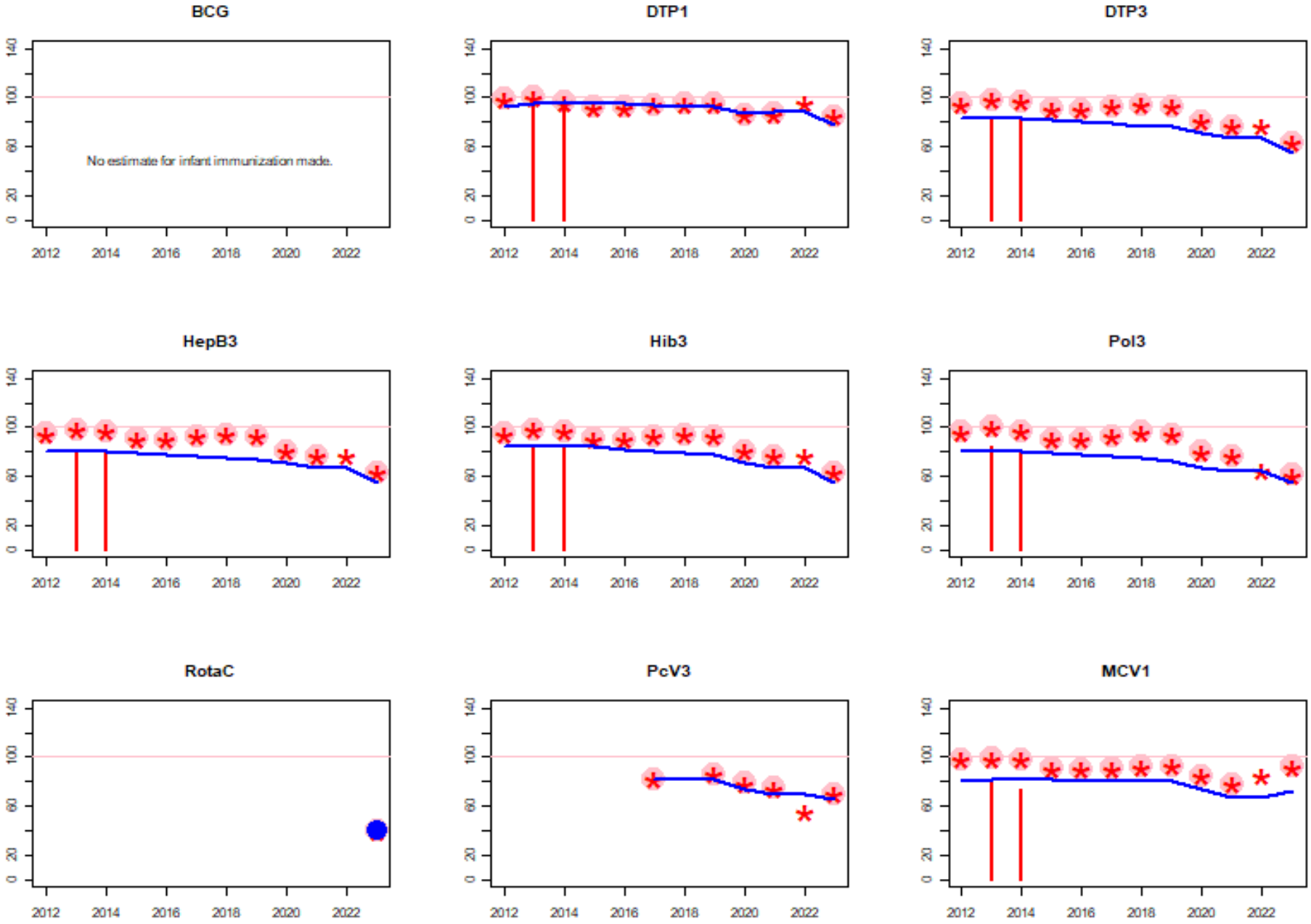

BCG
No estimate for infant immunization made.
DTP1
DTP3
HepB3
Hib3
Pol3
RotaC
PcV3
MCV1
0
20
60
100
140
2012
2014
2016
2018
2020
2022

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.
*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 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

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. Co verage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration nor are the data represented in the accompanying graph and data table.

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

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

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

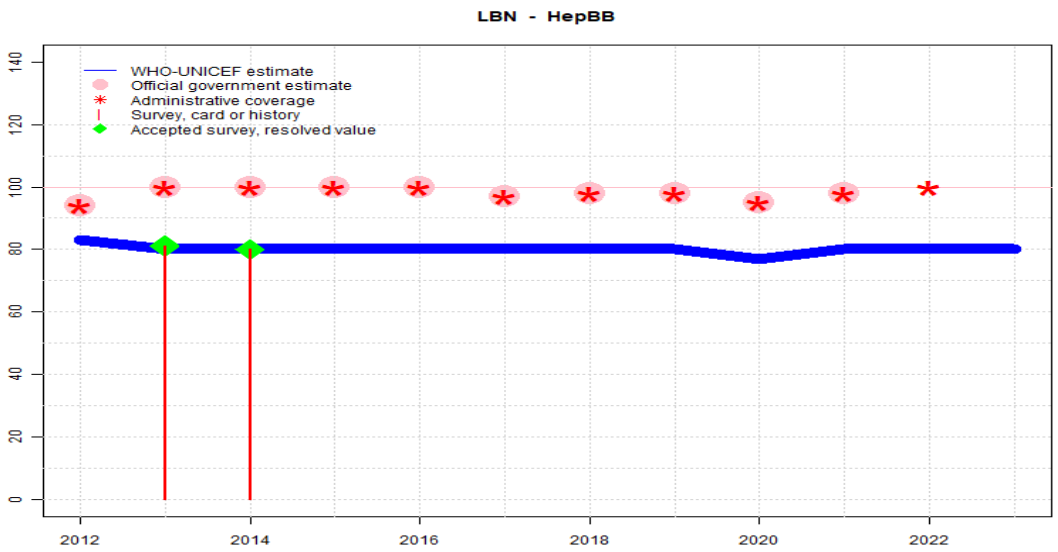
RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.

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

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

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.

