

Lebanon: WHO and UNICEF estimates of immunization coverage: 2024 revision

BACKGROUND NOTE Each year WHO and UNICEF jointly review reports submitted by Member States regarding national immunization coverage, finalized survey reports as well as data from published and grey literature. Based on these data, with due consideration to potential biases and the views of local experts, WHO and UNICEF attempt to distinguish between situations where available empirical data accurately reflect immunization system performance and those where the data are likely compromised and present a misleading view of coverage.

WHO and UNICEF estimates are country-specific; that is to say, each country's data are reviewed individually, and data are not borrowed from other countries in the absence of data. Estimates are not based on ad hoc adjustments to reported data; in some instances empirical data are available from a single source, usually the nationally reported coverage data. In cases where no data are available for a given country/vaccine/year combination, data are considered from earlier and later years and interpolated to estimate coverage for the missing year(s). In cases where data sources are mixed and show large variation, an attempt is made to identify the most likely estimate with consideration of the possible biases in available data. For methods see:

* Burton et al. 2009. Bull World Health Organ. * Burton et al. 2012. PLoS One.
* Brown et al. 2013. Open Pub Health Journal. * Danovaro-Holliday et al. 2021. Gates Open Res.

DATA SOURCES

ADMINISTRATIVE coverage: Reported by national authorities and based on aggregated administrative reports from health service providers on the number of vaccinations administered during a given period (numerator data) and reported target population data (denominator data). May be biased by inaccurate numerator and/or denominator data.

OFFICIAL coverage: Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.

SURVEY coverage: Based on estimated coverage from population-based household surveys among children aged 6-11, 12-23 or 24-35 months following a review of survey methods and results. Information is based on the combination of vaccination history from documented evidence or caregiver recall. Survey results are considered for the appropriate birth cohort based on data collection period.

ABBREVIATIONS AND DEFINITIONS

BCG: percentage of births who received one dose of Bacillus Calmette Guerin vaccine.

DTP1 / DTP3: percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.

POL3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants < 1 year of age. For countries utilizing IPV containing vaccine only, i.e., no recommended dose of OPV, WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (POL3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated POL3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated POL3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

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

MCV1: percentage of surviving infants who received the 1st dose of measles containing vaccine. In countries where the national schedule recommends the 1st dose of MCV at 12 months or later based on the epidemiology of disease in the country, coverage estimates reflect the percentage of children who received the 1st dose of MCV as recommended.

MCV2: percentage of children who received the 2nd dose of measles containing vaccine according to the nationally recommended schedule.

RCV1: percentage of surviving infants who received the 1st dose of rubella containing vaccine. Coverage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration in the production of the estimate.

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

HEPB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.

HIB3: percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.

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

PCV3: percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PCV prior to the 1st birthday if coverage for the booster dose is not reported.

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

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

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NOTE DE SYNTHÈSE Chaque année, l'OMS et l'UNICEF examinent conjointement les rapports soumis par les États Membres concernant la couverture vaccinale nationale, les rapports d'enquêtes finalisés, ainsi que les données issues de la littérature publiée et grise. Sur la base de ces données, et en tenant dûment compte des biais potentiels ainsi que des avis des experts locaux, l'OMS et l'UNICEF s'efforcent de distinguer les situations où les données empiriques disponibles reflètent fidèlement la performance du système de vaccination de celles où les données sont probablement compromises et donnent une vision trompeuse de la couverture.

Les estimations de l'OMS et de l'UNICEF sont spécifiques à chaque pays ; c'est-à-dire que les données de chaque pays sont examinées individuellement, et aucune donnée n'est empruntée à d'autres pays en l'absence de données. Les estimations ne reposent pas sur des ajustements ponctuels des données rapportées ; dans certains cas, des données empiriques proviennent d'une seule source, généralement les données de couverture déclarées au niveau national. Lorsqu'aucune donnée n'est disponible pour une combinaison donnée de pays/vaccin/année, les données des années précédentes et suivantes sont prises en compte et interpolées pour estimer la couverture des années manquantes. Dans les cas où les sources de données sont variées et présentent de grandes variations, une tentative est faite pour identifier l'estimation la plus probable en tenant compte des biais potentiels dans les données disponibles. Pour les méthodes, voir :

* Burton et al. 2009. Bull World Health Organ. * Burton et al. 2012. PLoS One.

* Brown et al. 2013. Open Pub Health Journal. * Danovaro-Holliday et al. 2021. Gates Open Res.

SOURCES DE DONNÉES

Couverture ADMINISTRATIVE: Rapportée par les autorités nationales et basée sur des rapports administratifs agrégés provenant des prestataires de services de santé concernant le nombre de vaccinations administrées sur une période donnée (données du numérateur) et les données déclarées sur la population cible (données du dénominateur). Cette couverture peut être biaisée par des inexactitudes dans les données du numérateur et/ou du dénominateur.

Couverture OFFICIELLE: Estimation de la couverture rapportée par les autorités nationales, reflétant leur évaluation de la couverture la plus probable sur la base d'une combinaison de la couverture administrative, des estimations basées sur des enquêtes ou d'autres sources de données ou ajustements. Les approches pour déterminer la couverture OFFICIELLE peuvent varier d'un pays à l'autre.

Couverture par ENQUÊTE: Basée sur des estimations de couverture issues d'enquêtes menées auprès des ménages chez des enfants âgés de 6-11, 12-23 ou 24-35 mois, suivant une revue des méthodes et des résultats de l'enquête. Les informations reposent sur une combinaison de l'historique vaccinal, basé sur des preuves documentées ou le rappel des soignants. Les résultats des enquêtes sont considérés pour la cohorte de naissance appropriée en fonction de la période de collecte des données.

ABRÉVIATIONS ET DÉFINITIONS

BCG: pourcentage des naissances ayant reçu une dose du vaccin Bacillus Calmette-Guérin.

DTP1 (DTC1) / DTP3 (DTC3): pourcentage des nourrissons survivants ayant reçu respectivement la 1re / 3e dose du vaccin contenant l'anatoxine diphtérique et tétanique avec la coqueluche.

POL3: pourcentage des nourrissons survivants ayant reçu la 3e dose d'un vaccin contre la poliomyélite, qu'il s'agisse d'un vaccin oral ou inactivé.

IPV1 (VPI1): pourcentage des nourrissons survivants ayant reçu au moins une dose de vaccin antipoliomyélitique inactivé (VPI). Dans les pays suivant un calendrier de vaccination recommandant soit (i) une série primaire de trois doses de vaccin antipoliomyélitique oral (VPO) plus au moins une dose de VPI lorsque le VPO est inclus dans la vaccination systématique et/ou dans les campagnes, soit (ii) un calendrier séquentiel incluant le VPI suivi du VPO, les estimations de l'OMS et de l'UNICEF pour le VPI1 reflètent la couverture par au moins une dose systématique de VPI chez les nourrissons de moins d'un an. Pour les pays utilisant exclusivement le vaccin contenant le VPI, c'est-à-dire sans dose recommandée de VPO, les estimations de l'OMS et de l'UNICEF pour le VPI1 correspondent à la couverture de la 1ère dose de VPI.

La production des estimations de couverture pour le VPI, débutée en 2015, n'entraîne aucun changement dans les niveaux de couverture estimés pour la 3e dose de vaccin antipoliomyélitique (POL3). Pour les pays recommandant la vaccination systématique avec une série primaire de trois doses de VPI uniquement, la couverture POL3 estimée par l'OMS et l'UNICEF est équivalente à la couverture estimée avec trois doses de VPI. Pour les pays suivant un calendrier séquentiel, la couverture POL3 estimée repose sur celle de la 3e dose de vaccin antipoliomyélitique, quel que soit le type de vaccin.

