

Luxembourg: 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 (VHBN): 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

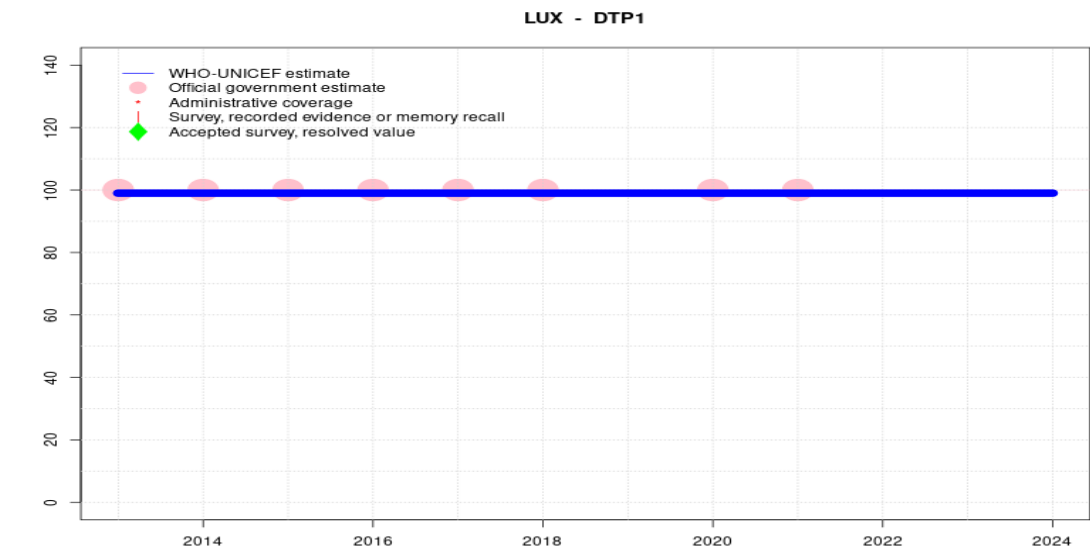
de la maladie dans le pays, les estimations de couverture peuvent refléter le pourcentage des nourrissons survivants ayant reçu deux doses de VPC avant leur premier anniversaire si la couverture pour la dose de rappel n'est pas déclarée.

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.

Luxembourg - DTP1



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●	●●	●●	●	●	●
Official	100	100	100	100	100	100	-	100	100	-	-	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
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.

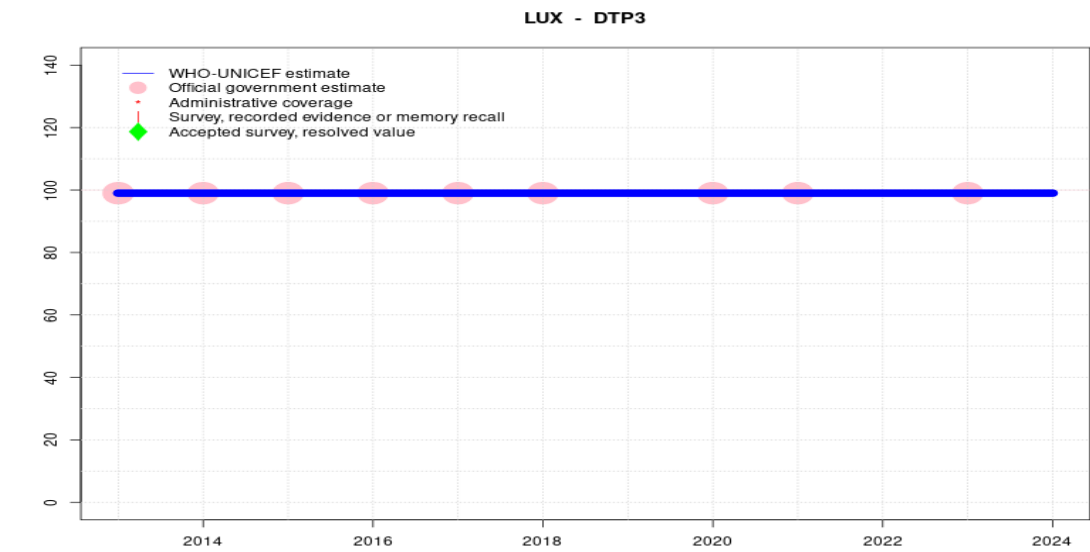
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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: Reported data calibrated to 1997 levels. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Reported data calibrated to 1997 levels. Finalized and validated coverage survey result of 100 percent. GoC=No accepted empirical data
- 2022: Reported data calibrated to 1997 levels. GoC=No accepted empirical data
- 2021: Reported data calibrated to 1997 levels. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2020: Reported data calibrated to 1997 levels. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2019: Reported data calibrated to 1997 levels. GoC=No accepted empirical data
- 2018: Reported data calibrated to 1997 levels. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2017: Reported data calibrated to 1997 levels. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2016: Reported data calibrated to 1997 levels. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2015: Reported data calibrated to 1997 levels. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 100 percent. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2014: Reported data calibrated to 1997 levels. GoC=Assigned by working group. Consistency across antigens. GoC=R+
- 2013: Reported data calibrated to 1997 levels. GoC=Assigned by working group. Consistency across antigens. GoC=R+