Lebanon - HepBB



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	83	80	80	80	80	80	80	80	77	80	80	80
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	94	100	100	100	100	97	98	98	95	98	NA	NA
Administrative	94	100	100	100	100	97	98	98	95	98	100	NA
Survey	NA	81	80	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Reported data calibrated to 2014 levels. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. GoC=No accepted empirical data

2022: Reported data calibrated to 2014 levels. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of ad-

ministrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: R-

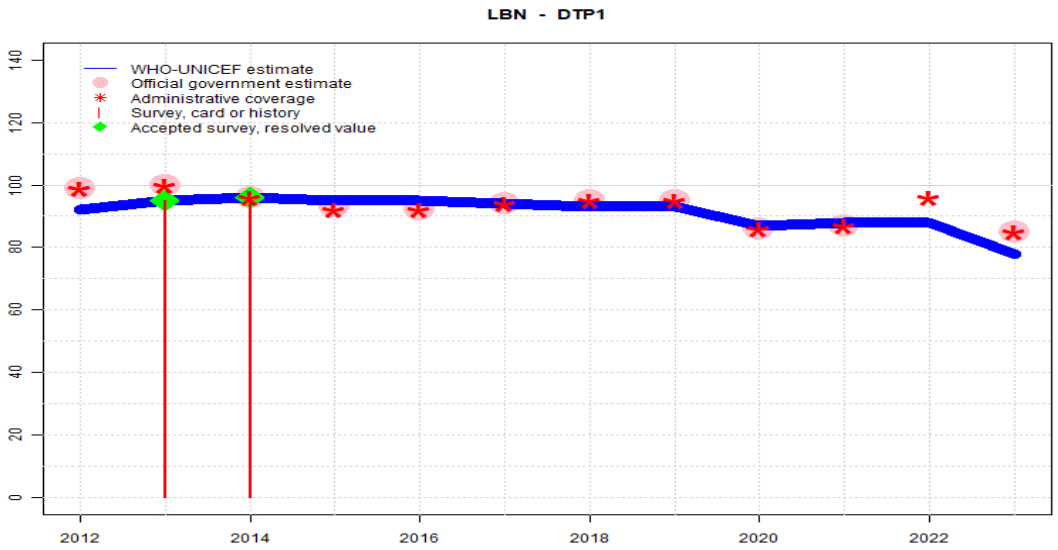
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate challenged by: R-

2014: Estimate of 80 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 80 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Reported data calibrated to 2008 and 2013 levels. Reported data excluded. Reported data not consistent with survey results. Estimate challenged by: D-R-

Lebanon - DTP1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	92	95	96	95	95	94	93	93	87	88	88	78
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	99	100	96	93	92	94	95	95	86	87	NA	85
Administrative	99	100	96	92	92	94	95	95	86	87	96	85
Survey	NA	95	96	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate is informed by the relative relationship between estimated and administrative coverage during the prior year applied to reported coverage for 2022. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate reflects declining trend in reported coverage from 2022. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Programme reports one month vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 93 percent changed from previous revision value of 96 percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 93 percent changed from previous revision value of 96 percent. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 94 percent changed from previous revision value of 96 percent. Estimate challenged

by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 95 percent changed from previous revision value of 96 percent. Estimate challenged by: D-R-

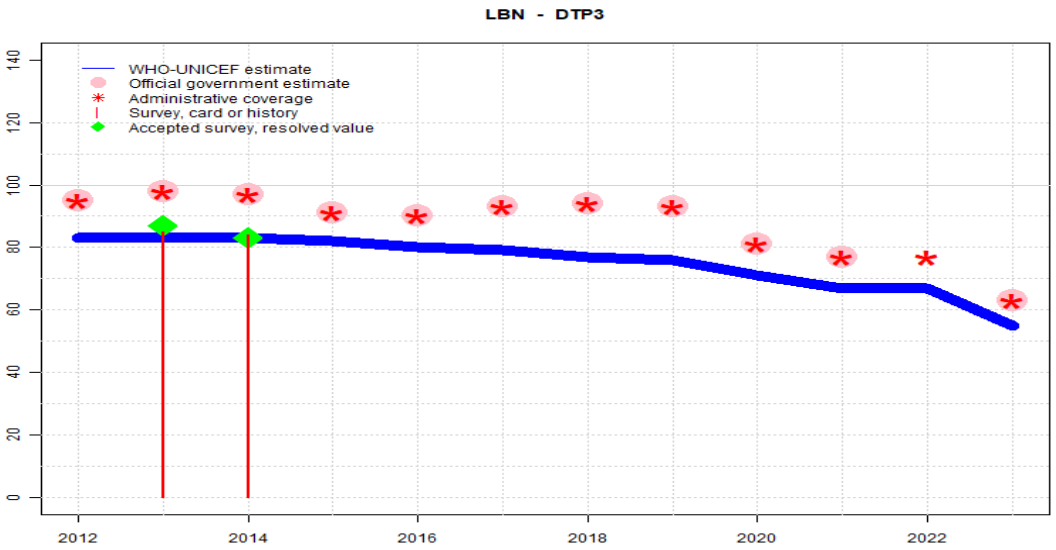
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate of 95 percent changed from previous revision value of 96 percent. Estimate challenged by: D-R-

2014: Estimate of 96 percent assigned by working group. Estimate based on survey results. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 95 percent assigned by working group. Estimate based on survey results. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Reported data calibrated to 2008 and 2013 levels. Reported data excluded. Reported data not consistent with survey results. Estimate of 92 percent changed from previous revision value of 93 percent. Estimate challenged by: D-R-

Lebanon - DTP3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	83	83	83	82	80	79	77	76	71	67	67	55
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	95	98	97	91	90	93	94	93	81	77	NA	63
Administrative	95	98	97	91	90	93	94	93	81	77	77	63
Survey	NA	85	84	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate is informed by the relative relationship between estimated and administrative coverage during the prior year applied to reported coverage for 2022. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate reflects declining trend in reported coverage from 2022. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Programme reports one month vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 76 percent changed from previous revision value of 83 percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 77 percent changed from previous revision value of 83 percent. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 79 percent changed from previous revision value of 83 percent. Estimate challenged

by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 80 percent changed from previous revision value of 83 percent. Estimate challenged by: R-