IPV2 (VPI2): pourcentage des nourrissons survivants ayant reçu une 2e dose de vaccin antipoliomyélitique inactivé (VPI). Les estimations de couverture pour le VPI2 sont produites pour les pays utilisant le VPO.

MCV1: pourcentage des nourrissons survivants ayant reçu la 1re dose de vaccin contenant la rougeole. Dans les pays où le calendrier national recommande la 1re dose de MCV à 12 mois ou plus, en fonction de l'épidémiologie de la maladie dans le pays, les estimations de couverture reflètent le pourcentage d'enfants ayant reçu la 1re dose de MCV conformément à la recommandation.

MCV2: pourcentage des enfants ayant reçu la 2e dose de vaccin contenant la rougeole conformément au calendrier vaccinal du pays.

RCV1: pourcentage des nourrissons survivants ayant reçu la 1re dose de vaccin contenant la rubéole. Les estimations de couverture sont basées sur les estimations de l'OMS et de l'UNICEF pour la dose de vaccin contenant la rougeole qui correspond à la première combinaison vaccin rougeole-rubéole. La couverture déclarée au niveau national pour le RCV n'est pas prise en compte dans l'élaboration de cette estimation.

HEPB (VHB): pourcentage des naissances ayant reçu une dose de vaccin contre l'hépatite B dans les 24 heures suivant l'accouchement. Les estimations de la couverture de la dose à la naissance contre l'hépatite B sont produites uniquement pour les pays ayant une politique universelle de dose à la naissance. Aucune estimation n'est réalisée pour les pays qui recommandent une dose à la naissance uniquement pour les nourrissons nés de mères infectées par le virus de l'hépatite B, ou pour les pays où les informations sont insuffisantes pour déterminer si la vaccination a eu lieu dans les 24 heures suivant la naissance.

HEPB3 (VHB3): pourcentage des nourrissons survivants ayant reçu la 3e dose de vaccin contenant l'hépatite B après la dose à la naissance.

HIB3: pourcentage des nourrissons survivants ayant reçu la 3e dose de vaccin contenant Haemophilus influenzae de type b.

ROTAC: pourcentage des nourrissons survivants ayant reçu la dernière dose recommandée du vaccin contre le rotavirus, qui peut être la 2e ou la 3e dose selon le vaccin.

PCV3 (VPC3): pourcentage des nourrissons survivants ayant reçu la 3e dose du vaccin antipneumococcique conjugué. Dans les pays où le calendrier national recommande deux doses pendant la petite enfance et une dose de rappel à 12 mois ou plus en fonction de l'épidémiologie

de la maladie dans le pays, les estimations de couverture peuvent refléter le pourcentage des nourrissons survivants ayant reçu deux doses de VPC avant leur premier anniversaire si la couverture pour la dose de rappel n'est pas déclarée.

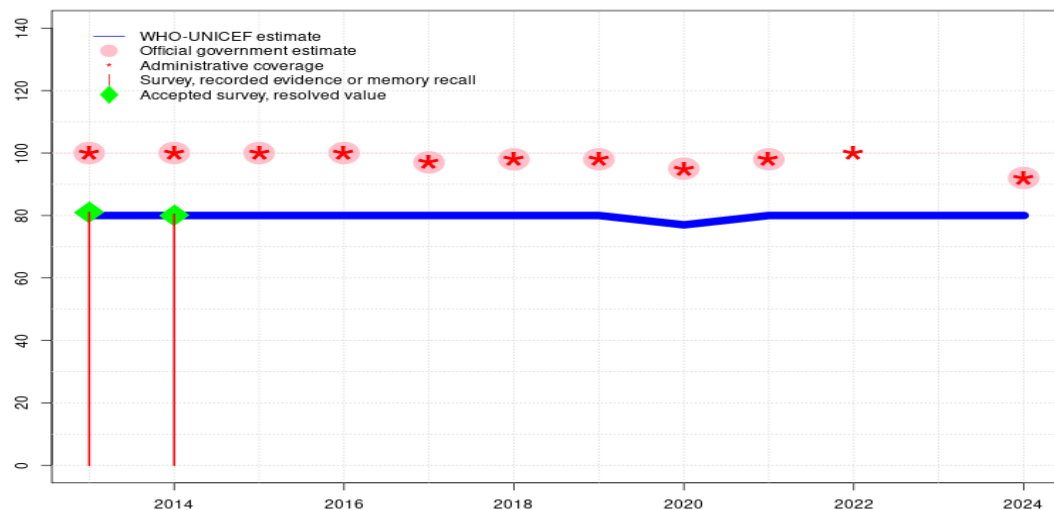
YFV (VFA): pourcentage des nourrissons survivants ayant reçu une dose de vaccin contre la fièvre jaune dans les pays où le VFA fait partie du calendrier national de vaccination des enfants ou est recommandé dans les zones à risque ; les estimations de couverture sont annualisées pour l'ensemble de la cohorte des nourrissons survivants.

MENGA: pourcentage des enfants ayant reçu une dose de vaccin conjugué contre le méningocoque A. Les estimations de couverture MENGA sont produites pour les pays situés dans la ceinture de la méningite en Afrique subsaharienne.

Avertissement: Toutes les précautions raisonnables ont été prises par l'Organisation mondiale de la Santé et le Fonds des Nations Unies pour l'enfance pour vérifier les informations contenues dans cette publication. Toutefois, le matériel publié est distribué sans aucune garantie, explicite ou implicite. La responsabilité de l'interprétation et de l'utilisation du matériel incombe au lecteur. En aucun cas, l'Organisation mondiale de la Santé ou le Fonds des Nations Unies pour l'enfance ne sauraient être tenus responsables des dommages résultant de son utilisation.

Lebanon - HEPBB

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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	80	80	80	80	80	80	80	77	80	80	80	80
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	100	100	100	100	97	98	98	95	98	-	-	92
Administrative	100	100	100	100	97	98	98	95	98	100	-	92
Survey	81	80	-	-	-	-	-	-	-	-	-	-

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

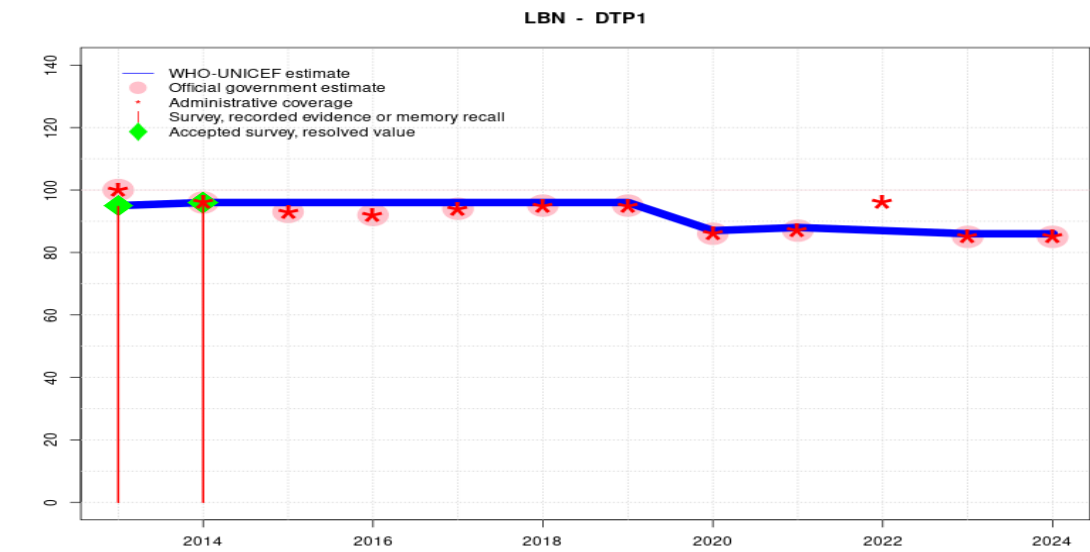
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Reported data calibrated to 2014 levels. Reported data excluded. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Programme reported a one month vaccine stockout at the national and subnational levels. Estimate challenged by: R-
- 2023: Reported data calibrated to 2014 levels. 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. The reported target population decreased by 15 percent between 2018 and 2019. 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. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 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 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 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 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 informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. 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 informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. 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-



