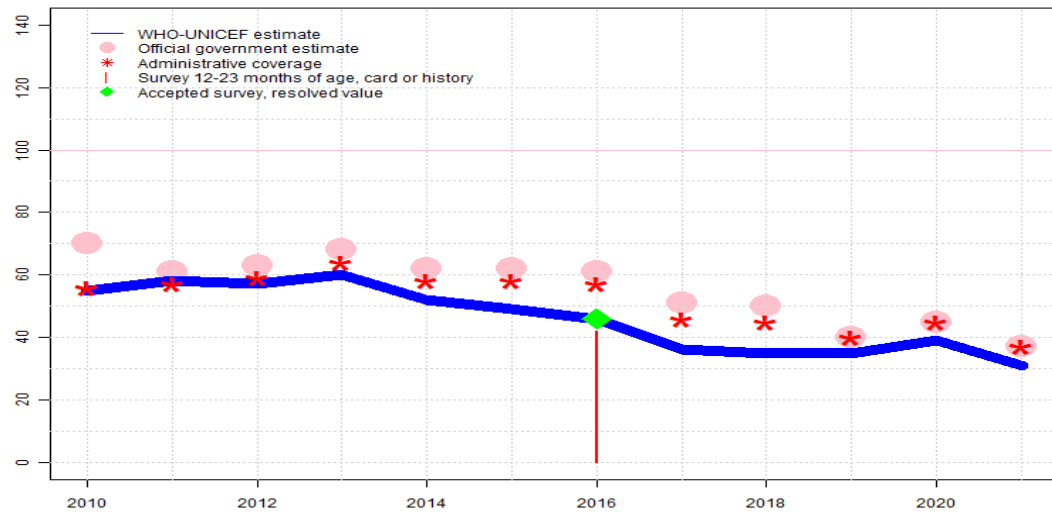|	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	70	70	71	71	68	62	64	46	44	44	48	39
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	84	83	85	88	87	83	87	69	67	55	61	52
Administrative	80	80	82	94	83	79	83	64	62	55	61	52
Survey	NA	NA	NA	NA	NA	NA	64	NA	NA	NA	NA	NA

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 reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020.
    Estimate challenged by: D-R-

2019: Based on previous year estimate. Reported data excluded. Observed decline in reported
    coverage for several antigens appears to reflect unexplained seven percent increase in
    target population. Year to year population growth was previously around three percent.
    Estimate challenged by: D-R-

2018: Reported data calibrated to 2016 levels. Programme reports do not include private sec-
    tor providers. Programme notes administrative reporting completeness is 78 percent.
    GoC=Assigned by working group. Fluctuation in reported coverage across the time
    series suggests challenges in routine monitoring system.

2017: Reported data calibrated to 2016 levels. Programme reports that persistent challenges
    contributed to the declines in coverage for 2017. Consistent decline in reported coverage
    for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Survey evidence does not support reported data. Estimate based on survey results. Sur-
    vey evidence of 64 percent based on 1 survey(s). Reported data reflects three quarters of
    expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See
    comment in 2018.

2014: Reported data calibrated to 2005 and 2016 levels. Target population increase of 13 percent
    compared to 2013. GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See
    comment in 2018.

2012: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See
    comment in 2018.

2011: Reported data calibrated to 2005 and 2016 levels. Administrative coverage is adjusted for
    vaccinations provided in the private sector. Previous surveys have consistently indicated
    higher coverage than administrative coverage. GoC=Assigned by working group. See
    comment in 2018.

2010: Reported data calibrated to 2005 and 2016 levels. Public - private sector discrepancy
    noted by WHO and UNICEF, however, adjustment inconsistently applied across anti-
    gens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - DTP3

PNG - DTP3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	55	58	57	60	52	49	46	36	35	35	39	31
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	70	61	63	68	62	62	61	51	50	40	45	37
Administrative	56	57	59	64	58	58	57	46	45	40	45	37
Survey	NA	NA	NA	NA	NA	NA	42	NA	NA	NA	NA	NA

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

●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator
from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at
least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk
of being wrong.

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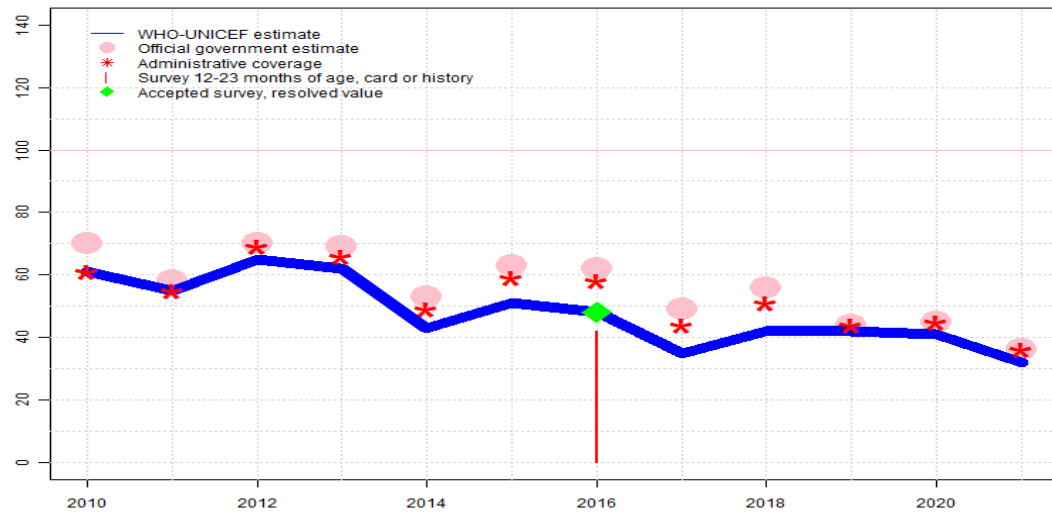
In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.