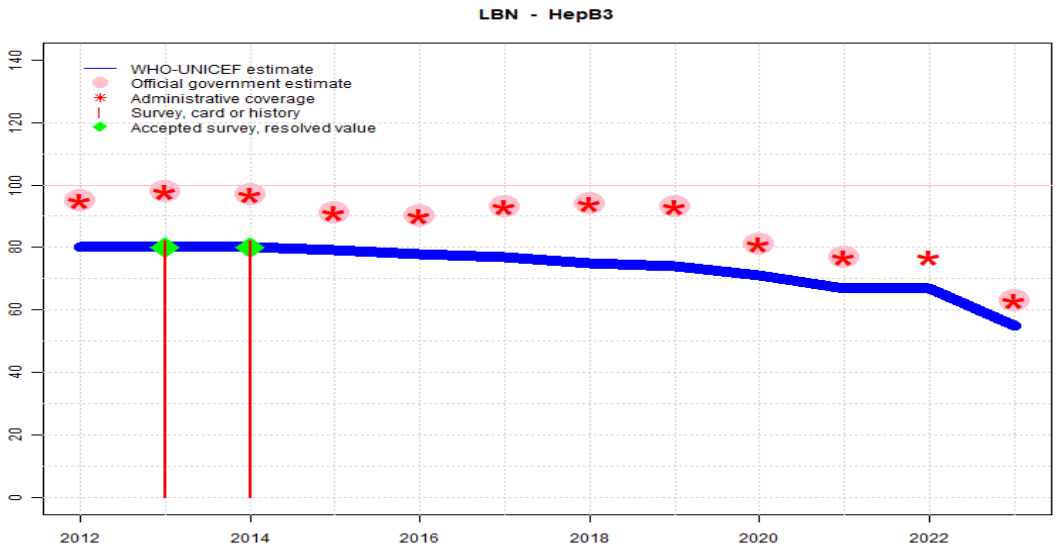
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate of 82 percent changed from previous revision value of 83 percent. Estimate challenged by: R-

2014: Estimate of 83 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 84 percent modifed for recall bias to 83 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 53 percent and 3rd dose card only coverage of 46 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 83 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 85 percent modifed for recall bias to 87 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 59 percent and 3rd dose card only coverage of 54 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Estimate informed by interpolation between 2008 and 2013 levels. Estimate based on survey results. Reported data excluded. Reported data not consistent with survey results. A national EPI coverage was conducted during 2013 among children aged 12-59 months and suggests that 90 percent of children received three doses of DTP containing vaccine by the 5th birthday. Coverage among children aged less than 12 months will be slightly lower. Estimate challenged by: D-R-

Lebanon - HepB3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	80	80	80	79	78	77	75	74	71	67	67	55
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	95	98	97	91	90	93	94	93	81	77	NA	63
Administrative	95	98	97	91	90	93	94	93	81	77	77	63
Survey	NA	82	82	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate is informed by the relative relationship between estimated and administrative coverage during the prior year applied to reported coverage for 2022. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate reflects declining trend in reported coverage from 2022. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 74 percent changed from previous revision value of 80 percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 75 percent changed from previous revision value of 80 percent. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 77 percent changed from previous revision value of 80 percent. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 78 percent changed from previous revision value of 80 percent. Estimate challenged by: R-

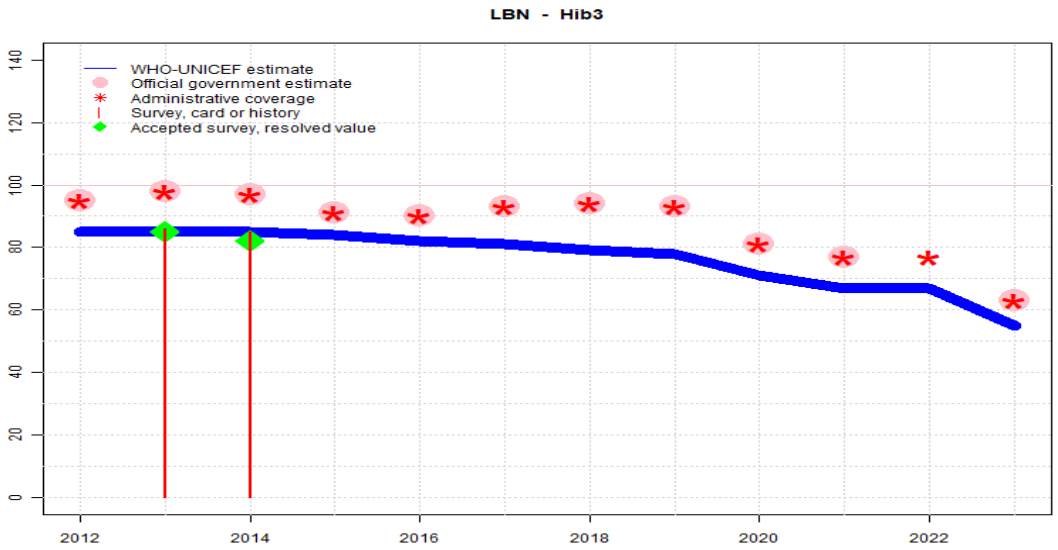
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate of 79 percent changed from previous revision value of 80 percent. Estimate challenged by: R-

2014: Estimate of 80 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 82 percent modifed for recall bias to 80 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 52 percent and 3rd dose card only coverage of 44 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 80 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 82 percent modifed for recall bias to 80 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 59 percent and 3rd dose card only coverage of 50 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Reported data calibrated to 2008 and 2013 levels. Reported data excluded. Reported data not consistent with survey results. Estimate challenged by: D-R-

Lebanon - Hib3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	85	85	85	84	82	81	79	78	71	67	67	55
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	95	98	97	91	90	93	94	93	81	77	NA	63
Administrative	95	98	97	91	90	93	94	93	81	77	77	63
Survey	NA	86	85	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate is informed by the relative relationship between estimated and administrative coverage during the prior year applied to reported coverage for 2022. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate reflects declining trend in reported coverage from 2022. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 78 percent changed from previous revision value of 85 percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 79 percent changed from previous revision value of 85 percent. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 81 percent changed from previous revision value of 85 percent. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 82 percent changed from previous revision value of 85 percent. Estimate challenged by: R-

