

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 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 available empirical data accurately reflect immunization system performance and those where the data are likely compromised and present a misleading view of coverage.

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. Bull World Health Organ. * Burton et al. 2012. PLoS One.
* Brown et al. 2013. Open Pub Health Journal. * Danovaro-Holliday et al. 2021. Gates Open Res.

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 6-11, 12-23 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 data collection period.

ABBREVIATIONS AND DEFINITIONS

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. For countries utilizing IPV containing vaccine only, i.e., no recommended dose of OPV, 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.

IPV2: percentage of surviving infants who received a 2nd dose of inactivated polio vaccine. IPV2 coverage estimates produced for OPV using countries.

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 in the production of the estimate.

HEPB3: 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 if coverage for the booster dose is not reported.

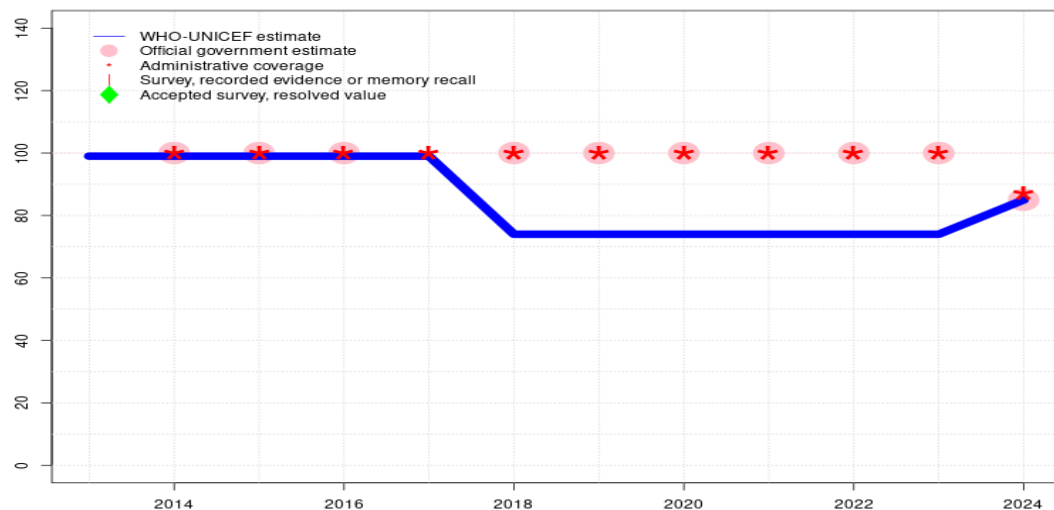
YFV: percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

MENGA: percentage of children who received one dose of meningococcal A conjugate vaccine. MENGA coverage estimates produced for countries in the meningitis belt of sub-Saharan Africa.

Disclaimer: All reasonable precautions have been taken by the World Health Organization and United Nations Children's Fund to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization or United Nations Children's Fund be liable for damages arising from its use.

Libya - BCG

LBY - BCG



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	99	99	99	99	99	74	74	74	74	74	74	85
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	-	100	100	100	-	100	100	100	100	100	100	85
Administrative	-	100	100	100	100	100	100	100	100	100	100	87
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. Programme reports stockout for three months at national and subnational levels. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of

the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

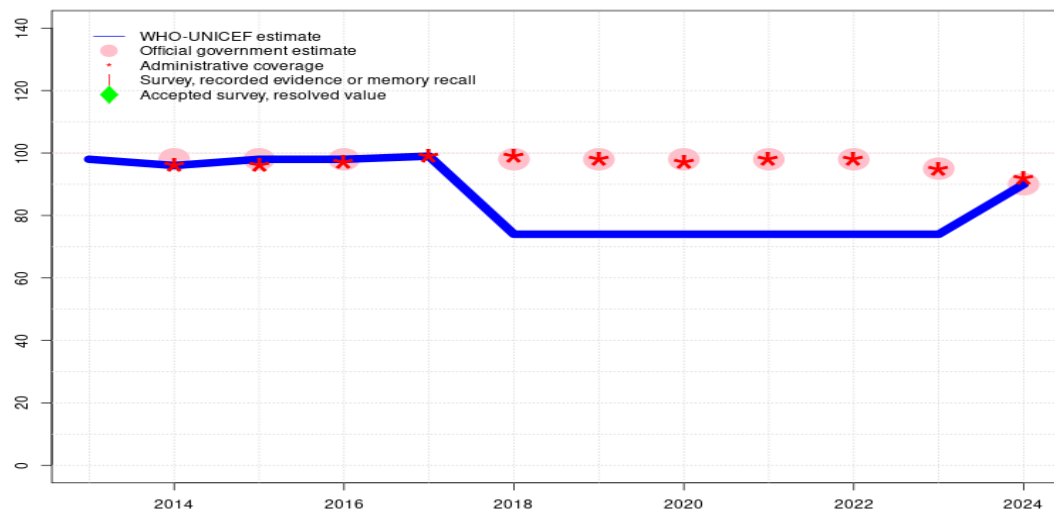
2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - DTP1