Description:

2021: Estimate reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020. Estimate challenged by: D-R-

2019: Based on previous year estimate. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2016 levels. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Reported data calibrated to 2016 levels. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 46 percent based on 1 survey(s). Papua New Guinea Demographic and Health Survey 2016-2018 card or history results of 42 percent modifed for recall bias to 46 percent based on 1st dose card or history coverage of 64 percent, 1st dose card only coverage of 50 percent and 3rd dose card only coverage of 36 percent. Reported data reflects three quarters of expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2014: Reported data calibrated to 2005 and 2016 levels. Target population increase of 13 percent compared to 2013. GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2012: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2011: Reported data calibrated to 2005 and 2016 levels. Administrative coverage is adjusted for vaccinations provided in the private sector. Previous surveys have consistently indicated higher coverage than administrative coverage. GoC=Assigned by working group. See comment in 2018.

2010: Reported data calibrated to 2005 and 2016 levels. Public - private sector discrepancy noted by WHO and UNICEF, however, adjustment inconsistently applied across antigens. GoC=Assigned by working group. See comment in 2018.

PNG - Pol3

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	61	55	65	62	43	51	48	35	42	42	41	32
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	70	58	70	69	53	63	62	49	56	44	45	36
Administrative	61	55	69	66	49	59	58	44	51	44	45	36
Survey	NA	NA	NA	NA	NA	NA	42	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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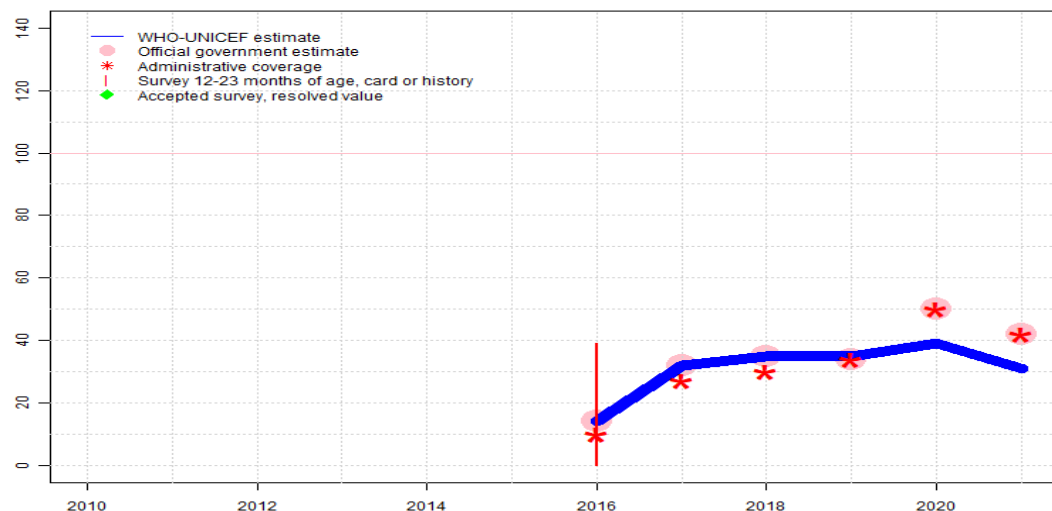
Description:

2021: Estimate reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020. Programme reports half month vaccine sctockout at national and district level. Estimate challenged by: D-R-

2019: Based on previous year estimate. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2016 levels. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Reported data calibrated to 2016 levels. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 48 percent based on 1 survey(s). Papua New Guinea Demographic and Health Survey 2016-2018 card or history results of 42 percent modifed for recall bias to 48 percent based on 1st dose card or history coverage of 69 percent, 1st dose card only coverage of 52 percent and 3rd dose card only coverage of 36 percent. Reported data reflects three quarters of expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2014: Reported data calibrated to 2005 and 2016 levels. Target population increase of 13 percent compared to 2013. Programme reports two month stock-out at national level. GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2005 and 2016 levels. Programme reports three months stock-out at national level. GoC=Assigned by working group. See comment in 2018.

2012: Reported data calibrated to 2005 and 2016 levels. Rise in coverage is attributable to recovery from vaccine shortage. GoC=Assigned by working group. See comment in 2018.

2011: Reported data calibrated to 2005 and 2016 levels. Administrative coverage is adjusted for vaccinations provided in the private sector. Previous surveys have consistently indicated higher coverage than administrative coverage. GoC=Assigned by working group. See comment in 2018.

2010: Reported data calibrated to 2005 and 2016 levels. Public - private sector discrepancy noted by WHO and UNICEF, however, adjustment inconsistently applied across antigens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - IPV1

PNG - IPV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	NA	14	32	35	35	39	31
Estimate GoC	NA	NA	NA	NA	NA	NA	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	14	32	35	34	50	42
Administrative	NA	NA	NA	NA	NA	NA	10	27	30	34	50	42
Survey	NA	NA	NA	NA	NA	NA	39	NA	NA	NA	NA	NA