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	95	96	96	96	96	96	96	87	88	87	86	86
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	100	96	93	92	94	95	95	86	87	-	85	85
Administrative	100	96	93	92	94	95	95	86	87	96	85	85
Survey	95	96	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Reported data calibrated to 2019 levels. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-
- 2023: Reported data calibrated to 2019 levels. Estimate follows trend in reported data. Estimate of 86 percent changed from previous revision value of 78 percent. Estimate challenged by: R-
- 2022: Reported data calibrated to 2019 levels. Reported data excluded. Programme reports one month vaccine stockout at national and subnational levels. 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 of 87 percent changed from previous revision value of 88 percent. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2019 levels. The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2019 levels. The reported target population decreased by 15 percent between 2018 and 2019. 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 reflects declining trend in reported coverage. Estimate challenged by: D-R-
- 2019: Estimate of 96 percent assigned by working group. Estimate based on extrapolation from 2013 survey result. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 96 percent changed from previous revision value of 93 percent. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 96 percent changed from previous revision value of 93 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate

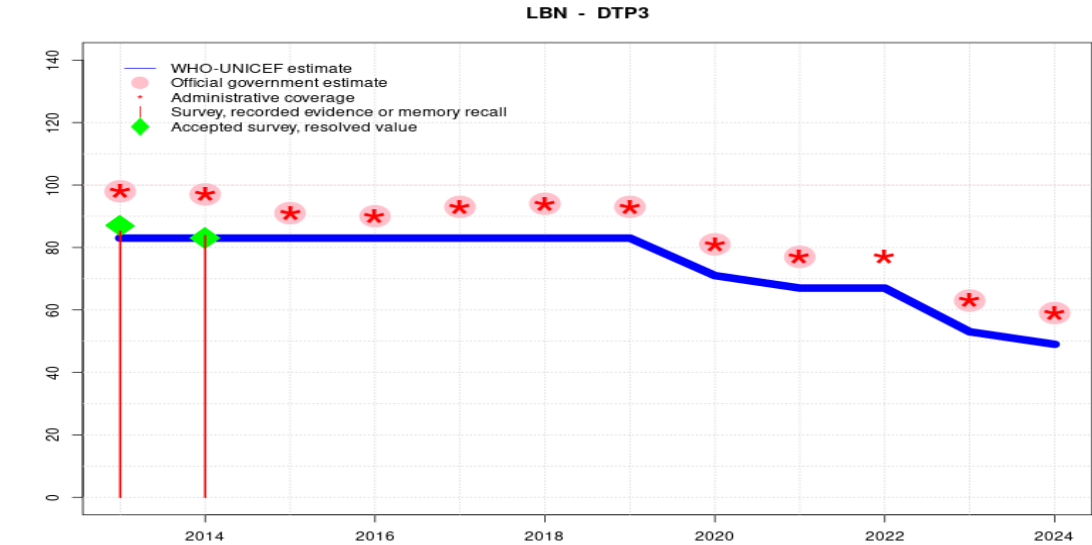
of 96 percent changed from previous revision value of 94 percent. Estimate challenged by: D-R-

2016: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 96 percent changed from previous revision value of 95 percent. Estimate challenged by: D-R-

2015: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 96 percent changed from previous revision value of 95 percent. Estimate challenged by: D-R-

2014: Estimate informed by survey results. 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-

2013: Estimate of 95 percent assigned by working group. Estimate informed by survey results. 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-



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	83	83	83	83	83	83	83	71	67	67	53	49
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	98	97	91	90	93	94	93	81	77	-	63	59
Administrative	98	97	91	90	93	94	93	81	77	77	63	59
Survey	85	84	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

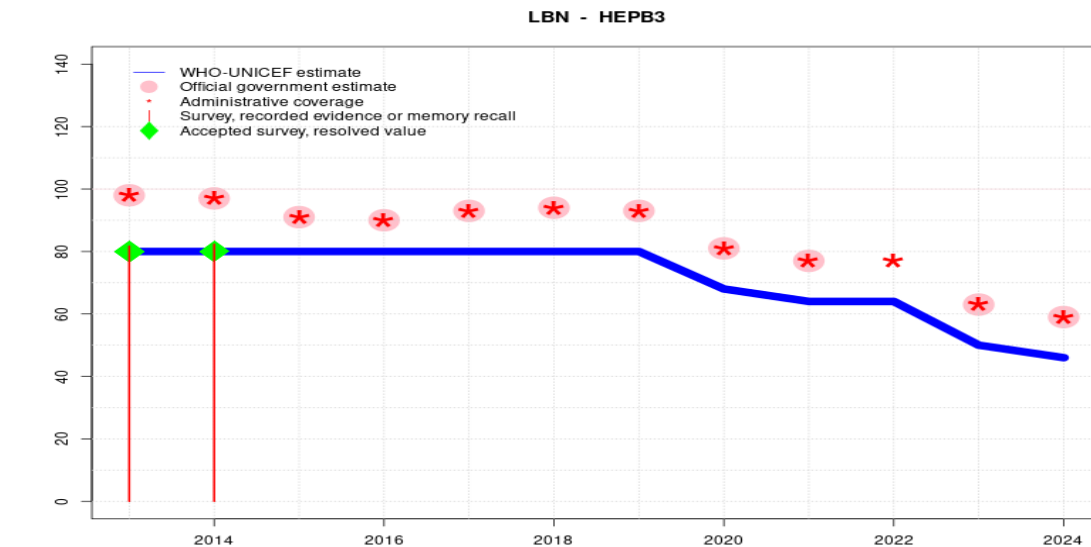
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2024: Reported data calibrated to 2019 levels. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-
- 2023: Reported data calibrated to 2019 levels. Estimate follows trend in reported data. Estimate of 53 percent changed from previous revision value of 55 percent. Estimate challenged by: D-R-
- 2022: Reported data calibrated to 2019 levels. Programme reports one month vaccine stockout at national and subnational levels. 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: Reported data calibrated to 2019 levels. The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2019 levels. The reported target population decreased by 15 percent between 2018 and 2019. 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 reflects declining trend in reported coverage. Estimate challenged by: D-R-
- 2019: Estimate of 83 percent assigned by working group. Estimate based on extrapolation from 2013 survey result. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 83 percent changed from previous revision value of 76 percent. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 83 percent changed from previous revision value of 77 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 83 percent changed from previous revision value of 79 percent. Estimate challenged

- by: D-R-
- 2016: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 83 percent changed from previous revision value of 80 percent. Estimate challenged by: R-
- 2015: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 83 percent changed from previous revision value of 82 percent. Estimate challenged by: R-
- 2014: Estimate of 83 percent assigned by working group. Estimate informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 84 percent modified for recall bias to 83 percent based on 1st dose record or recall coverage of 96 percent, 1st dose record only coverage of 53 percent and 3rd dose record only coverage of 46 percent. 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 informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 85 percent modified for recall bias to 87 percent based on 1st dose record or recall coverage of 95 percent, 1st dose record only coverage of 59 percent and 3rd dose record only coverage of 54 percent. 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-

Lebanon - HEPB3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	80	80	80	80	80	80	80	68	64	64	50	46
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	98	97	91	90	93	94	93	81	77	-	63	59
Administrative	98	97	91	90	93	94	93	81	77	77	63	59
Survey	82	82	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