LBY - DTP1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	98	96	98	98	99	74	74	74	74	74	74	90
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	98	98	98	-	98	98	98	98	98	95	90
Administrative	-	96	96	97	99	99	98	97	98	98	95	92
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports three months vaccine stockout at national and sub-national levels. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. Using this information and a strong

Libya - DTP1

assumption that immunization services were severely disrupted during the vaccine stock-out, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

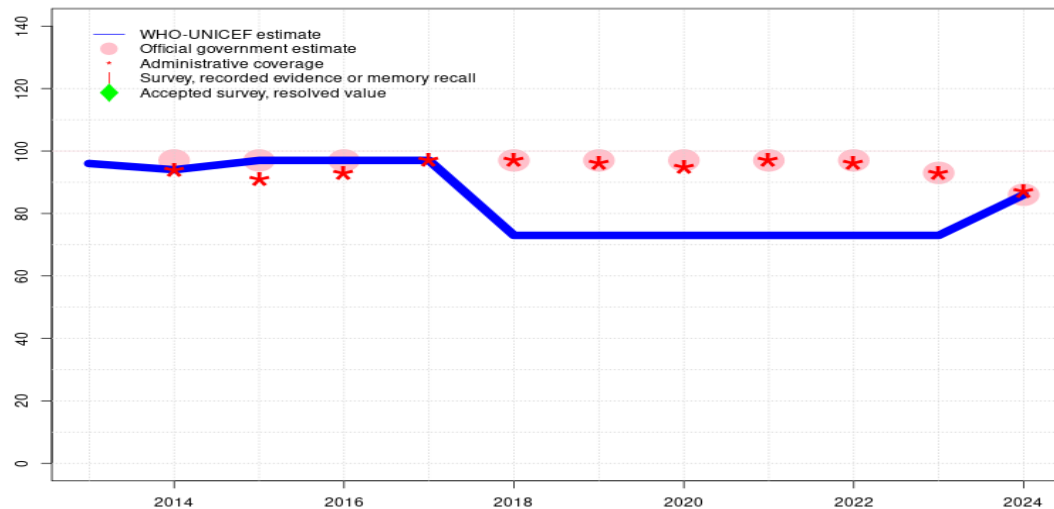
2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - DTP3

LBY - DTP3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	96	94	97	97	97	73	73	73	73	73	73	86
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	97	97	-	97	97	97	97	97	93	86
Administrative	-	94	91	93	97	97	96	95	97	96	93	87
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 97 percent changed from previous revision value of 96 percent. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

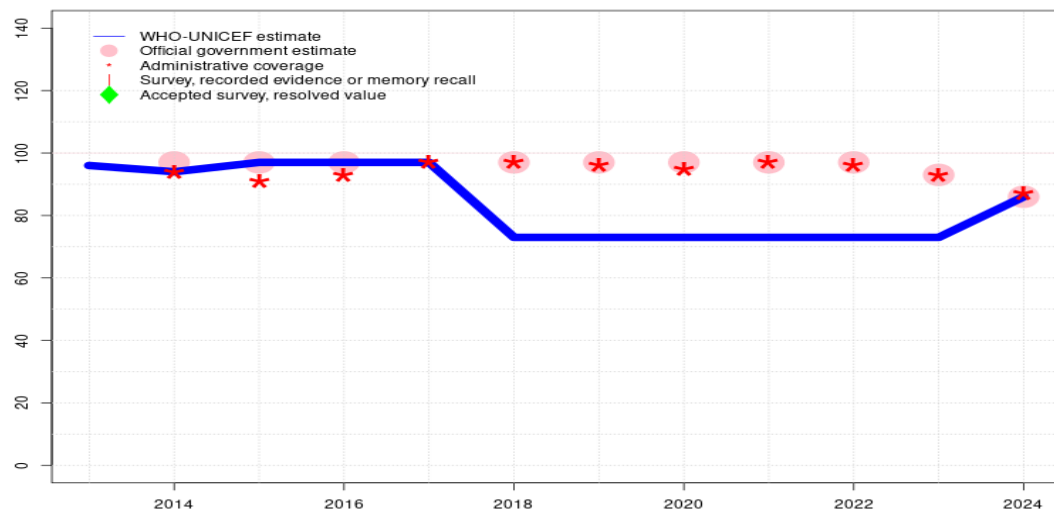
2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - HEPB3