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

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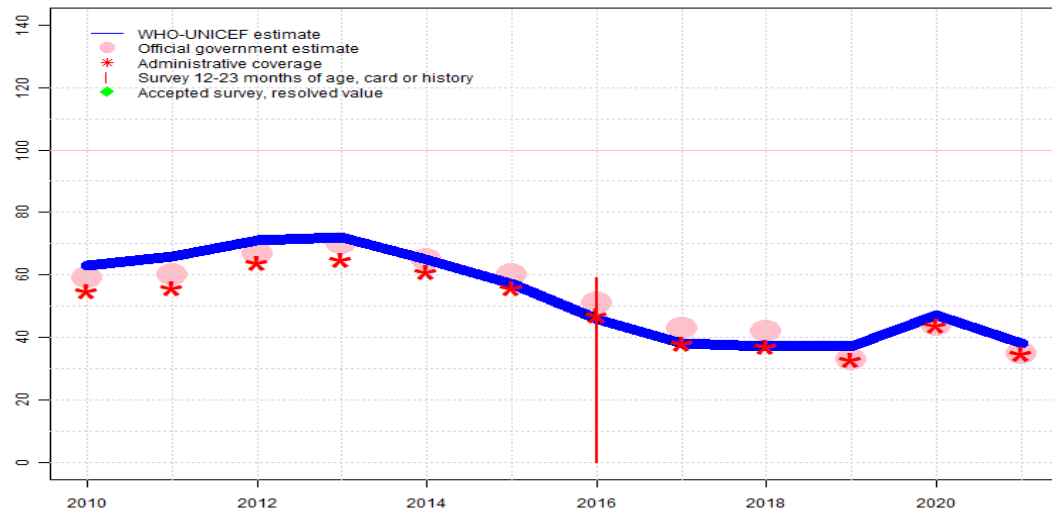
Description:

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 reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Based on estimate for DTP3 coverage for consitency but it may underestimate IPV1 coverage given that more IPV than DTP3 doses reported. Estimate challenged by: D-R-

2019: Based on estimate for DTP3 coverage. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. Actual IPV1 coverage is likely lower than that estimated based on reported doses administered vis-a-vis the third dose of DTP. GoC=Assigned by working group. Consistency with other antigens recommended at the same age.

2018: Estimate based on coverage reported by national government. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. Estimate based on reported data during period of introduction. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Estimate based on coverage reported by national government. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Estimate based on reported data during period of introduction. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Estimate based on coverage reported by national government. Papua New Guinea Demographic and Health Survey 2016-2018 results ignored by working group. Survey results ignored during period of introduction. Reported data reflects three quarters of expected district-level reports. Inactivated polio vaccine in 2015, reporting starts in 2016. Unclear whether doses given as part of an intensification of routine vaccination are included in the reported coverage. Programme reports two months stock out of IPV at national level. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - MCV1

PNG - MCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	63	66	71	72	65	57	46	38	37	37	47	38
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	59	60	67	70	65	60	51	43	42	33	44	35
Administrative	55	56	64	65	61	56	47	38	37	33	44	35
Survey	NA	NA	NA	NA	NA	NA	59	NA	NA	NA	NA	NA

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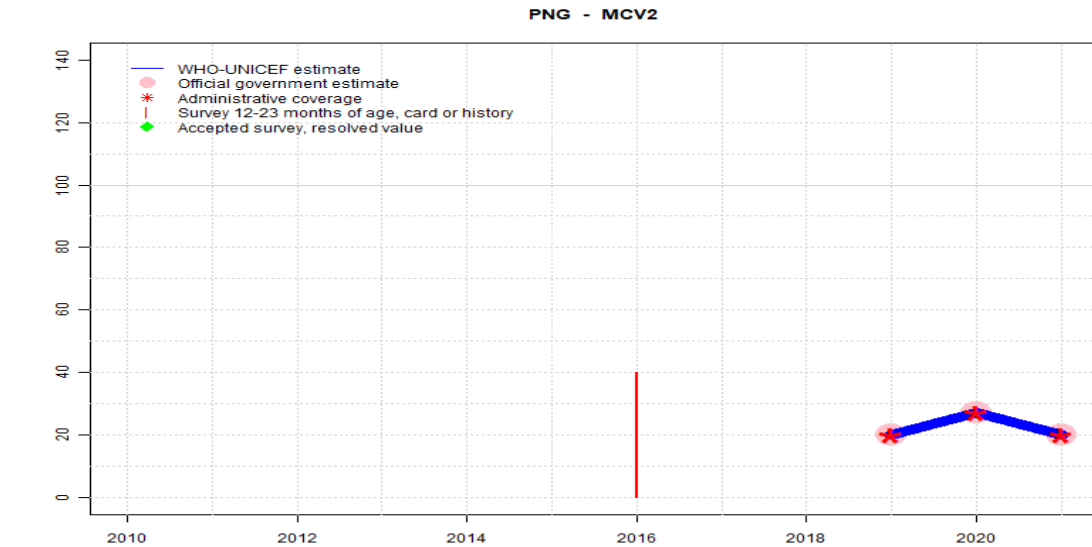
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In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.
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Description:

2021: Estimate reflects decline in reported coverage from 2020. Estimate challenged by: R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020. Estimate challenged by: R-

2019: Based on previous year estimate. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. Estimate challenged by: R-

2018: Reported data calibrated to 2016 levels. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Reported data calibrated to 2016 levels. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Estimate of 46 percent assigned by working group. Estimate is based on estimated DTP3 level. Reported administrative data suggests MCV1 coverage is lower than that for DTP3. Papua New Guinea Demographic and Health Survey 2016-2018 results ignored by working group. Survey results may included doses delivered through campaign. Reported data reflects three quarters of expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2014: Reported data calibrated to 2005 and 2016 levels. Target population increase of 13 percent compared to 2013. Programme reports two month stock-out at national level. GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2012: Reported data calibrated to 2005 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2011: Reported data calibrated to 2005 and 2016 levels. Administrative coverage is adjusted for vaccinations provided in the private sector. Previous surveys have consistently indicated higher coverage than administrative coverage. GoC=Assigned by working group. See comment in 2018.