Luxembourg - DTP3



Description:

- 2024: Estimate based on extrapolation from data reported by national government. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by reported data. Finalized and validated coverage survey result of 98.9 percent. GoC=R+
- 2022: Estimate informed by interpolation between reported data. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by interpolation between reported data. GoC=No accepted empirical data
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 99 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

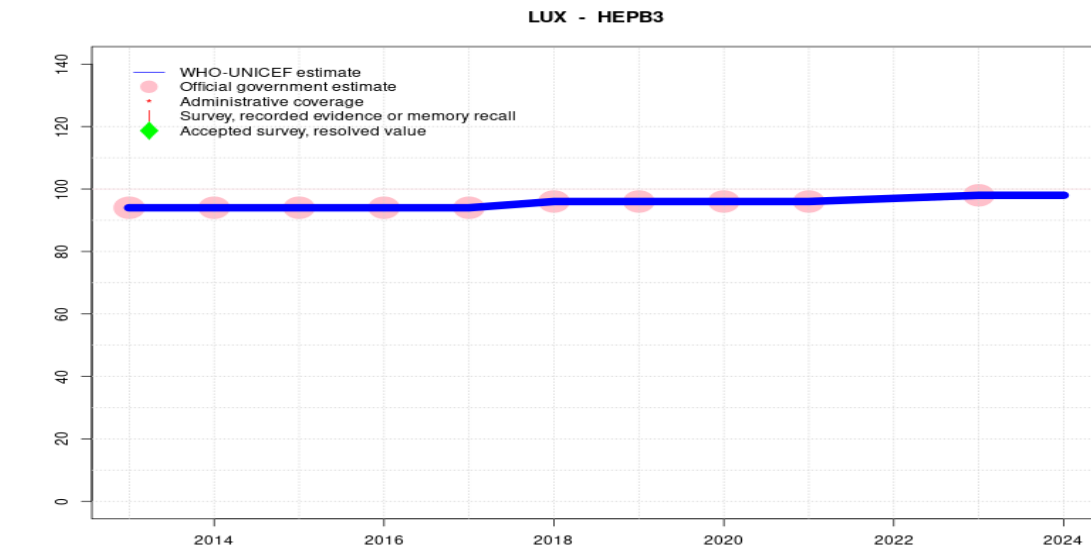
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●	●●	●●	●	●●	●
Official	99	99	99	99	99	99	-	99	99	-	99	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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.
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Luxembourg - HEPB3



Description:

- 2024: Estimate based on extrapolation from data reported by national government. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by reported data. Finalized and validated coverage survey result of 98 percent. Estimate of 98 percent changed from previous revision value of 96 percent. GoC=R+
- 2022: Estimate informed by interpolation between reported data. Estimate of 97 percent changed from previous revision value of 96 percent. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by reported data. GoC=R+
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 99 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