LBY - HEPB3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	96	94	97	97	97	73	73	73	73	73	73	86
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	97	97	-	97	97	97	97	97	93	86
Administrative	-	94	91	93	97	97	96	95	97	96	93	87
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 97 percent changed from previous revision value of 96 percent. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

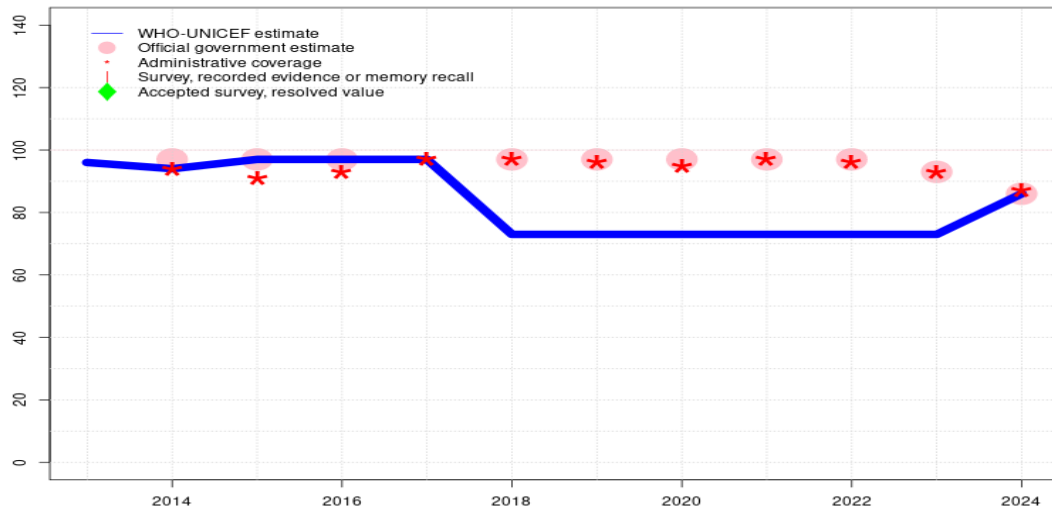
2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - HIB3

LBY - HIB3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	96	94	97	97	97	73	73	73	73	73	73	86
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	97	97	-	97	97	97	97	97	93	86
Administrative	-	94	91	93	97	97	96	95	97	96	93	87
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 97 percent changed from previous revision value of 96 percent. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

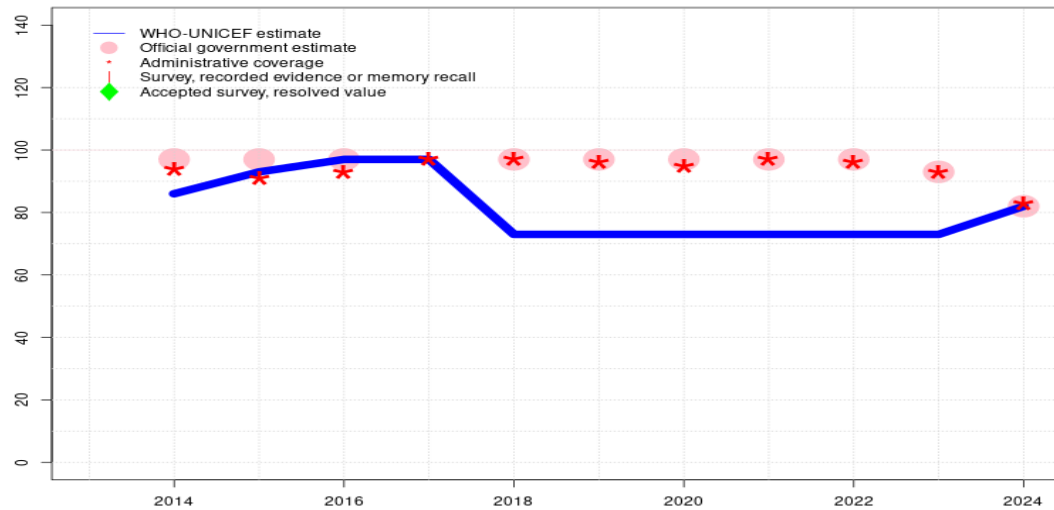
2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - ROTAC