2010: Reported data calibrated to 2005 and 2016 levels. Public - private sector discrepancy noted by WHO and UNICEF, however, adjustment inconsistently applied across antigens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - MCV2

PNG - MCV2

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	27	20
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	27	20
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	27	20
Survey	NA	NA	NA	NA	NA	NA	40	NA	NA	NA	NA	NA

Description:

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

2021: Estimate based on coverage reported by national government. GoC=Assigned by working group. Consistency with GoC for other vaccine-doses.

2020: Estimate based on coverage reported by national government. GoC=Assigned by working group. Consistency with GoC for other vaccine-doses.

2019: Estimate based on coverage reported by national government. Estimate is based on reported data on an exceptional basis relative to other antigens. GoC=Assigned by working group. Consistency with other antigens recommended at the same age.
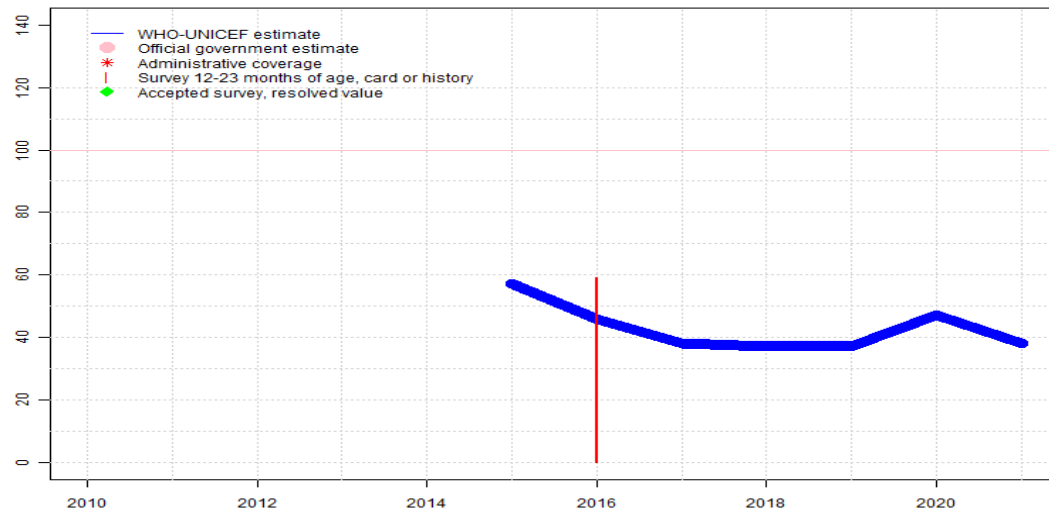
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.

Papua New Guinea - RCV1

PNG - RCV1

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	57	46	38	37	37	47	38
Estimate GoC	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	59	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
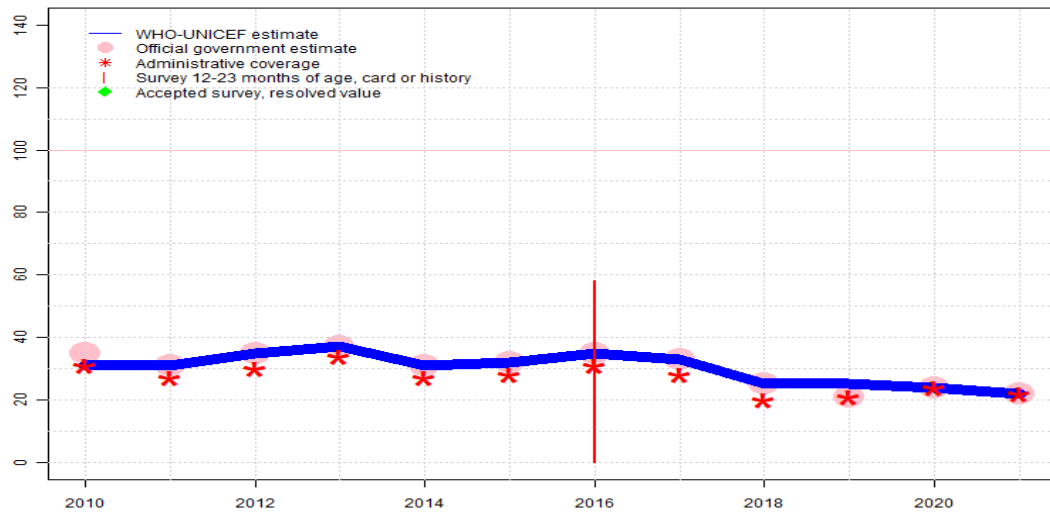of the objective for which they are being used.

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 reflects decline in reported coverage from 2020. Estimate challenged by: R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020.
Estimate of 47 percent changed from previous revision value of 37 percent. Estimate
challenged by: R-

2019: Based on previous year estimate. Estimate challenged by: R-

2018: Estimate based on estimated MCV1. Programme reports do not include private sec-
tor providers. Programme notes administrative reporting completeness is 78 percent.
GoC=Assigned by working group. Fluctuation in reported coverage across the time
series suggests challenges in routine monitoring system.

2017: Estimate based on estimated MCV1. Programme reports that persistent challenges con-
tributed to the declines in coverage for 2017. Consistent decline in reported coverage for
almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Estimate based on estimated MCV1. Papua New Guinea Demographic and Health Survey
2016-2018 results ignored by working group. Survey results may included doses deliv-
ered through campaign. Reported data reflects three quarters of expected district-level
reports. GoC=Assigned by working group. See comment in 2018.