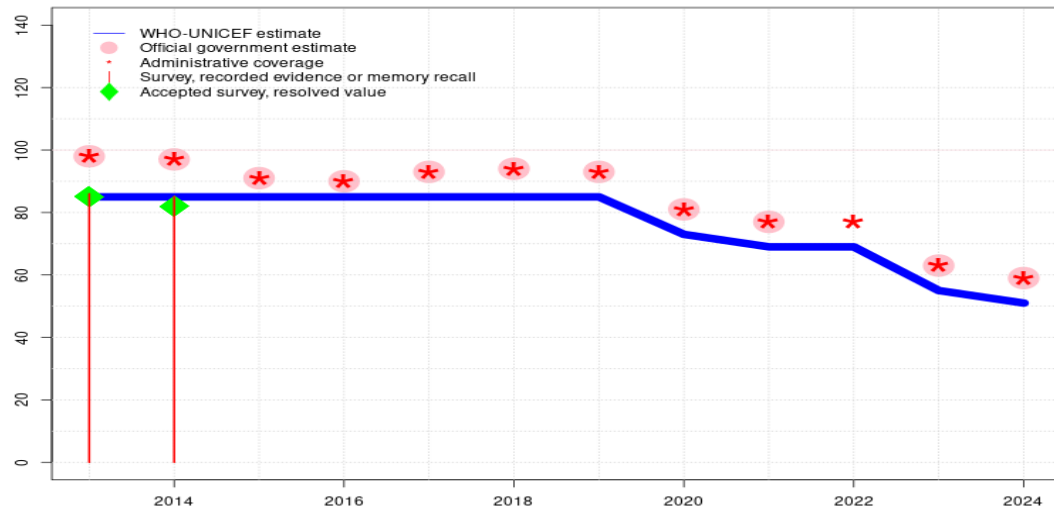
Description:

- 2024: Reported data calibrated to 2019 levels. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-
- 2023: Reported data calibrated to 2019 levels. Estimate follows trend in reported data. Estimate of 50 percent changed from previous revision value of 55 percent. Estimate challenged by: D-R-
- 2022: Reported data calibrated to 2019 levels. 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 of 64 percent changed from previous revision value of 67 percent. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2019 levels. The reported target population is the same for 2019, 2020 and 2021. Estimate of 64 percent changed from previous revision value of 67 percent. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2019 levels. The reported target population decreased by 15 percent between 2018 and 2019. 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 reflects declining trend in reported coverage. Estimate of 68 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-
- 2019: Estimate of 80 percent assigned by working group. Estimate based on extrapolation from 2013 survey result. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 80 percent changed from previous revision value of 74 percent. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 80 percent changed from previous revision value of 75 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data

- not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 80 percent changed from previous revision value of 77 percent. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 78 percent. Estimate challenged by: R-
- 2015: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 80 percent changed from previous revision value of 79 percent. Estimate challenged by: R-
- 2014: Estimate of 80 percent assigned by working group. Estimate informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 82 percent modified for recall bias to 80 percent based on 1st dose record or recall coverage of 95 percent, 1st dose record only coverage of 52 percent and 3rd dose record only coverage of 44 percent. 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 informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 82 percent modified for recall bias to 80 percent based on 1st dose record or recall coverage of 94 percent, 1st dose record only coverage of 59 percent and 3rd dose record only coverage of 50 percent. 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-

Lebanon - HIB3

LBN - HIB3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	85	85	85	85	85	85	85	73	69	69	55	51
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	98	97	91	90	93	94	93	81	77	-	63	59
Administrative	98	97	91	90	93	94	93	81	77	77	63	59
Survey	86	85	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Reported data calibrated to 2019 levels. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-
- 2023: Reported data calibrated to 2019 levels. Estimate follows trend in reported data. Estimate challenged by: R-
- 2022: Reported data calibrated to 2019 levels. 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 of 69 percent changed from previous revision value of 67 percent. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2019 levels. The reported target population is the same for 2019, 2020 and 2021. Estimate of 69 percent changed from previous revision value of 67 percent. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2019 levels. The reported target population decreased by 15 percent between 2018 and 2019. 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 reflects declining trend in reported coverage. Estimate of 73 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-
- 2019: Estimate of 85 percent assigned by working group. Estimate based on extrapolation from 2013 survey result. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 85 percent changed from previous revision value of 78 percent. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 85 percent changed from previous revision value of 79 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate

of 85 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-

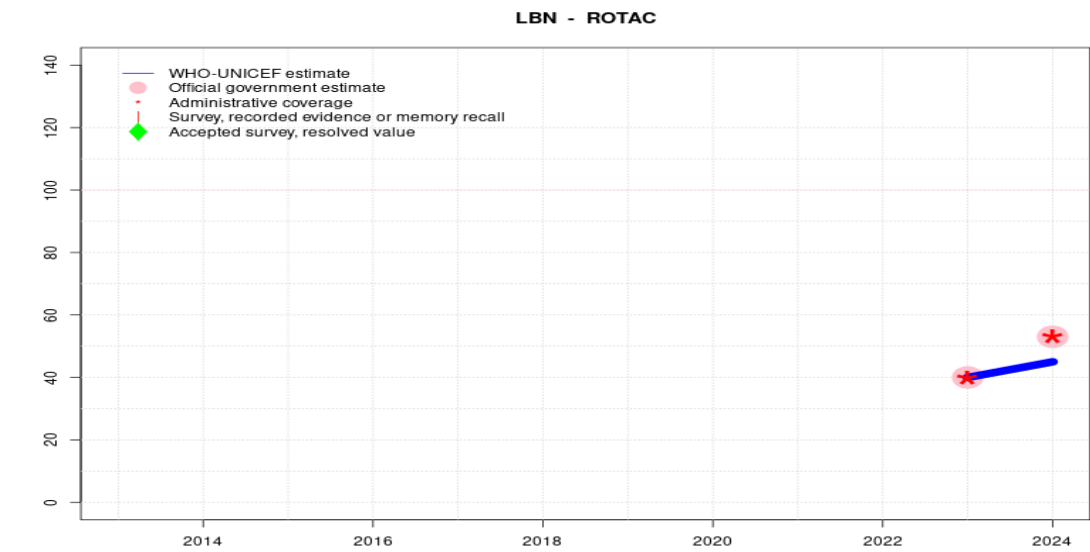
2016: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Government of Lebanon does not concur with the WHO and UNICEF estimates of vaccination coverage. Beginning in 2015 a stream of 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 85 percent changed from previous revision value of 82 percent. Estimate challenged by: R-

2015: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 85 percent changed from previous revision value of 84 percent. Estimate challenged by: R-

2014: Estimate of 85 percent assigned by working group. Estimate informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 85 percent modified for recall bias to 82 percent based on 1st dose record or recall coverage of 95 percent, 1st dose record only coverage of 53 percent and 3rd dose record only coverage of 46 percent. 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 informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 86 percent modified for recall bias to 85 percent based on 1st dose record or recall coverage of 93 percent, 1st dose record only coverage of 59 percent and 3rd dose record only coverage of 54 percent. 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-

Lebanon - ROTAC



Description:

2024: Estimate is based on the relationship between reported number of doses for DTP3 and ROTAC applied to the DTP3 estimated coverage. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-

2023: Estimate informed by reported data. Rotavirus vaccine introduced in November 2022 and reporting started in 2023. GoC=R+ D+