LBY - ROTAC



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	86	93	97	97	73	73	73	73	73	73	82
Estimate GoC	-	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	97	97	-	97	97	97	97	97	93	82
Administrative	-	94	91	93	97	97	96	95	97	96	93	83
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stock-out, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 97 percent changed from previous revision value of 96 percent. Estimate challenged by: D-

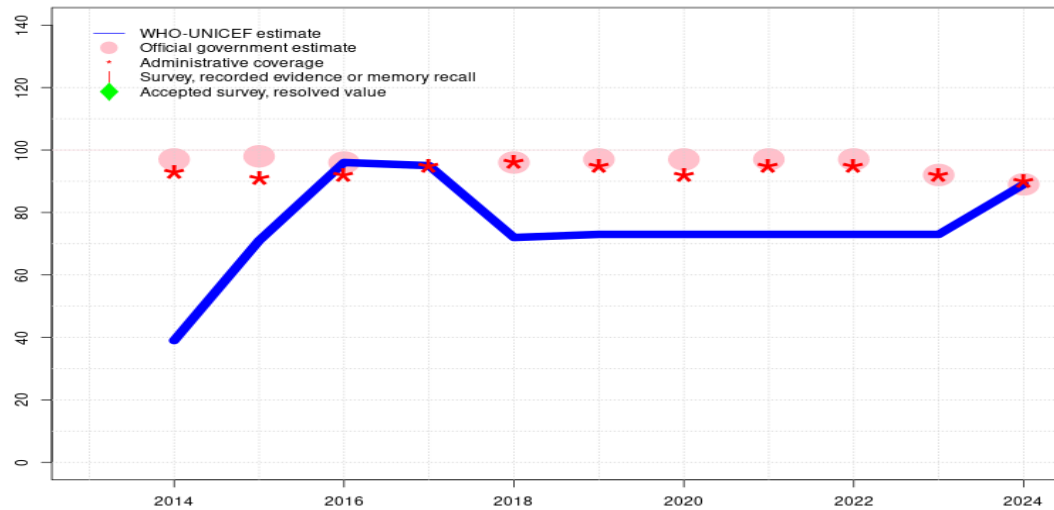
2016: Estimate informed by reported data following introduction. Estimate challenged by: D-

2015: Reported data calibrated to 2014 and 2016 levels. Estimate challenged by: D-R-

2014: Estimate of 86 percent assigned by working group. Rotavirus vaccine introduced in 2013 and reporting started in 2014. Programme reports 97 percent coverage in 92 percent of the target population. Estimate informed by annualized coverage achieved in the national birth cohort. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-R-

Libya - PCV3

LBY - PCV3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	39	71	96	95	72	73	73	73	73	73	89
Estimate GoC	-	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	98	96	-	96	97	97	97	97	92	89
Administrative	-	93	91	92	95	96	95	92	95	95	92	90
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports four months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports four months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 95 percent changed from previous revision value of 94 percent. Estimate challenged by: D-

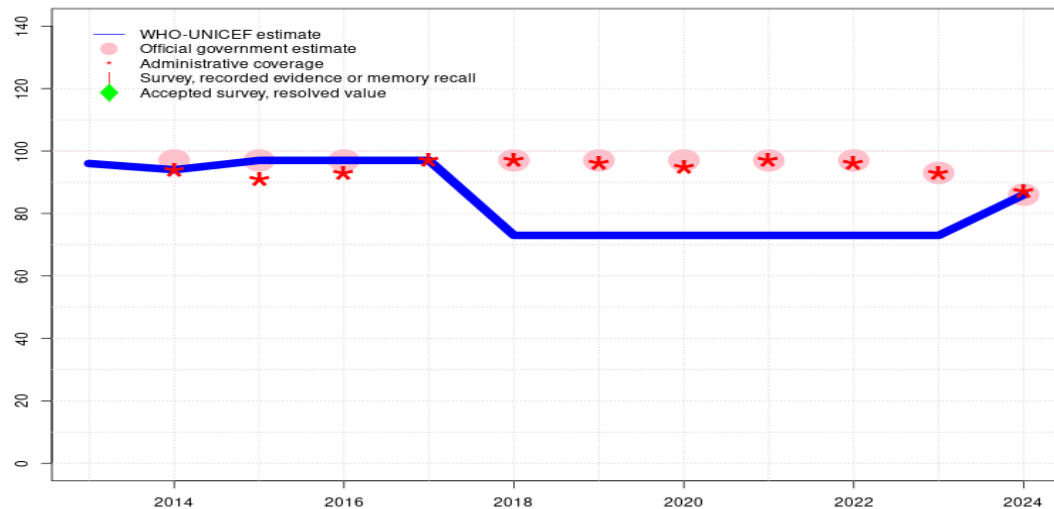
2016: Estimate informed by reported data following introduction. Estimate challenged by: D-