2015: Estimate based on estimated MCV1. GoC=Assigned by working group. See comment in
2018.

Papua New Guinea - HepBB

PNG - HepBB

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	31	31	35	37	31	32	35	33	25	25	24	22
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	35	31	35	37	31	32	35	33	25	21	24	22
Administrative	31	27	30	34	27	28	31	28	20	21	24	22
Survey	NA	NA	NA	NA	NA	NA	58	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.
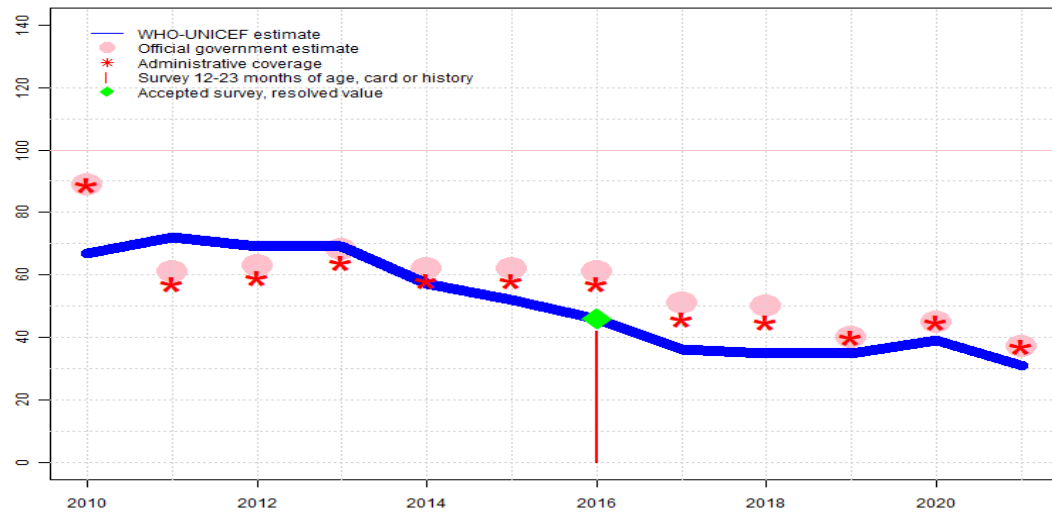
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In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.
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Description:

2021: Estimate based on coverage reported by national government. GoC=Assigned by working group. Consistency with GoC for other vaccine-doses.

2020: Estimate based on coverage reported by national government. GoC=Assigned by working group. Consistency with GoC for other vaccine-doses.

2019: Estimate based on interpolation between reported values. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. GoC=Assigned by working group. Consistency with other antigens.

2018: Estimate based on coverage reported by national government. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Estimate based on coverage reported by national government. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Estimate based on coverage reported by national government. Papua New Guinea Demographic and Health Survey 2016-2018 results ignored by working group. Survey results ignored due to insufficient information regarding whether HepB doses were received within 24 hours of birth. Reported data reflects three quarters of expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Estimate based on coverage reported by national government. GoC=Assigned by working group. See comment in 2018.

2014: Estimate based on coverage reported by national government. Target population increase of 13 percent compared to 2013. GoC=Assigned by working group. See comment in 2018.

2013: Estimate based on coverage reported by national government. Programme reports two months stock out at national level. GoC=Assigned by working group. See comment in 2018.

2012: Estimate based on coverage reported by national government. GoC=Assigned by working group. See comment in 2018.

2011: Estimate based on coverage reported by national government. Administrative coverage is adjusted for vaccinations provided in the private sector. Previous surveys have consistently indicated higher coverage than administrative coverage. GoC=Assigned by working group. See comment in 2018.

2010: Estimate based on reported administrative estimate. Public - private sector discrepancy noted by WHO and UNICEF, however, adjustment inconsistently applied across antigens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - HepB3

PNG - HepB3

Legend:
— WHO-UNICEF estimate
○ Official government estimate
✳ Administrative coverage
| Survey 12-23 months of age, card or history
◆ Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	67	72	69	69	57	52	46	36	35	35	39	31
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	89	61	63	68	62	62	61	51	50	40	45	37
Administrative	89	57	59	64	58	58	57	46	45	40	45	37
Survey	NA	NA	NA	NA	NA	NA	42	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.
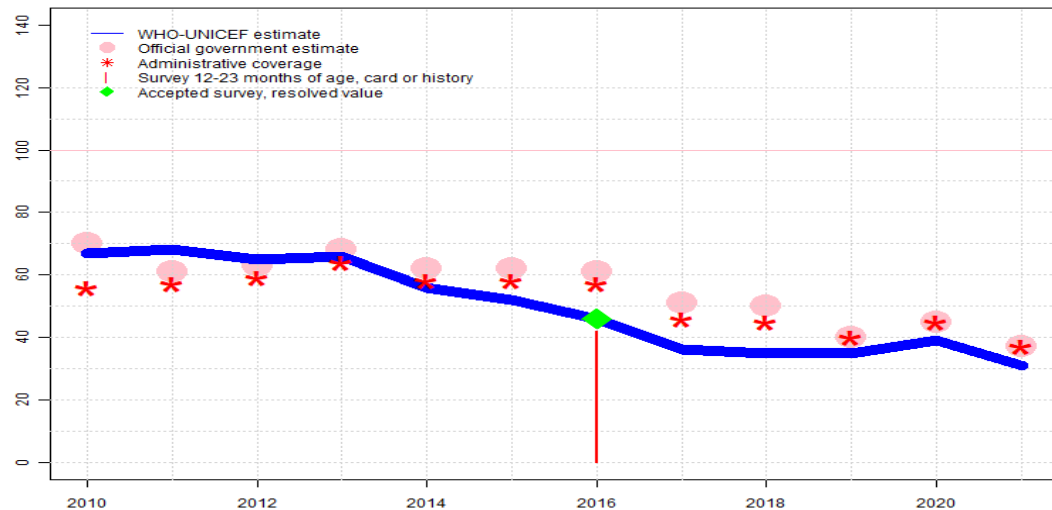
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In all cases these estimates should be used with caution and should be assessed in light
of the objective for which they are being used.
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Description:

2021: Estimate reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020. Estimate challenged by: D-R-

2019: Based on previous year estimate. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2016 levels. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Reported data calibrated to 2016 levels. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 46 percent based on 1 survey(s). Papua New Guinea Demographic and Health Survey 2016-2018 card or history results of 42 percent modifed for recall bias to 46 percent based on 1st dose card or history coverage of 64 percent, 1st dose card only coverage of 50 percent and 3rd dose card only coverage of 36 percent. Reported data reflects three quarters of expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2011 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2014: Reported data calibrated to 2011 and 2016 levels. Target population increase of 13 percent compared to 2013. GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2011 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2012: Reported data calibrated to 2011 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2011: Estimate of 72 percent assigned by working group. Estimate based on estimated DTP3 coverage. Administrative coverage is adjusted for vaccinations provided in the private sector. Previous surveys have consistently indicated higher coverage than administrative coverage. GoC=Assigned by working group. See comment in 2018.

2010: Estimate of 67 percent assigned by working group. Estimate based on estimated DTP3 coverage. Reported data excluded. .Reported data excluded due to an increase from 62 percent to 89 percent with decrease 61 percent. Public - private sector discrepancy noted by WHO and UNICEF, however, adjustment inconsistently applied across antigens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - Hib3

PNG - Hib3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	67	68	65	66	56	52	46	36	35	35	39	31
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	70	61	63	68	62	62	61	51	50	40	45	37
Administrative	56	57	59	64	58	58	57	46	45	40	45	37
Survey	NA	NA	NA	NA	NA	NA	42	NA	NA	NA	NA	NA

```
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information
that are of varying, and, in some instances, unknown quality.  Beginning with the 2011 revision we describe
the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon
which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence
intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around
the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is
not a judgment of the quality of data reported by national authorities.
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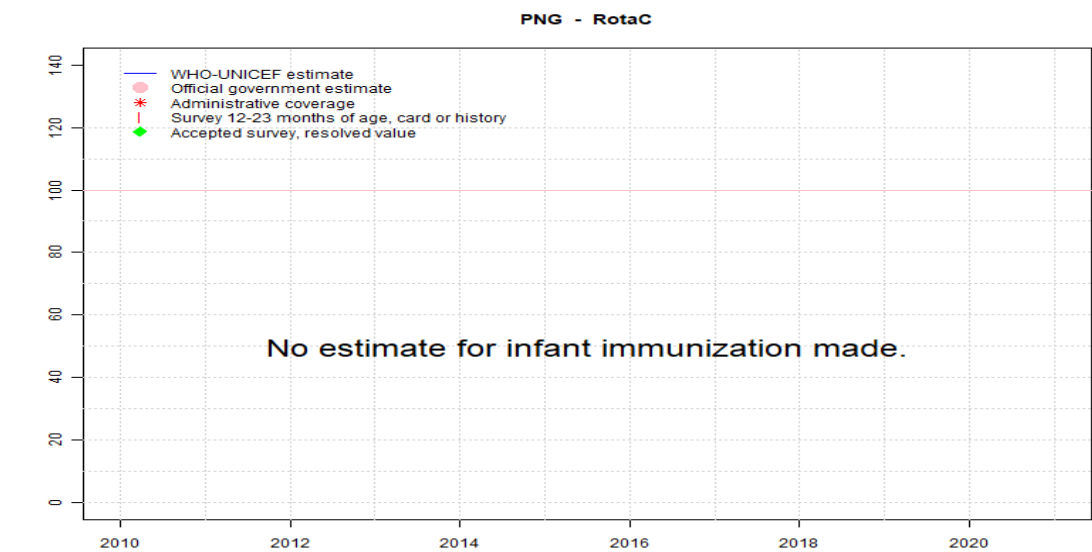
●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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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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 reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020. Estimate challenged by: D-R-

2019: Based on previous year estimate. Reported data excluded. Observed decline in reported coverage for several antigens appears to reflect unexplained seven percent increase in target population. Year to year population growth was previously around three percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2016 levels. Programme reports do not include private sector providers. Programme notes administrative reporting completeness is 78 percent. GoC=Assigned by working group. Fluctuation in reported coverage across the time series suggests challenges in routine monitoring system.

2017: Reported data calibrated to 2016 levels. Programme reports that persistent challenges contributed to the declines in coverage for 2017. Consistent decline in reported coverage for almost all vaccines. GoC=Assigned by working group. See comment in 2018.