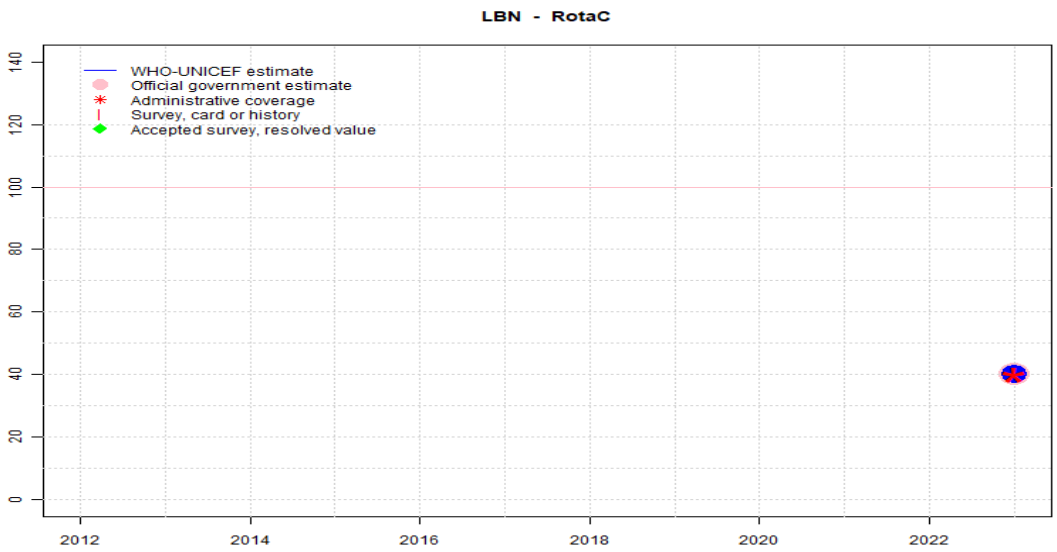
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate of 84 percent changed from previous revision value of 85 percent. Estimate challenged by: R-

2014: Estimate of 85 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 85 percent modifed for recall bias to 82 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 53 percent and 3rd dose card only coverage of 46 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 85 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 86 percent modifed for recall bias to 85 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 59 percent and 3rd dose card only coverage of 54 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Programme reports Hib containing vaccine stockout for 5 months in 26 districts. Estimate challenged by: D-R-

2012: Reported data calibrated to 2008 and 2013 levels. Reported data excluded. Reported data not consistent with survey results. Estimate of 85 percent changed from previous revision value of 84 percent. Estimate challenged by: D-R-

Lebanon - RotaC



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

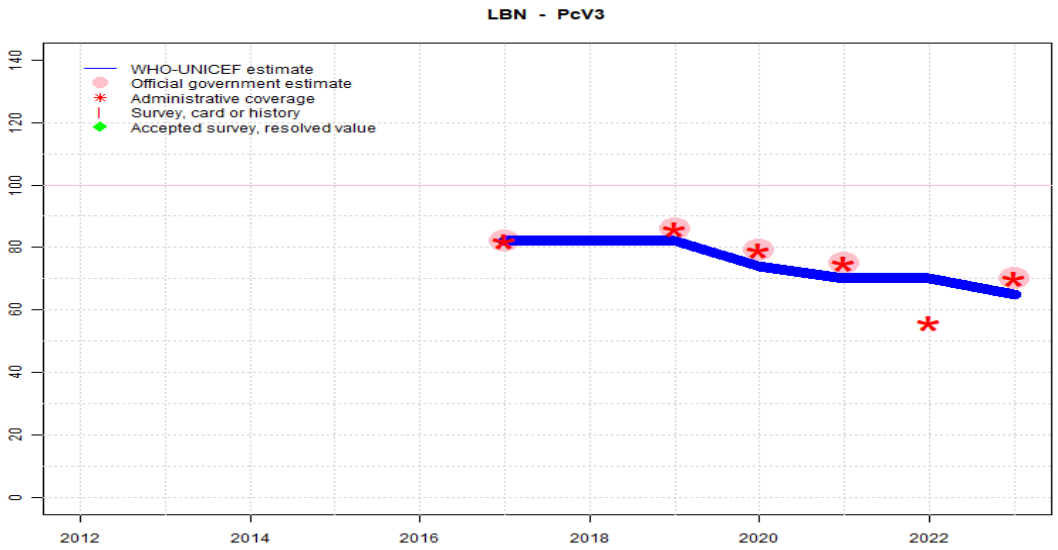
● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate informed by reported data. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Rotavirus vaccine introduced in November 2022 and reporting started in 2023. GoC=R+ D+

Lebanon - PcV3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	NA	NA	82	82	82	74	70	70	65
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	82	NA	86	79	75	NA	70
Administrative	NA	NA	NA	NA	NA	82	NA	86	79	75	56	70
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Reported data since 2019 suggest a decreasing trend in reported doses administered. Estimate informed by relative relationship between estimated coverage and reported doses administered for 2021 applied to the reported number of doses administered for 2023. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification.Reported data excluded due to decline in reported coverage from 75 percent to 56 percent with increase to 70 percent. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Estimate based on MCV1 because both vaccines are recommended at the same age. Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

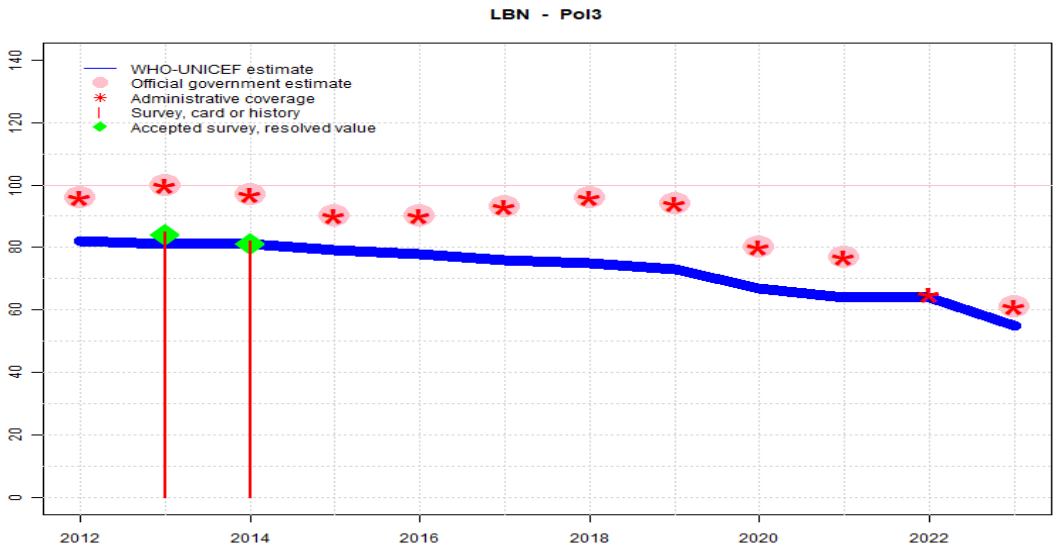
2019: Estimate based on MCV1 because both vaccines are recommended at the same age. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Programme reports a one month national level vaccine stockout. Estimate challenged by: D-R-