2015: Reported data calibrated to 2014 and 2016 levels. Estimate challenged by: D-R-

2014: Estimate of 39 percent assigned by working group. Pneumococcal conjugate vaccine introduced in 2013 and reporting started in 2014. Programme reports 97 percent coverage in 42 percent of the target population. Estimate informed by coverage achieved in the national target population. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-R-

Libya - POL3

LBY - POL3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	96	94	97	97	97	73	73	73	73	73	73	86
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	97	97	-	97	97	97	97	97	93	86
Administrative	-	94	91	93	97	97	96	95	97	96	93	87
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 97 percent changed from previous revision value of 96 percent. Estimate challenged by: D-

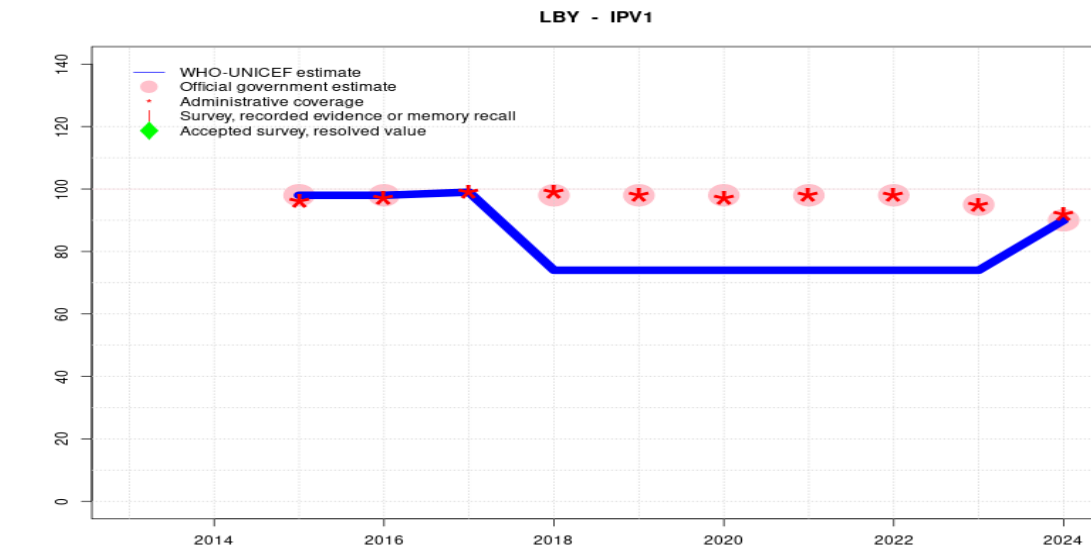
2016: Estimate informed by reported data. Estimate challenged by: D-

2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - IPV1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	98	98	99	74	74	74	74	74	74	90
Estimate GoC	-	-	●	●	●	●	●	●	●	●	●	●
Official	-	-	98	98	-	98	98	98	98	98	95	90
Administrative	-	-	96	97	99	99	98	97	98	98	95	92
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-