2016: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 46 percent based on 1 survey(s). Papua New Guinea Demographic and Health Survey 2016-2018 card or history results of 42 percent modifed for recall bias to 46 percent based on 1st dose card or history coverage of 64 percent, 1st dose card only coverage of 50 percent and 3rd dose card only coverage of 36 percent. Reported data reflects three quarters of expected district-level reports. GoC=Assigned by working group. See comment in 2018.

2015: Reported data calibrated to 2010 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2014: Reported data calibrated to 2010 and 2016 levels. Target population increase of 13 percent compared to 2013. GoC=Assigned by working group. See comment in 2018.

2013: Reported data calibrated to 2010 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2012: Reported data calibrated to 2010 and 2016 levels. GoC=Assigned by working group. See comment in 2018.

2011: Reported data calibrated to 2010 and 2016 levels. Administrative coverage is adjusted for vaccinations provided in the private sector. Previous surveys have consistently indicated higher coverage than administrative coverage. GoC=Assigned by working group. See comment in 2018.

2010: Estimate of 67 percent assigned by working group. Estimate based on estimated DTP3. Vaccine presentation is DTP-HepB-Hib. Public - private sector discrepancy noted by WHO and UNICEF, however, adjustment inconsistently applied across antigens. GoC=Assigned by working group. See comment in 2018.

Papua New Guinea - 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.

PNG - PcV3

Legend:
- WHO-UNICEF estimate
- Official government estimate
- Administrative coverage
- Survey 12-23 months of age, card or history
- Accepted survey, resolved value

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Estimate	NA	NA	NA	NA	NA	20	20	36	35	35	39	32
Estimate GoC	NA	NA	NA	NA	NA	●	●	●	●	●	●	●
Official	NA	NA	NA	NA	NA	20	20	44	43	38	44	37
Administrative	NA	NA	NA	NA	NA	16	16	39	38	38	44	37
Survey	NA	NA	NA	NA	NA	NA	35	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
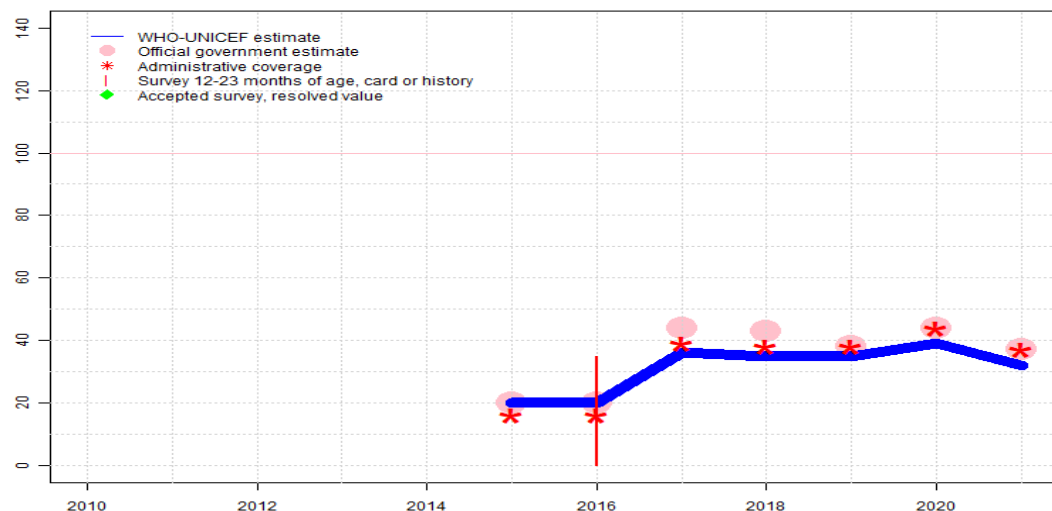not a judgment of the quality of data reported by national authorities.

●●● 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 reflects decline in reported coverage from 2020. Estimate challenged by: D-R-

2020: Estimate informed by relative change in doses administered from 2018 levels to 2020.
    Estimate challenged by: D-R-

2019: Based on estimate for DTP3 for consistency. Reported data excluded. Observed decline
    in reported coverage for several antigens appears to reflect unexplained seven percent
    increase in target population. Year to year population growth was previously around
    three percent. Estimate challenged by: R-

2018: Estimate of 35 percent assigned by working group. Estimate is based on estimated DTP3.
    Programme reports do not include private sector providers. Programme notes adminis-
    trative reporting completeness is 78 percent. Estimate based on reported data during
    period of introduction. GoC=Assigned by working group. Fluctuation in reported cov-
    erage across the time series suggests challenges in routine monitoring system.

2017: Estimate of 36 percent assigned by working group. Estimate is based on estimated DTP3.
    Programme reports that persistent challenges contributed to the declines in coverage for
    2017. Estimate based on reported data during period of introduction. Consistent de-
    cline in reported coverage for almost all vaccines. GoC=Assigned by working group. See
    comment in 2018.

2016: Estimate is based on reported data. Papua New Guinea Demographic and Health Sur-
    vey 2016-2018 results ignored by working group. Survey results ignored during period
    of introduction.Papua New Guinea Demographic and Health Survey 2016-2018 card or
    history results of 35 percent modifed for recall bias to 39 percent based on 1st dose card
    or history coverage of 58 percent, 1st dose card only coverage of 46 percent and 3rd
    dose card only coverage of 31 percent. Reported data reflects three quarters of expected
    district-level reports. Estimate based on reported data during period of introduction.
    GoC=Assigned by working group. See comment in 2018.