2018: Estimate based on MCV1 because both vaccines are recommended at the same age. GoC=No accepted empirical data

2017: Estimate based on MCV1 because both vaccines are recommended at the same age. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Pneumococcal conjugate vaccine introduced in 2015

and reporting began in 2017. Estimate based on MCV2 because both vaccines are recommended at the same age. Estimate challenged by: D-R-

Lebanon - Pol3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	82	81	81	79	78	76	75	73	67	64	64	55
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	96	100	97	90	90	93	96	94	80	77	NA	61
Administrative	96	100	97	90	90	93	96	94	80	77	65	61
Survey	NA	85	82	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate is informed by estimated DTP3 coverage. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate reflects declining trend in reported coverage from 2022. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Estimate challenged by: R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage is unexplained by country but aligns with COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 73 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 75 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 76 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Govern-

ment of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 78 percent changed from previous revision value of 81 percent. Estimate challenged by: R-

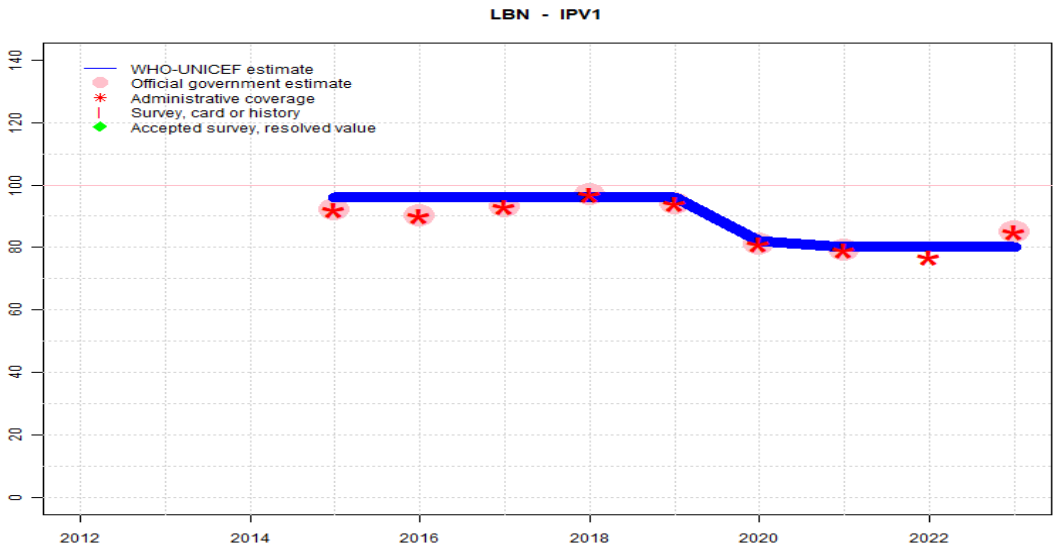
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate of 79 percent changed from previous revision value of 81 percent. Estimate challenged by: R-

2014: Estimate of 81 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 82 percent modifed for recall bias to 81 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 53 percent and 3rd dose card only coverage of 45 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 81 percent assigned by working group. Estimate based on survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 card or history results of 85 percent modifed for recall bias to 84 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 60 percent and 3rd dose card only coverage of 53 percent. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Reported data calibrated to 2008 and 2013 levels. Reported data excluded. Reported data not consistent with survey results. Estimate of 82 percent changed from previous revision value of 80 percent. Estimate challenged by: D-R-

Lebanon - IPV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	96	96	96	96	96	82	80	80	80
Estimate GoC	NA	NA	NA	•	•	•	•	•	•	•	•	•
Official	NA	NA	NA	92	90	93	97	94	81	79	NA	85
Administrative	NA	NA	NA	92	90	93	97	94	81	79	77	85
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

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

2023: Despite trend in reported data suggesting an increase in number of doses administered from 2021, estimate is based on prior year estimated coverage given the inconsistent trends for IPV1 and DTP1, vaccines recommended for administration at 2 months of age. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Estimate challenged by: R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Estimate is based on estimated DTP1 level. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate challenged by: D-R-

2018: Estimate based on DTP1 coverage estimate. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate

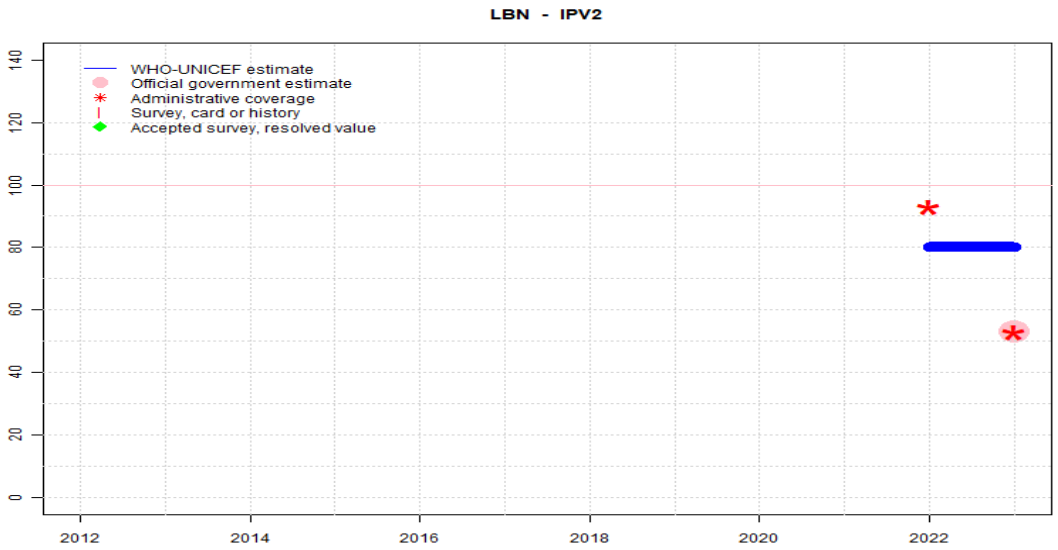
challenged by: D-R-

2017: Estimate based on DTP1 coverage estimate. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate challenged by: D-R-