2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-

2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-

2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

Libya - IPV1

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

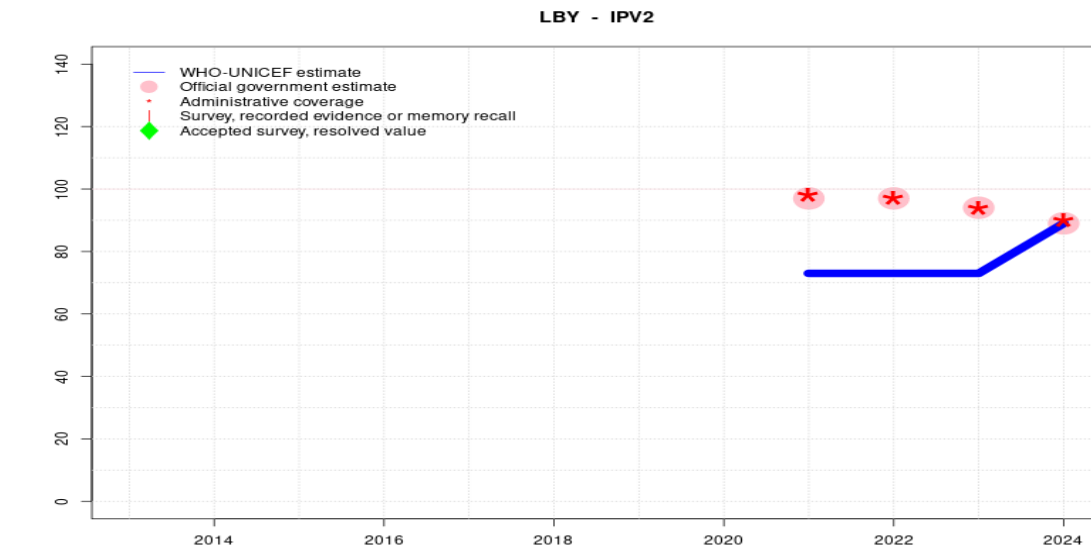
2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

2015: Estimate informed by reported data. Inactivated polio vaccine introduced in April 2014. Reporting started in 2015. Vaccine presentation is DTP-HepB-Hib-IPV. Estimate challenged by: D-

Libya - IPV2



Description:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Programme reports three months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2021: Estimate informed by estimated coverage for DTP3. Second dose of inactivated polio vaccine introduced prior to 2021. Programme uses a sequential schedule with a first dose at 2 months and a second dose at 4 months. Programme reports three months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	-	-	-	-	-	-	73	73	73	89
Estimate GoC	-	-	-	-	-	-	-	-	●	●	●	●
Official	-	-	-	-	-	-	-	-	97	97	94	89
Administrative	-	-	-	-	-	-	-	-	98	97	94	90
Survey	-	-	-	-	-	-	-	-	-	-	-	-

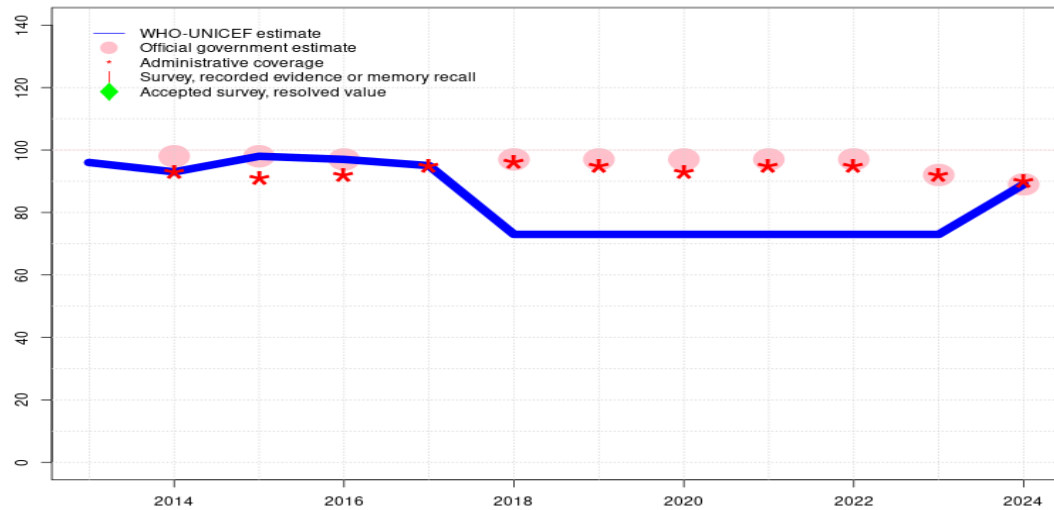
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2024 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.