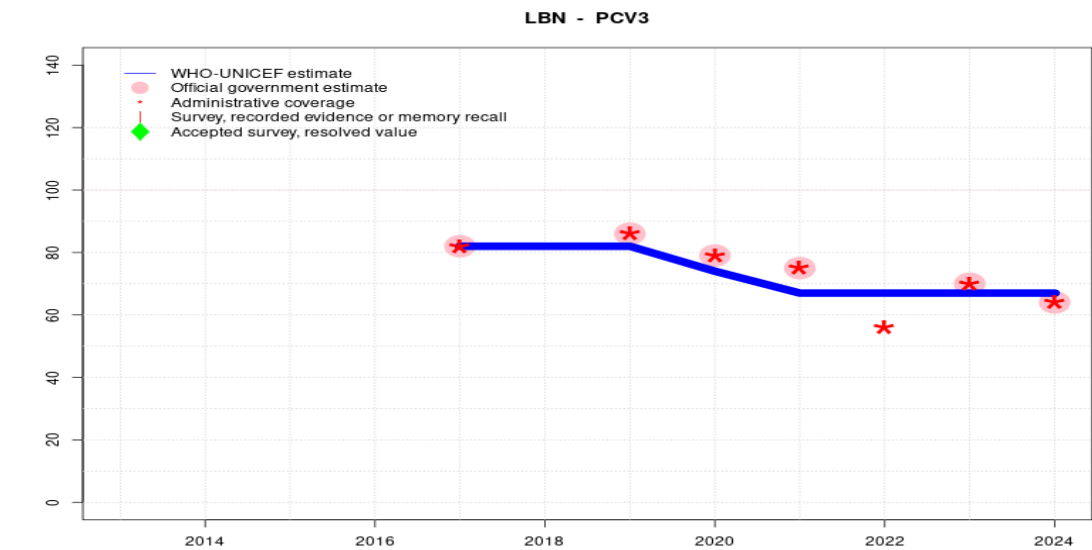
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	-	-	-	-	-	-	-	-	40	45
Estimate GoC	-	-	-	-	-	-	-	-	-	-	••	•
Official	-	-	-	-	-	-	-	-	-	-	40	53
Administrative	-	-	-	-	-	-	-	-	-	-	40	53
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Lebanon - PCV3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	-	-	82	82	82	74	67	67	67	67
Estimate GoC	-	-	-	-	●	●	●	●	●	●	●	●
Official	-	-	-	-	82	-	86	79	75	-	70	64
Administrative	-	-	-	-	82	-	86	79	75	56	70	64
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2024: Estimate is based on the estimated MCV1 (MMR1) level as PCV3 is recommended at the same age. The estimated coverage may represent an overestimation and the reported number of PCV3 is lower than those for MCV1. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-

2023: Estimate is based on the estimated MCV1 (MMR1) level as PCV3 is recommended at the same age. The estimated coverage may represent an overestimation and the reported number of PCV3 is lower than those for MCV1. Estimate of 67 percent changed from previous revision value of 65 percent. Estimate challenged by: R-

2022: Estimate is based on the estimated MCV1 (MMR1) level as PCV3 is recommended at the same age. The estimated coverage may represent an overestimation and the reported number of PCV3 is lower than those for MCV1. Reported data excluded due to decline in reported coverage from 75 percent to 56 percent with increase to 70 percent. 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 of 67 percent changed from previous revision value of 70 percent. Estimate challenged by: R-

2021: Estimate is based on the estimated MCV1 (MMR1) level as PCV3 is recommended at the same age. The estimated coverage may represent an overestimation and the reported number of PCV3 is lower than those for MCV1. The reported target population is the same for 2019, 2020 and 2021. Estimate of 67 percent changed from previous revision value of 70 percent. 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. The reported target population decreased by 15 percent between 2018 and 2019. 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-

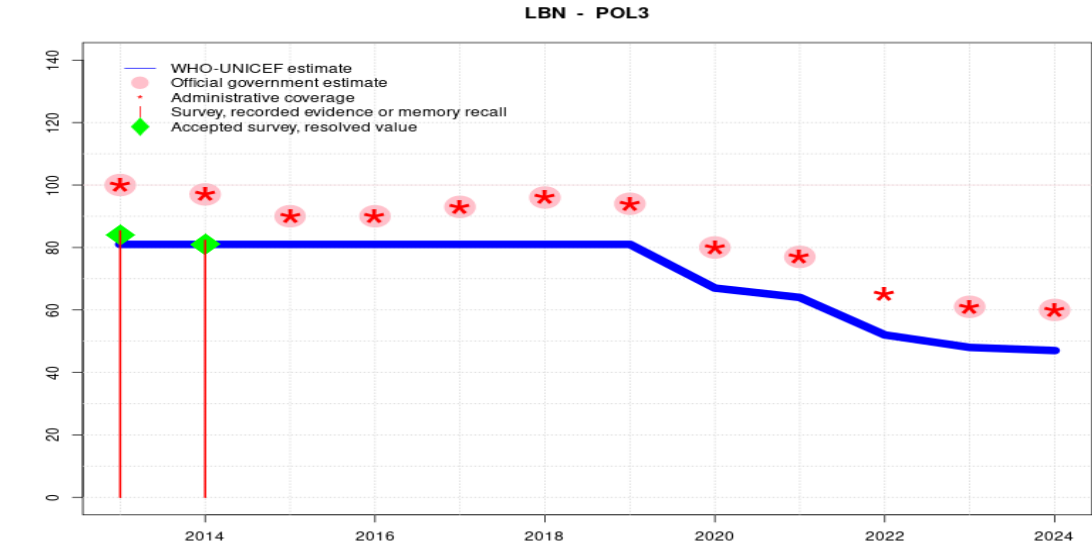
2019: Estimate based on MCV1 because both vaccines are recommended at the same age. The reported target population decreased by 15 percent between 2018 and 2019. Programme notes ongoing challenges with regards to accurate monitoring of the number of children vaccinated as well as the target population. Administrative data are collected from the public sector, while for private providers the numerator is estimated from vaccine pur-

Lebanon - PCV3

chase 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. 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 EPI coverage evaluation survey results across all vaccines. Pneumococcal conjugate vaccine introduced in 2015. Reporting started in 2017. Estimate based on MCV2 because both vaccines are recommended at the same age. Estimate challenged by: D-R-



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	81	81	81	81	81	81	81	67	64	52	48	47
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	100	97	90	90	93	96	94	80	77	-	61	60
Administrative	100	97	90	90	93	96	94	80	77	65	61	60
Survey	85	82	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

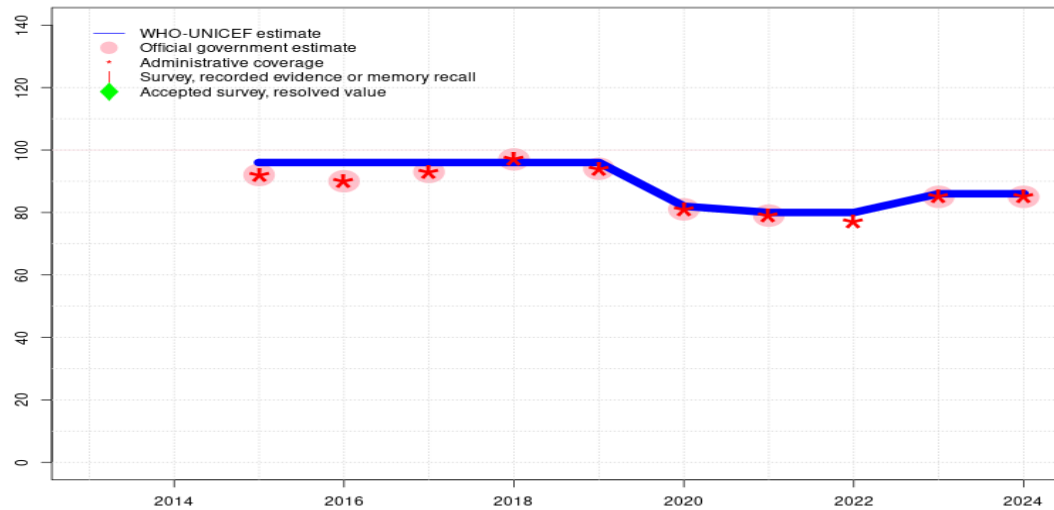
Description:

- 2024: Reported data calibrated to 2019 levels. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-
- 2023: Reported data calibrated to 2019 levels. Estimate of 48 percent changed from previous revision value of 55 percent. Estimate challenged by: D-R-
- 2022: Reported data calibrated to 2019 levels. 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 of 52 percent changed from previous revision value of 64 percent. Estimate challenged by: D-R-
- 2021: Reported data calibrated to 2019 levels. The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2019 levels. The reported target population decreased by 15 percent between 2018 and 2019. 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 reflects declining trend in reported coverage. Estimate challenged by: D-R-
- 2019: Estimate of 81 percent assigned by working group. Estimate based on extrapolation from 2013 survey result. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 81 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 81 percent changed from previous revision value of 75 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 81 percent changed from previous revision value of 76 percent. Estimate challenged by: D-R-

- 2016: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 78 percent. Estimate challenged by: R-
- 2015: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 81 percent changed from previous revision value of 79 percent. Estimate challenged by: R-
- 2014: Estimate of 81 percent assigned by working group. Estimate informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 82 percent modified for recall bias to 81 percent based on 1st dose record or recall coverage of 95 percent, 1st dose record only coverage of 53 percent and 3rd dose record only coverage of 45 percent. 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 informed by survey results for the 2014 cohort as this is the youngest cohort in the survey. Lebanon District-Based Immunization Coverage Cluster Survey 2016 record or recall results of 85 percent modified for recall bias to 84 percent based on 1st dose record or recall coverage of 95 percent, 1st dose record only coverage of 60 percent and 3rd dose record only coverage of 53 percent. 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-

Lebanon - IPV1

LBN - IPV1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	96	96	96	96	96	82	80	80	86	86
Estimate GoC	-	-	●	●	●	●	●	●	●	●	●	●
Official	-	-	92	90	93	97	94	81	79	-	85	85
Administrative	-	-	92	90	93	97	94	81	79	77	85	85
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Estimate based on estimated DTP1. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-
- 2023: Estimate based on estimated DTP1. Estimate of 86 percent changed from previous revision value of 80 percent. Estimate challenged by: R-
- 2022: Estimate informed by prior year estimated value. 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. 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 decreased by 15 percent between 2018 and 2019. 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 informed by estimated DTP1 level. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate challenged by: D-R-
- 2018: Estimate based on DTP1 coverage estimate. Reported data excluded. Reported data not consistent with 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 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 EPI coverage evaluation survey results across all vaccines. Government

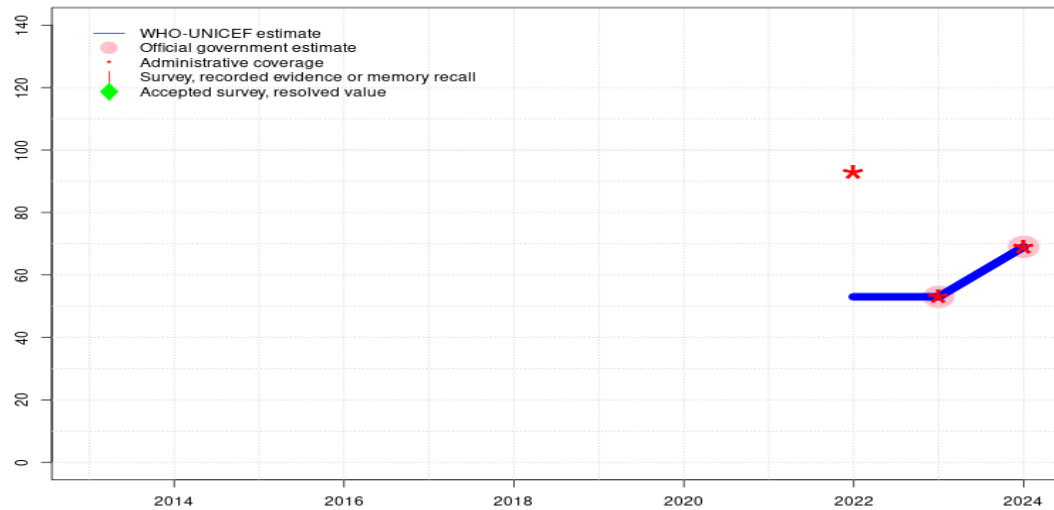
Lebanon - IPV1

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 in 2011. Estimate based on DTP1 coverage level. Reported data excluded. Reported data not consistent with 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

LBN - IPV2



Description:

- 2024: Estimate informed by reported data. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. GoC=R+ D+
- 2023: Estimate informed by reported data. Estimate of 53 percent changed from previous revision value of 80 percent. GoC=R+ D+
- 2022: Estimate informed by extrapolation from reported data. Reported data excluded. IPV2 reported as introduced in 2023, but reporting started in 2022. Reported coverage inconsistent with timing of introduction and subsequent years reporting. 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 of 53 percent changed from previous revision value of 80 percent. Estimate challenged by: D-

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	-	-	-	-	-	-	-	53	53	69
Estimate GoC	-	-	-	-	-	-	-	-	-	●	●●	●●
Official	-	-	-	-	-	-	-	-	-	-	53	69
Administrative	-	-	-	-	-	-	-	-	-	93	53	69
Survey	-	-	-	-	-	-	-	-	-	-	-	-

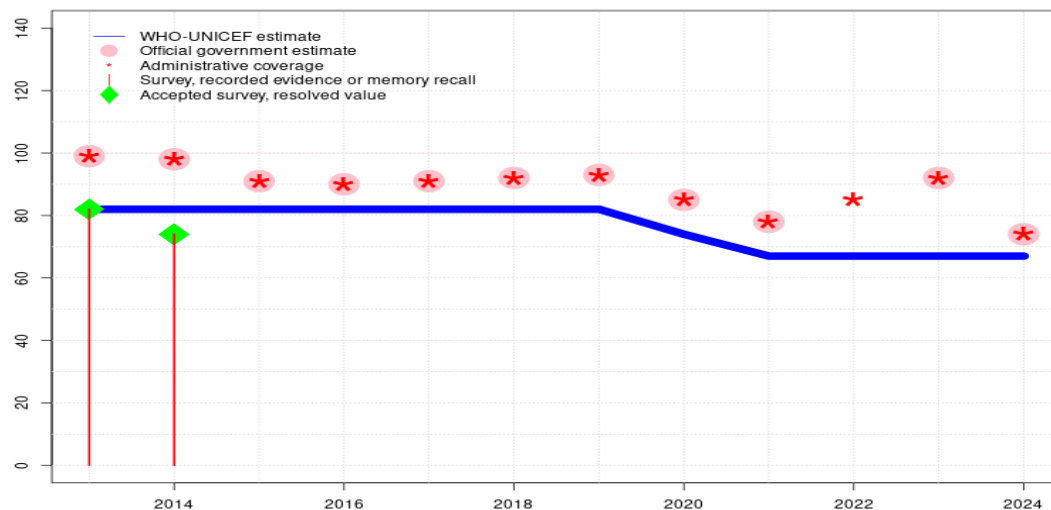
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Lebanon - MCV1

LBN - MCV1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	82	82	82	82	82	82	82	74	67	67	67	67
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	99	98	91	90	91	92	93	85	78	-	92	74
Administrative	99	98	91	90	91	92	93	85	78	85	92	74
Survey	82	74	-	-	-	-	-	-	-	-	-	-