2016: Estimate based on DTP1 coverage estimate. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2015: Inactivated polio vaccine introduced during 2011. Estimate based on DTP1 coverage level. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate challenged by: D-R-

Lebanon - IPV2



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	80
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93	53
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

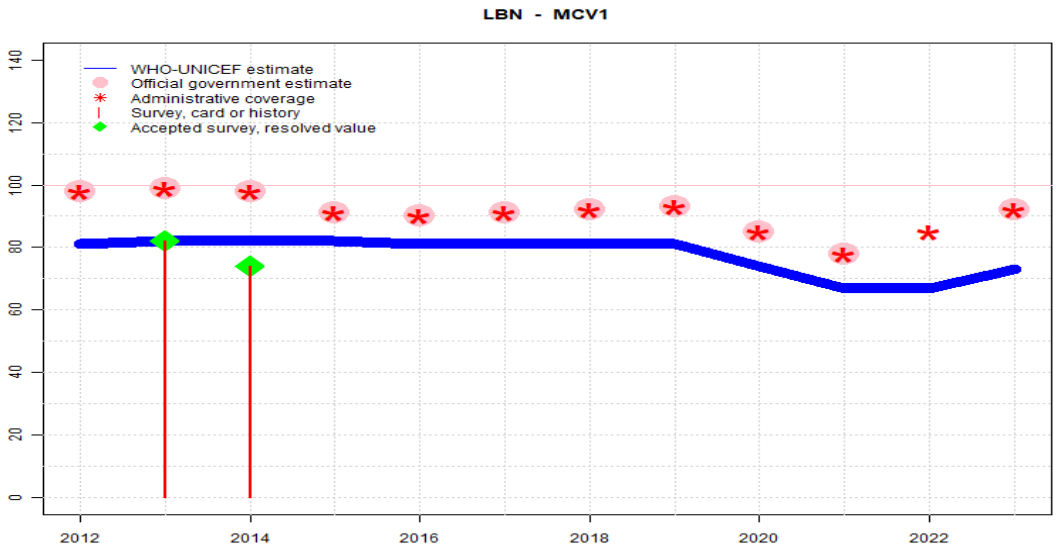
Description:

Estimates for a second dose of inactivated polio vaccine (IPV) begin in 2021 following a Strategic Advisory Group of Experts on Immunization (SAGE) recommendation in October 2020 that a second IPV dose increases protection against all polioviruses, including protection against paralysis caused by vaccine derived polio virus (type 2) (VDPV2). The addition of IPV2 is the next step towards complete OPV withdrawal. IPV2 coverage estimates produced for OPV using countries.

2023: Estimate based on estimated IPV1 assuming zero dropout given unexplained 45 percent decrease in reported number of doses administered from 2022 to 2023. Reported data excluded due to decline in reported coverage from 93 level to 53 percent. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-

2022: Reported coverage for the second dose of inactivated polio vaccine, recommended for administration at 4 months of age, exceeds that for IPV1. Estimate based on estimated IPV1 assuming zero dropout. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Estimate challenged by: D-R-

Lebanon - MCV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	81	82	82	82	81	81	81	81	74	67	67	73
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	98	99	98	91	90	91	92	93	85	78	NA	92
Administrative	98	99	98	91	90	91	92	93	85	78	85	92
Survey	NA	82	74	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate is informed by the relative relationship between estimated and administrative coverage during the prior year applied to reported coverage for 2022. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-

2022: Estimate informed by prior year estimated value. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Intensification of vaccination with measles-containing vaccines reported for Q4 2020. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged

by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: R-

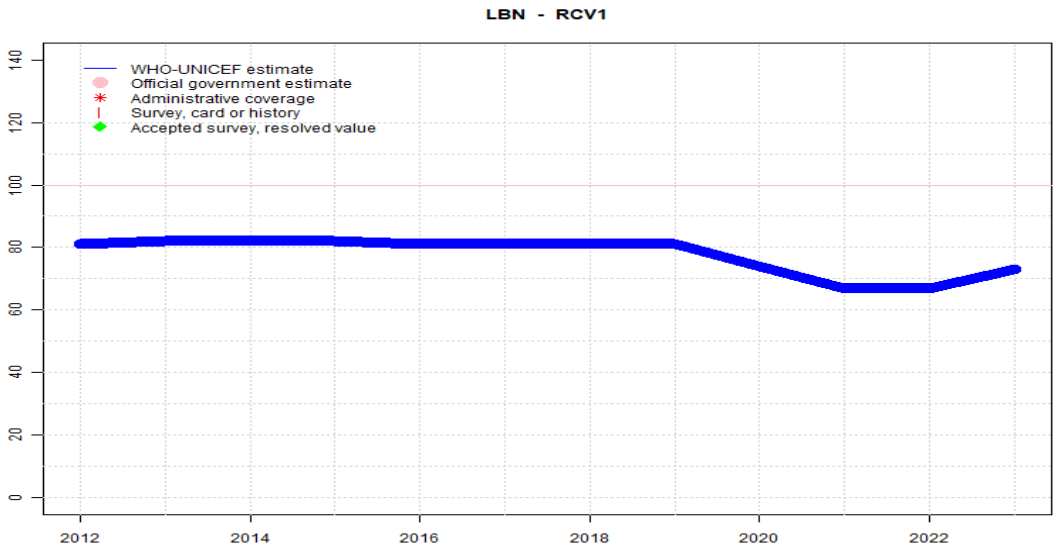
2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate challenged by: R-

2014: Estimate of 82 percent assigned by working group. Estimate based on survey results for the 2013 cohort. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate of 82 percent assigned by working group. Estimate based on survey results for the 2013 cohort. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Reported data calibrated to 2008 and 2013 levels. Reported data excluded. Reported data not consistent with survey results. Estimate challenged by: D-R-

Lebanon - RCV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	81	82	82	82	81	81	81	81	74	67	67	73
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

For this revision, coverage estimates for the first dose of rubella containing vaccine are based on WHO and UNICEF estimates of coverage of measles containing vaccine. Nationally reported coverage of rubella containing vaccine is not taken into consideration nor are they represented in the the accompanying graph and data table.