Libya - MCV1

LBY - MCV1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	96	93	98	97	95	73	73	73	73	73	73	89
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	98	98	97	-	97	97	97	97	97	92	89
Administrative	-	93	91	92	95	96	95	93	95	95	92	90
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate of 95 percent changed from previous revision value of 94 percent. Estimate challenged by: D-

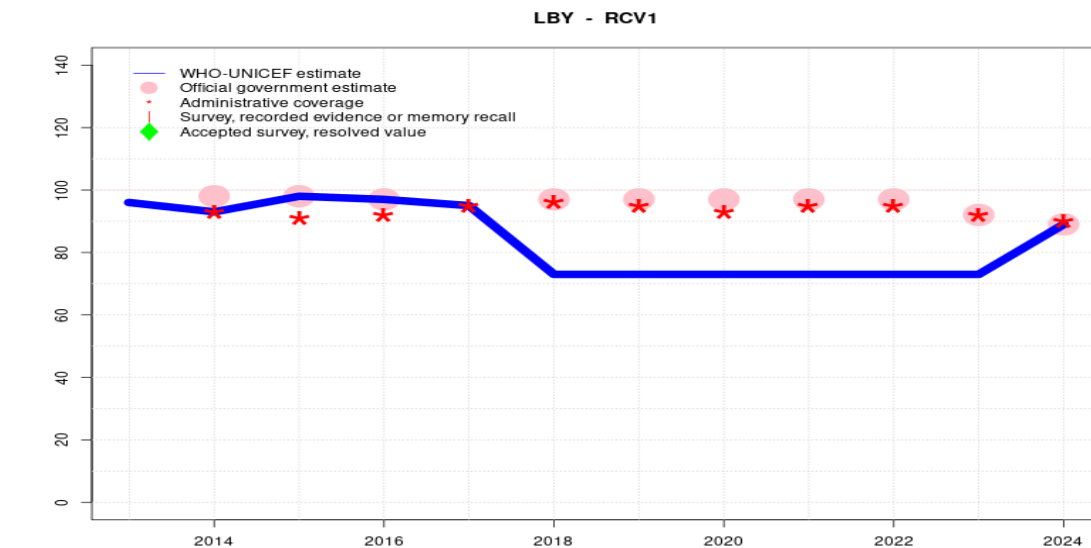
2016: Estimate informed by reported data. Estimate challenged by: D-

2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

Libya - RCV1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	96	93	98	97	95	73	73	73	73	73	73	89
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	98	98	97	-	97	97	97	97	97	92	89
Administrative	-	93	91	92	95	96	95	93	95	95	92	90
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate based on estimated MCV1. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Estimate informed by estimated MCV1. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2018: Programme reports three months vaccine stockout at national and sub-national levels.

Libya - RCV1

Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate based on estimated MCV1. Estimate of 95 percent changed from previous revision value of 94 percent. Estimate challenged by: D-

2016: Estimate based on estimated MCV1. Estimate challenged by: D-

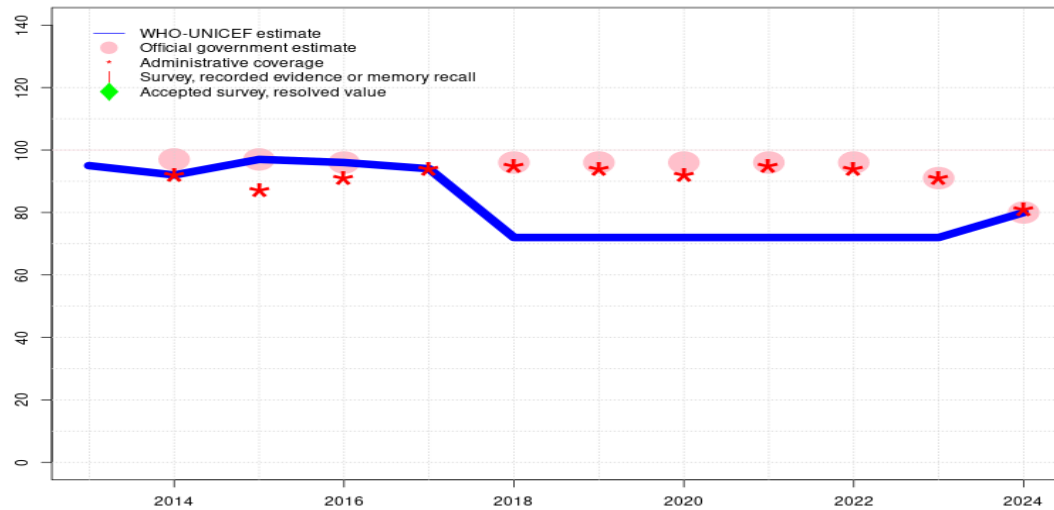
2015: Estimate based on estimated MCV1. Estimate challenged by: D-