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

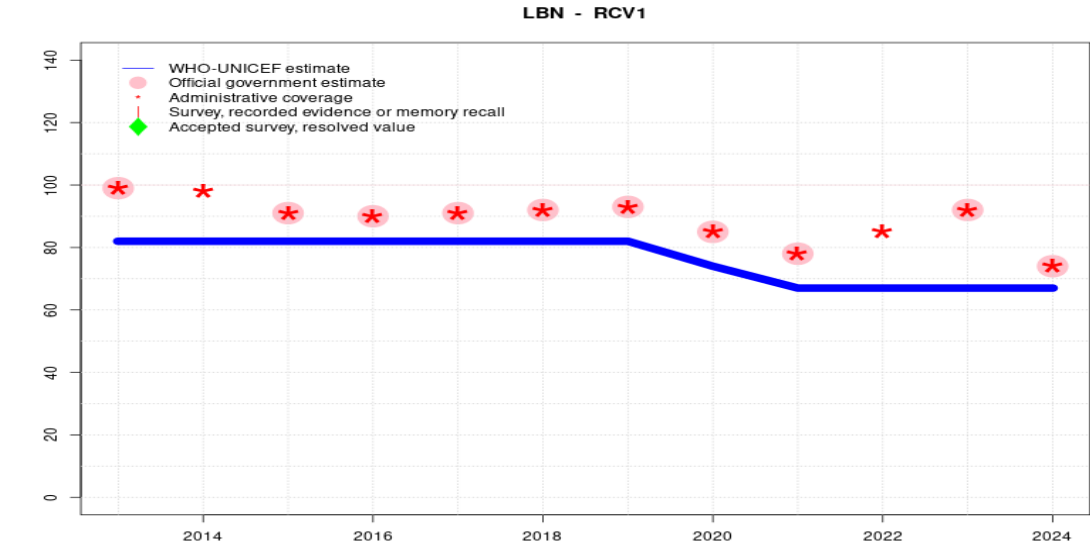
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Reported data calibrated to 2019 levels. Reported data excluded. Reported data excluded due to sudden change in coverage from 92 to 74 percent. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-
- 2023: Reported data calibrated to 2019 levels. Reported data excluded. Estimate of 67 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-
- 2022: Reported data calibrated to 2019 levels. Reported data excluded. Programme reports two months vaccine stockout at national and subnational levels. 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: Reported data calibrated to 2019 levels. The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-
- 2020: Reported data calibrated to 2019 levels. The reported target population decreased by 15 percent between 2018 and 2019. 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 reflects declining trend in reported coverage. Estimate challenged by: D-R-
- 2019: Estimate of 82 percent assigned by working group. Estimate based on extrapolation from 2013 survey result. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 82 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 82 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-
- 2017: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate

- of 82 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-
- 2016: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 81 percent. Estimate challenged by: R-
- 2015: Reported data calibrated to 2014 and 2019 levels. Reported data excluded. Reported data not consistent with 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 informed by survey results for the 2013 cohort. 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 informed by survey results for the 2013 cohort. 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-



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	82	82	82	82	82	82	82	74	67	67	67	67
Estimate GoC	●	●	●	●	●	●	●	●	●	●	●	●
Official	99	-	91	90	91	92	93	85	78	-	92	74
Administrative	99	98	91	90	91	92	93	85	78	85	92	74
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Estimate based on estimated MCV1. Reported data excluded due to sudden change in coverage from 92 to 74 percent. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: R-
- 2023: Estimate based on estimated MCV1. Estimate of 67 percent changed from previous revision value of 73 percent. Estimate challenged by: D-R-
- 2022: Estimate based on estimated MCV1. 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: Estimate based on estimated MCV1. The reported target population is the same for 2019, 2020 and 2021. Estimate challenged by: D-R-
- 2020: Estimate based on estimated MCV1. The reported target population decreased by 15 percent between 2018 and 2019. 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 estimated MCV1. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate of 82 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-
- 2018: Estimate based on estimated MCV1. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 82 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-
- 2017: Estimate based on estimated MCV1. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Estimate of 82 percent changed from previous revision value of 81 percent. Estimate challenged by: D-R-
- 2016: Estimate based on estimated MCV1. Reported data excluded. Reported data not consistent with 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 81 percent. Estimate challenged by: R-

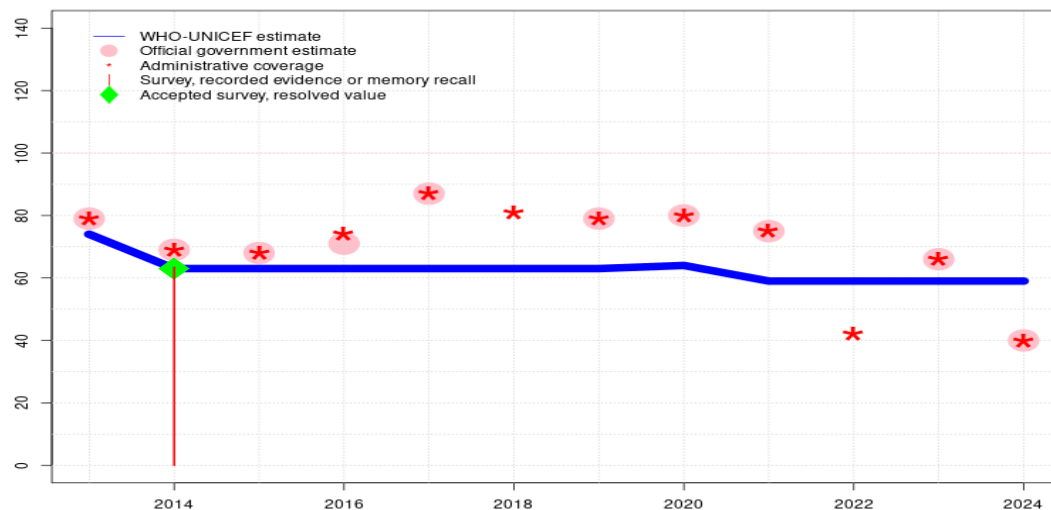
2015: Estimate based on estimated MCV1. Reported data excluded. Reported data not consistent with EPI coverage evaluation survey results across all vaccines. Government reports target population estimates reflect estimated number of Lebanese and non-Lebanese children. Programme also reports increases in number of children vaccinated. Estimate challenged by: R-

2014: Estimate 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-

Lebanon - MCV2

LBN - MCV2



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	74	63	63	63	63	63	63	64	59	59	59	59
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	79	69	68	71	87	-	79	80	75	-	66	40
Administrative	79	69	68	74	87	81	79	80	75	42	66	40
Survey	-	63	-	-	-	-	-	-	-	-	-	-

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2024: Unexplained fluctuations in reported coverage. Reported data excluded due to sudden change in coverage from 66 to 40 percent. Caution should be used when interpreting the data, as the trend seen for DTP1 vs. later doses would suggest a large increase in drop-out in recent years. WHO and UNICEF are aware of an ongoing 2023 Multiple Indicator Cluster Survey and await the final results. Estimate challenged by: D-R-
- 2023: Unexplained fluctuations in reported coverage. Reported data excluded due to an increase from 42 percent to 66 percent with decrease to 40 percent. Estimate of 59 percent changed from previous revision value of 53 percent. Estimate challenged by: R-
- 2022: Unexplained fluctuations in reported coverage. Reported data excluded. 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. 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: 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. The reported target population decreased by 15 percent between 2018 and 2019. 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. The reported target population decreased by 15 percent between 2018 and 2019. 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. Estimate challenged by: D-R-
- 2018: Reported data calibrated to 2014 levels. Reported data excluded. Reported data not consistent with 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 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 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 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 informed by survey results. 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. 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 of 74 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-S-

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 one or two years prior to the survey field work.

The survey results below present vaccination coverage estimates by antigen, confirmation method, and child's age at the time of the survey. Coverage based on **Recall** reflects information based upon a mother's or caregiver's memory. Coverage based on **Record** reflects information drawn from documented vaccination history in home- and/or facility-based records. **Evidence seen** reflects the percentage of children in the sample with documented evidence of vaccination history seen by the survey team.