2023: Estimate informed by prior year estimated value. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-

2022: Estimate informed by prior year estimated value. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Decline in reported coverage related to COVID-19 pandemic service disruptions. Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Estimate based on estimated MCV1. The reported target population decreased by 15 percent between 2018 and 2019. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-

2018: Estimate based on estimated MCV1. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-

2017: Estimate based on estimated MCV1. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-

2016: Estimate based on estimated MCV1. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate of 81 percent changed from previous revision value of 82 percent. Estimate challenged by: R-

2015: Estimate based on estimated MCV1. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate challenged by: R-

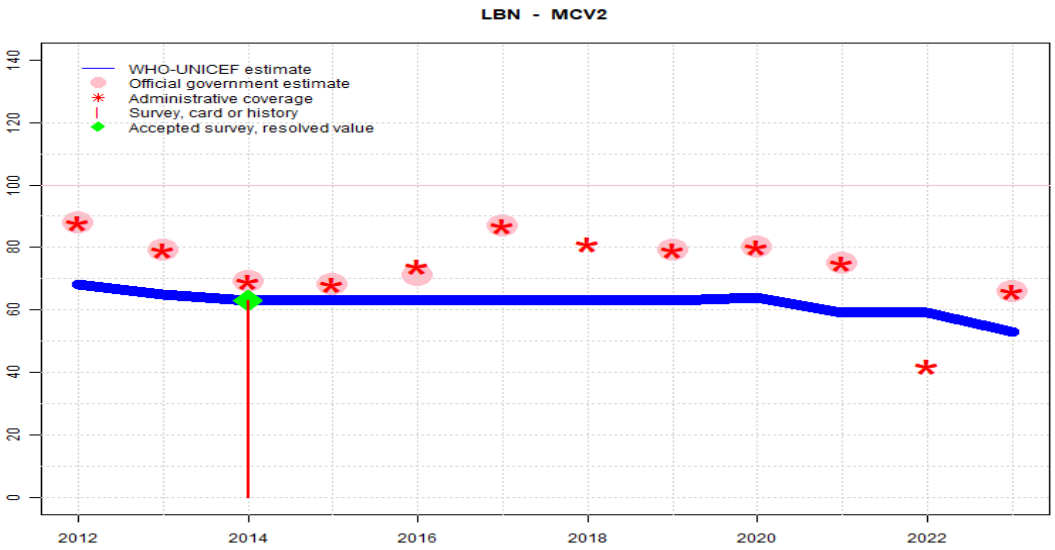
2014: Estimate based on estimated MCV1. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Estimate based on estimated MCV1. Beginning in the middle of 2013, there was an influx

of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Estimate based on estimated MCV1. Estimate challenged by: D-R-

Lebanon - MCV2



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	68	65	63	63	63	63	63	63	64	59	59	53
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	88	79	69	68	71	87	NA	79	80	75	NA	66
Administrative	88	79	69	68	74	87	81	79	80	75	42	66
Survey	NA	NA	63	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

●● Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.

● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

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

2023: Estimate informed by relative relationship between estimated coverage and reported doses administered for 2020 applied to the reported number of doses administered for 2023. Reported data excluded due to sudden change in coverage from 42 level to 66 percent. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-

2022: Estimate based previous year estimate. Reported data excluded. Unexplained decline of 20 percent in reported target population from 2021 to 2022 accompanied by unexplained declines in reported number of doses administered for most antigens. Rapid year-to-year changes require independent verification.Reported data excluded due to decline in reported coverage from 75 percent to 42 percent with increase to 66 percent. Programme reports two months vaccine stockout at national and subnational levels. Estimate challenged by: D-R-

2021: Although there are challenges with the reported data, the trend in coverage from 2020 to 2021 is reflected in the estimated coverage. Reported data excluded. . The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-

2020: Although there are challenges with the reported data, the trend in coverage from 2019 to 2020 is reflected in the estimated coverage. Intensification of vaccination with measles-containing vaccines reported for Q4 2020. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population was the same for 2019 and 2020. Estimate challenged by: D-R-

2019: Reported data calibrated to 2014 levels. Reported data excluded. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine purchase data. The denominator is derived from national statistical reports and UNHCR data inclusive of Lebanese and non-Lebanese children. Programme notes the absence of single year of age information for the target population, thereby requiring use of crude approximations. The reported target population decreased by 15 percent between 2018 and 2019. Estimate challenged by: D-R-

2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate challenged by: D-R-

2017: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2016 EPI coverage evaluation survey results across all vaccines. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: R-

2015: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate challenged by: R-

2014: Estimate of 63 percent assigned by working group. Estimate based on survey results. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. The influx of Syrian subpopulations into Lebanon during 2014 continued to increase potentially impacting reported coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. Beginning in 2015 a stream of work has begun to further understand recent patterns in coverage across recommended vaccines in Lebanon, including a review of administrative recording and reporting systems as well as immunization coverage among displaced populations. Estimate challenged by: D-R-

2013: Reported data calibrated to 2009 and 2014 levels. Reported data excluded. Reported data not consistent with 2013 EPI coverage evaluation survey results across all vaccines. Beginning in the middle of 2013, there was an influx of displaced populations from Syria into Lebanon potentially impacting coverage levels in the country. In spite of reports from UNHCR, reported target population estimates from the national immunization programme do not reflect increases beyond the expected year-to-year population growth. A 2013 national EPI coverage survey suggests lower coverage levels among Syrian subpopulations living in Lebanon, particularly those who recently entered the country. Estimate challenged by: D-R-

2012: Reported data calibrated to 2009 and 2014 levels. Reported data excluded. Reported data not consistent with survey results. Estimate challenged by: R-

Lebanon - survey details

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 1 or 2 years prior to the survey field work.

2014 Lebanon District-Based Immunization Coverage Cluster Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	Card	52.7	12-23 m	9560	64
DTP1	Card or History	95.9	12-23 m	9560	64
DTP1	History	43.2	12-23 m	9560	64
DTP3	Card	45.7	12-23 m	9560	64
DTP3	Card or History	83.8	12-23 m	9560	64
DTP3	History	38.1	12-23 m	9560	64
HepB1	Card	52.4	12-23 m	9560	64
HepB1	Card or History	95	12-23 m	9560	64
HepB1	History	42.6	12-23 m	9560	64
HepB3	Card	43.6	12-23 m	9560	64
HepB3	Card or History	82.3	12-23 m	9560	64
HepB3	History	38.7	12-23 m	9560	64
HepBB	Card	43.2	12-23 m	9560	64
HepBB	Card or History	80.4	12-23 m	9560	64
HepBB	History	37.2	12-23 m	9560	64
Hib1	Card	52.6	12-23 m	9560	64
Hib1	Card or History	95.3	12-23 m	9560	64
Hib1	History	42.7	12-23 m	9560	64
Hib3	Card	45.7	12-23 m	9560	64
Hib3	Card or History	85.1	12-23 m	9560	64
Hib3	History	39.4	12-23 m	9560	64
MCV1	Card	41.7	12-23 m	9560	64
MCV1	Card or History	74	12-23 m	9560	64
MCV1	History	32.2	12-23 m	9560	64
MCV2	Card	23.8	12-23 m	9560	64
MCV2	Card or History	63.4	24-35 m	9560	-
MCV2	History	24.7	12-23 m	9560	64
Pol1	Card	53.1	12-23 m	9560	64
Pol1	Card or History	95.3	12-23 m	9560	64
Pol1	History	42.2	12-23 m	9560	64
Pol3	Card	44.8	12-23 m	9560	64
Pol3	Card or History	82.3	12-23 m	9560	64
Pol3	History	37.5	12-23 m	9560	64