2014: Estimate based on estimated MCV1. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate based on estimated MCV1. GoC=No accepted empirical data

Libya - MCV2

LBY - MCV2



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	95	92	97	96	94	72	72	72	72	72	80	80
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	-	97	97	96	-	96	96	96	96	96	91	80
Administrative	-	92	87	91	94	95	94	92	95	94	91	81
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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: 2024 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:

- 2024: Estimate informed by reported data. WHO and UNICEF are aware of the ongoing 2024-2025 Multiple Indicator Cluster Survey and await final results. Reported coverage may be overestimated. The number of administered doses increased in the first couple of months of the year following catch-up activities after stock-outs in 2023. Estimate challenged by: D-
- 2023: Programme reports six months vaccine stockout at national and subnational levels. Estimated coverage may underestimate true coverage. Country reports receiving needed vaccines in late 2023 and conducting catch-up activities. Of note, it has been estimated that 19 percent of health facilities are not providing immunization services (HeRAMS herams.org). Estimate challenged by: D-R-
- 2022: Programme reports three months vaccine stockout at national and subnational levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Despite the ongoing humanitarian crisis, reported coverage levels have been sustained. Government indicates that official estimates are derived from the administrative coverage based on the average of previous years. In 2021, reports indicated that up to 90 percent of primary health care (PHC) were closed in some areas (WHO Appeal for Libya 2023 [who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya](https://www.who.int/emergencies/funding/outbreak-and-crisis-response-appeal/2023/2023-appeals/appeal-libya)). Estimate challenged by: D-R-
- 2021: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-
- 2020: Prolonged instability continues. Available data to quantify the magnitude of the disruption of health service delivery are scarce. Programme reports three months vaccine stockout at national and sub-national levels. As done for previous years, using this information and a strong assumption that immunization services have been severely disrupted during the vaccine stockout, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-
- 2019: WHO and UNICEF have highlighted the impact of ongoing civil conflict and instability on children, particularly those residing in Tripoli, Derna and urban areas in the west and south (see UN News, <https://news.un.org/en/story/2020/01/1055492>). WHO and UNICEF have noted severe disruptions to the health system, including immunization service delivery and availability of essential medicines (see Lancet. 2014;387:1363 and Lancet. 2018;391:824-5). While reports suggest these disruptions have been ongoing for several years, unfortunately, available data that quantifies the magnitude and onset of the disruption of health service delivery are scarce. Programme reports three months

Libya - MCV2

vaccine stockout at national and sub-national levels. Using this information and a strong assumption that immunization services were severely disrupted during the vaccine stock-out, the estimate is based on a 25 percentage point reduction in coverage consistent with the duration of the stockout. Estimate challenged by: D-R-

2018: Programme reports three months vaccine stockout at national and sub-national levels. Estimate informed by a reduction in coverage consistent with an extreme assumption of no service delivery during the three months vaccine stockout. Estimate challenged by: D-R-

2017: Estimate informed by reported administrative data. Estimate challenged by: D-

2016: Estimate informed by reported data. Estimate challenged by: D-

2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported administrative data. Programme does not provide an explanation for adjustment of government official coverage from administrative reported data. Estimate challenged by: D-

2013: Estimate informed by interpolation between reported data. GoC=No accepted empirical data

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

The survey results below present vaccination coverage estimates by antigen, confirmation method, and child’s age at the time of the survey. Coverage based on **Recall** reflects information based upon a mother’s or caregiver’s memory. Coverage based on **Record** reflects information drawn from documented vaccination history in

home- and/or facility-based records. **Evidence seen** reflects the percentage of children in the sample with documented evidence of vaccination history seen by the survey team.

2006 Libyan Arab Republic 2007 Family Health Survey

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
BCG	Record or Recall	99.9	12-23 m	11920	81
DTP1	Record or Recall	99.7	12-23 m	11920	81
DTP3	Record or Recall	98.2	12-23 m	11920	81
MCV1	Record or Recall	93.7	12-23 m	11920	81
POL1	Record or Recall	99.7	12-23 m	11920	81
POL3	Record or Recall	98.2	12-23 m	11920	81

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