2015: Estimate based on reported data. Pneumococcal conjugate vaccine introduced in 2013.
    Reporting began in 2015. GoC=Assigned by working group. See comment in 2018.

2016 Papua New Guinea Demographic and Health Survey 2016-2018

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	67.1	12-23 m	1763	61
BCG	Card	52.9	12-23 m	1069	61
BCG	Card or History	69.4	12-23 m	1763	61
BCG	History	16.5	12-23 m	695	61
DTP1	C or H <12 months	60.9	12-23 m	1763	61
DTP1	Card	50	12-23 m	1069	61
DTP1	Card or History	63.9	12-23 m	1763	61
DTP1	History	13.9	12-23 m	695	61
DTP3	C or H <12 months	35	12-23 m	1763	61
DTP3	Card	35.9	12-23 m	1069	61
DTP3	Card or History	41.7	12-23 m	1763	61
DTP3	History	5.8	12-23 m	695	61
HepB1	C or H <12 months	60.9	12-23 m	1763	61
HepB1	Card	50	12-23 m	1069	61
HepB1	Card or History	63.9	12-23 m	1763	61
HepB1	History	13.9	12-23 m	695	61
HepB3	C or H <12 months	35	12-23 m	1763	61
HepB3	Card	35.9	12-23 m	1069	61
HepB3	Card or History	41.7	12-23 m	1763	61
HepB3	History	5.8	12-23 m	695	61
HepBB	C or H <12 months	55.5	12-23 m	1763	61
HepBB	Card	43.3	12-23 m	1069	61
HepBB	Card or History	57.5	12-23 m	1763	61
HepBB	History	14.2	12-23 m	695	61
Hib1	C or H <12 months	60.9	12-23 m	1763	61
Hib1	Card	50	12-23 m	1069	61
Hib1	Card or History	63.9	12-23 m	1763	61
Hib1	History	13.9	12-23 m	695	61
Hib3	C or H <12 months	35	12-23 m	1763	61
Hib3	Card	35.9	12-23 m	1069	61
Hib3	Card or History	41.7	12-23 m	1763	61
Hib3	History	5.8	12-23 m	695	61
IPV1	C or H <12 months	33.4	12-23 m	1763	61
IPV1	Card	26.4	12-23 m	1069	61
IPV1	Card or History	39.1	12-23 m	1763	61
IPV1	History	12.7	12-23 m	695	61
MCV1	C or H <12 months	50.1	12-23 m	1763	61
MCV1	Card	45.5	12-23 m	1069	61
MCV1	Card or History	58.7	12-23 m	1763	61
MCV1	History	13.2	12-23 m	695	61
MCV2	C or H <12 months	23.5	12-23 m	1763	61
MCV2	Card	32.1	12-23 m	1069	61
MCV2	Card or History	40.1	12-23 m	1763	61
MCV2	History	8	12-23 m	695	61
PCV1	C or H <12 months	54.2	12-23 m	1763	61
PCV1	Card	46.3	12-23 m	1069	61
PCV1	Card or History	58.3	12-23 m	1763	61
PCV1	History	12	12-23 m	695	61
PCV3	C or H <12 months	28.7	12-23 m	1763	61
PCV3	Card	31.3	12-23 m	1069	61
PCV3	Card or History	35.4	12-23 m	1763	61
PCV3	History	4	12-23 m	695	61
Pol1	C or H <12 months	66	12-23 m	1763	61
Pol1	Card	52.1	12-23 m	1069	61
Pol1	Card or History	69	12-23 m	1763	61
Pol1	History	16.9	12-23 m	695	61
Pol3	C or H <12 months	35.9	12-23 m	1763	61
Pol3	Card	36.2	12-23 m	1069	61
Pol3	Card or History	42.2	12-23 m	1763	61
Pol3	History	6	12-23 m	695	61

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Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	66.7	12-23 m	883	70
BCG	Card or History	89.6	12-23 m	1254	70
DTP1	Card	66.5	12-23 m	883	70
DTP1	Card or History	87.9	12-23 m	1254	70
DTP3	Card	53.7	12-23 m	883	70
DTP3	Card or History	66.8	12-23 m	1254	70
HepB1	Card	64.8	12-23 m	883	70
HepB1	Card or History	86.4	12-23 m	1254	70
HepB3	Card	53.3	12-23 m	883	70
HepB3	Card or History	64.6	12-23 m	1254	70
MCV1	Card	61.6	12-23 m	883	70
MCV1	Card or History	81.6	12-23 m	1254	70

Pol1	Card	64.9	12-23 m	883	70
Pol1	Card or History	87.4	12-23 m	1254	70
Pol3	Card	54.6	12-23 m	883	70
Pol3	Card or History	68.3	12-23 m	1254	70

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Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	81.3	12-23 m	783	93
BCG	Card or History	90.3	12-23 m	783	93
BCG	History	9	12-23 m	783	93
DTP1	Card	81.8	12-23 m	776	93
DTP1	Card or History	87.5	12-23 m	776	93
DTP1	History	5.7	12-23 m	776	93
DTP3	Card	66.8	12-23 m	783	93
DTP3	Card or History	71	12-23 m	783	93
DTP3	History	4.2	12-23 m	783	93
HepB1	Card	82.1	12-23 m	774	93
HepB1	Card or History	88.1	12-23 m	774	93
HepB1	History	6	12-23 m	774	93
HepB3	Card	68.7	12-23 m	774	93
HepB3	Card or History	73.1	12-23 m	774	93
HepB3	History	4.4	12-23 m	774	93
MCV1	Card	71.9	12-23 m	776	93
MCV1	Card or History	77.9	12-23 m	776	93
MCV1	History	6	12-23 m	776	93
Pol1	Card	79.3	12-23 m	774	93
Pol1	Card or History	84.6	12-23 m	774	93
Pol1	History	5.3	12-23 m	774	93
Pol3	Card	64	12-23 m	776	93
Pol3	Card or History	68.7	12-23 m	776	93
Pol3	History	4.7	12-23 m	776	93

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