2014 Lebanon District-Based Immunization Coverage Cluster Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Recall	43.2	12-23 m	9560	64
DTP1	Record	52.7	12-23 m	9560	64
DTP1	Record or Recall	95.9	12-23 m	9560	64
DTP3	Recall	38.1	12-23 m	9560	64
DTP3	Record	45.7	12-23 m	9560	64
DTP3	Record or Recall	83.8	12-23 m	9560	64
HEPB1	Recall	42.6	12-23 m	9560	64
HEPB1	Record	52.4	12-23 m	9560	64
HEPB1	Record or Recall	95	12-23 m	9560	64
HEPB3	Recall	38.7	12-23 m	9560	64
HEPB3	Record	43.6	12-23 m	9560	64
HEPB3	Record or Recall	82.3	12-23 m	9560	64
HEPBB	Recall	37.2	12-23 m	9560	64
HEPBB	Record	43.2	12-23 m	9560	64
HEPBB	Record or Recall	80.4	12-23 m	9560	64
HIB1	Recall	42.7	12-23 m	9560	64
HIB1	Record	52.6	12-23 m	9560	64
HIB1	Record or Recall	95.3	12-23 m	9560	64
HIB3	Recall	39.4	12-23 m	9560	64

HIB3	Record	45.7	12-23 m	9560	64
HIB3	Record or Recall	85.1	12-23 m	9560	64
MCV1	Recall	32.2	12-23 m	9560	64
MCV1	Record	41.7	12-23 m	9560	64
MCV1	Record or Recall	74	12-23 m	9560	64
MCV2	Recall	24.7	12-23 m	9560	64
MCV2	Record	23.8	12-23 m	9560	64
MCV2	Record or Recall	63.4	24-35 m	9560	-
POL1	Recall	42.2	12-23 m	9560	64
POL1	Record	53.1	12-23 m	9560	64
POL1	Record or Recall	95.3	12-23 m	9560	64
POL3	Recall	37.5	12-23 m	9560	64
POL3	Record	44.8	12-23 m	9560	64
POL3	Record or Recall	82.3	12-23 m	9560	64

2013 Lebanon District-Based Immunization Coverage Cluster Survey 2016

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Recall	35.6	24-35 m	9560	-
DTP1	Record	59.1	24-35 m	9560	-
DTP1	Record or Recall	94.7	24-35 m	9560	-
DTP3	Recall	31.4	24-35 m	9560	-
DTP3	Record	53.8	24-35 m	9560	-
DTP3	Record or Recall	85.2	24-35 m	9560	-
HEPB1	Recall	35.1	24-35 m	9560	-
HEPB1	Record	58.8	24-35 m	9560	-
HEPB1	Record or Recall	93.9	24-35 m	9560	-
HEPB3	Recall	31.8	24-35 m	9560	-
HEPB3	Record	49.9	24-35 m	9560	-
HEPB3	Record or Recall	81.7	24-35 m	9560	-
HEPBB	Recall	31.1	24-35 m	9560	-
HEPBB	Record	49.9	24-35 m	9560	-
HEPBB	Record or Recall	81	24-35 m	9560	-
HIB1	Recall	34.4	24-35 m	9560	-
HIB1	Record	58.6	24-35 m	9560	-
HIB1	Record or Recall	93	24-35 m	9560	-
HIB3	Recall	32.2	24-35 m	9560	-
HIB3	Record	53.8	24-35 m	9560	-
HIB3	Record or Recall	86	24-35 m	9560	-

Lebanon - Survey Details

MCV1	Recall	27.9	24-35 m	9560	-
MCV1	Record	54.1	24-35 m	9560	-
MCV1	Record or Recall	82	24-35 m	9560	-
MCV2	Recall	23.7	24-35 m	9560	-
MCV2	Record	39.7	24-35 m	9560	-
POL1	Recall	34.8	24-35 m	9560	-
POL1	Record	60	24-35 m	9560	-
POL1	Record or Recall	94.8	24-35 m	9560	-
POL3	Recall	31.9	24-35 m	9560	-
POL3	Record	53.4	24-35 m	9560	-
POL3	Record or Recall	85.3	24-35 m	9560	-

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

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP3	Record	90	12-59 m	5303	61
HEPB3	Record	93	12-59 m	5303	61
HEPBB	Record	90	12-59 m	5303	61
HIB3	Record	89	12-59 m	5303	61
MCV1	Record	89	12-59 m	5303	61
MCV2	Record	62	12-59 m	5303	61
POL3	Record	89	12-59 m	5303	61

2008 Lebanon Multiple Indicator Cluster Survey 2009

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Recall	32.9	12-23 m	626	55
DTP1	Record	51.2	12-23 m	626	55
DTP1	Record or Recall	84.1	12-23 m	626	55
DTP1	Record or Recall<12m	83.2	12-23 m	626	55
DTP3	Recall	23.4	12-23 m	626	55
DTP3	Record	48.6	12-23 m	626	55
DTP3	Record or Recall	72	12-23 m	626	55
DTP3	Record or Recall<12m	70.6	12-23 m	626	55
HEPB1	Recall	32.9	12-23 m	626	55
HEPB1	Record	51.2	12-23 m	626	55

HEPB1	Record or Recall	84.1	12-23 m	626	55
HEPB1	Record or Recall<12m	83.2	12-23 m	626	55
HEPB3	Recall	23.4	12-23 m	626	55
HEPB3	Record	48.6	12-23 m	626	55
HEPB3	Record or Recall	72	12-23 m	626	55
HEPB3	Record or Recall<12m	70.6	12-23 m	626	55
HEPBB	Recall	39.4	12-23 m	626	55
HEPBB	Record	51.4	12-23 m	626	55
HEPBB	Record or Recall	90.8	12-23 m	626	55
HEPBB	Record or Recall<12m	90.8	12-23 m	626	55
HIB1	Recall	32.9	12-23 m	626	55
HIB1	Record	51.2	12-23 m	626	55
HIB1	Record or Recall	84.1	12-23 m	626	55
HIB1	Record or Recall<12m	83.2	12-23 m	626	55
HIB3	Recall	23.4	12-23 m	626	55
HIB3	Record	48.6	12-23 m	626	55
HIB3	Record or Recall	72	12-23 m	626	55
HIB3	Record or Recall<12m	70.6	12-23 m	626	55
MCV1	Recall	34.8	12-23 m	626	55
MCV1	Record	43.8	12-23 m	626	55
MCV1	Record or Recall	78.6	12-23 m	626	55
MCV1	Record or Recall<12m	70.9	12-23 m	626	55
POL1	Recall	32.6	12-23 m	626	55
POL1	Record	53.3	12-23 m	626	55
POL1	Record or Recall	85.9	12-23 m	626	55
POL1	Record or Recall<12m	85.3	12-23 m	626	55
POL3	Recall	27.8	12-23 m	626	55
POL3	Record	46.1	12-23 m	626	55
POL3	Record or Recall	73.9	12-23 m	626	55
POL3	Record or Recall<12m	72.4	12-23 m	626	55

2003 Lebanon Family Health Survey (PAPFAM) 2004

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Record or Recall	83.3	12-23 m	3365	62
DTP3	Record or Recall	74.4	12-23 m	3365	62
MCV1	Record or Recall	53.4	12-23 m	3365	62
POL1	Record or Recall	83.3	12-23 m	3365	62
POL3	Record or Recall	74.4	12-23 m	3365	62

YFV	Record or Recall	50.4	12-23 m	3365	62						
1999 Preliminary Report on the Multiple Cluster Survey on the Situation of Children in Lebanon, 2001						Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
						DTP3	Record or Recall	90.1	12-23 m	-	59
						MCV1	Record or Recall	88	12-23 m	-	59
						POL3	Record or Recall	90.1	12-23 m	-	59

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