2013 Lebanon District-Based Immunization Coverage Cluster Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	Card	59.1	24-35 m	9560	-
DTP1	Card or History	94.7	24-35 m	9560	-
DTP1	History	35.6	24-35 m	9560	-
DTP3	Card	53.8	24-35 m	9560	-
DTP3	Card or History	85.2	24-35 m	9560	-
DTP3	History	31.4	24-35 m	9560	-
HepB1	Card	58.8	24-35 m	9560	-
HepB1	Card or History	93.9	24-35 m	9560	-
HepB1	History	35.1	24-35 m	9560	-
HepB3	Card	49.9	24-35 m	9560	-
HepB3	Card or History	81.7	24-35 m	9560	-
HepB3	History	31.8	24-35 m	9560	-
HepBB	Card	49.9	24-35 m	9560	-
HepBB	Card or History	81	24-35 m	9560	-
HepBB	History	31.1	24-35 m	9560	-
Hib1	Card	58.6	24-35 m	9560	-
Hib1	Card or History	93	24-35 m	9560	-
Hib1	History	34.4	24-35 m	9560	-
Hib3	Card	53.8	24-35 m	9560	-
Hib3	Card or History	86	24-35 m	9560	-
Hib3	History	32.2	24-35 m	9560	-
MCV1	Card	54.1	24-35 m	9560	-
MCV1	Card or History	82	24-35 m	9560	-
MCV1	History	27.9	24-35 m	9560	-
MCV2	Card	39.7	24-35 m	9560	-
MCV2	History	23.7	24-35 m	9560	-

Pol1	Card	60	24-35 m	9560	-
Pol1	Card or History	94.8	24-35 m	9560	-
Pol1	History	34.8	24-35 m	9560	-
Pol3	Card	53.4	24-35 m	9560	-
Pol3	Card or History	85.3	24-35 m	9560	-
Pol3	History	31.9	24-35 m	9560	-

2010 Expanded Programme of Immunization (EPI) Study - Lebanon: A Cluster Based Survey, 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card	90	12-59 m	5303	61
HepB3	Card	93	12-59 m	5303	61
HepBB	Card	90	12-59 m	5303	61
Hib3	Card	89	12-59 m	5303	61
MCV1	Card	89	12-59 m	5303	61
MCV2	Card	62	12-59 m	5303	61
Pol3	Card	89	12-59 m	5303	61

2008 Lebanon Multiple Indicator Cluster Survey 2009

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	C or H <12 months	83.2	12-23 m	626	55
DTP1	Card	51.2	12-23 m	626	55
DTP1	Card or History	84.1	12-23 m	626	55
DTP1	History	32.9	12-23 m	626	55
DTP3	C or H <12 months	70.6	12-23 m	626	55
DTP3	Card	48.6	12-23 m	626	55
DTP3	Card or History	72	12-23 m	626	55
DTP3	History	23.4	12-23 m	626	55
HepB1	C or H <12 months	83.2	12-23 m	626	55
HepB1	Card	51.2	12-23 m	626	55
HepB1	Card or History	84.1	12-23 m	626	55
HepB1	History	32.9	12-23 m	626	55
HepB3	C or H <12 months	70.6	12-23 m	626	55
HepB3	Card	48.6	12-23 m	626	55
HepB3	Card or History	72	12-23 m	626	55
HepB3	History	23.4	12-23 m	626	55
HepBB	C or H <12 months	90.8	12-23 m	626	55
HepBB	Card	51.4	12-23 m	626	55
HepBB	Card or History	90.8	12-23 m	626	55
HepBB	History	39.4	12-23 m	626	55
Hib1	C or H <12 months	83.2	12-23 m	626	55
Hib1	Card	51.2	12-23 m	626	55
Hib1	Card or History	84.1	12-23 m	626	55
Hib1	History	32.9	12-23 m	626	55
Hib3	C or H <12 months	70.6	12-23 m	626	55
Hib3	Card	48.6	12-23 m	626	55
Hib3	Card or History	72	12-23 m	626	55
Hib3	History	23.4	12-23 m	626	55
MCV1	C or H <12 months	70.9	12-23 m	626	55
MCV1	Card	43.8	12-23 m	626	55
MCV1	Card or History	78.6	12-23 m	626	55
MCV1	History	34.8	12-23 m	626	55
Pol1	C or H <12 months	85.3	12-23 m	626	55
Pol1	Card	53.3	12-23 m	626	55
Pol1	Card or History	85.9	12-23 m	626	55
Pol1	History	32.6	12-23 m	626	55
Pol3	C or H <12 months	72.4	12-23 m	626	55
Pol3	Card	46.1	12-23 m	626	55
Pol3	Card or History	73.9	12-23 m	626	55
Pol3	History	27.8	12-23 m	626	55

2003 Lebanon Family Health Survey (PAPFAM) 2004

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	Card or History	83.3	12-23 m	3365	62
DTP3	Card or History	74.4	12-23 m	3365	62
MCV1	Card or History	53.4	12-23 m	3365	62
Pol1	Card or History	83.3	12-23 m	3365	62
Pol3	Card or History	74.4	12-23 m	3365	62
YFV	Card or History	50.4	12-23 m	3365	62

1999 Preliminary Report on the Multiple Cluster Survey on the Situation of Children in Lebanon, 2001

Lebanon - survey details

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP3	Card or History	90.1	12-23 m	-	59
MCV1	Card or History	88	12-23 m	-	59
Pol3	Card or History	90.1	12-23 m	-	59

Lebanon - survey details

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