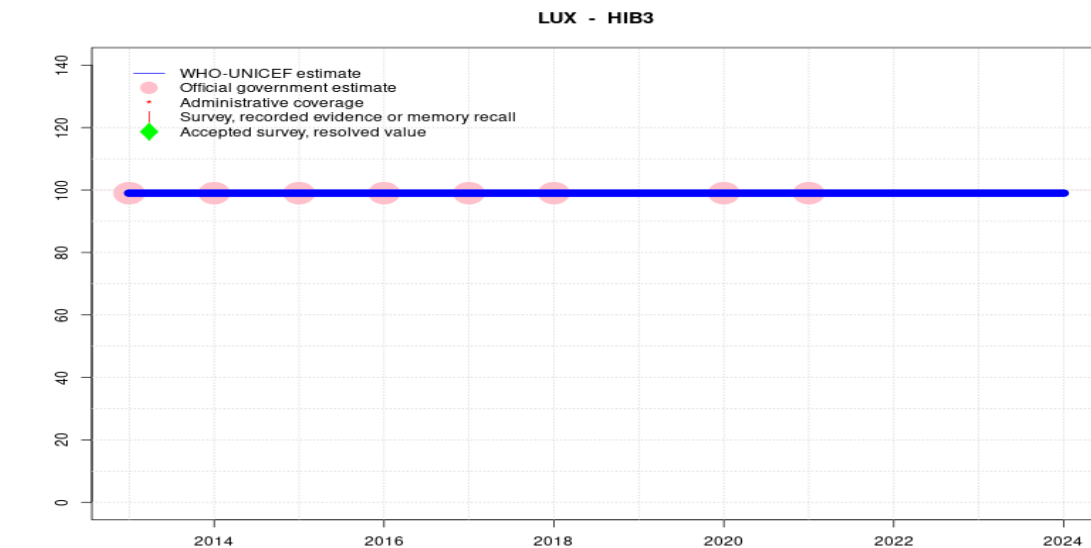
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	94	94	94	94	94	96	96	96	96	97	98	98
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●●	●
Official	94	94	94	94	94	96	96	96	96	-	98	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
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Luxembourg - Hib3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	99	99	99	99	99	99	99	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●	●●	●●	●	●	●
Official	99	99	99	99	99	99	-	99	99	-	-	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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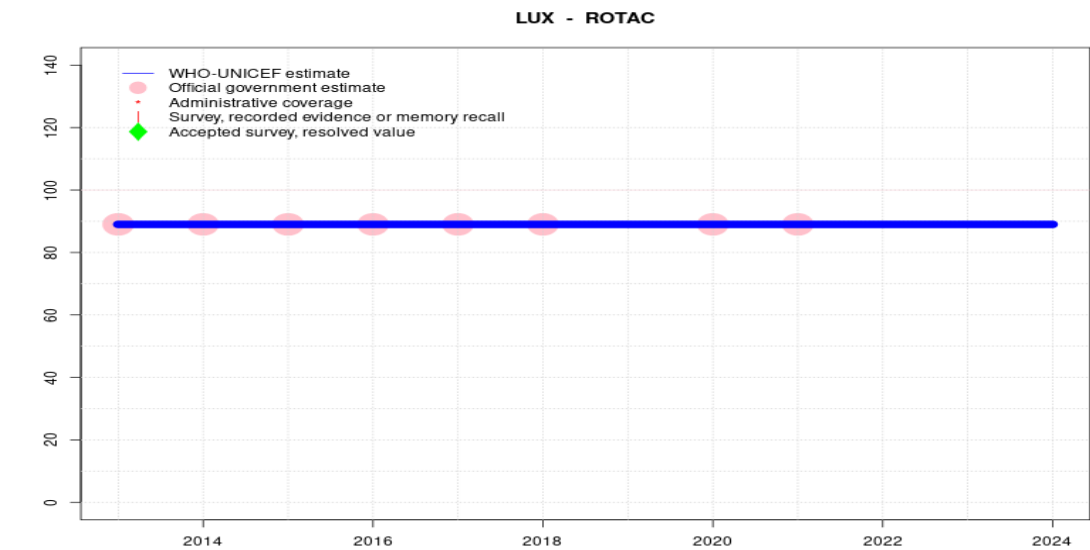
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- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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- 2023: Estimate based on extrapolation from data reported by national government. Finalized and validated coverage survey result of 98.9 percent. GoC=No accepted empirical data
- 2022: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
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- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 98 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

Luxembourg - ROTAC



Description:

- 2024: Estimate informed by extrapolation from reported data. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by extrapolation from reported data. Finalized and validated coverage survey result of 93.4 percent. GoC=No accepted empirical data
- 2022: Estimate informed by extrapolation from reported data. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by interpolation between reported data. GoC=No accepted empirical data
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 89 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

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

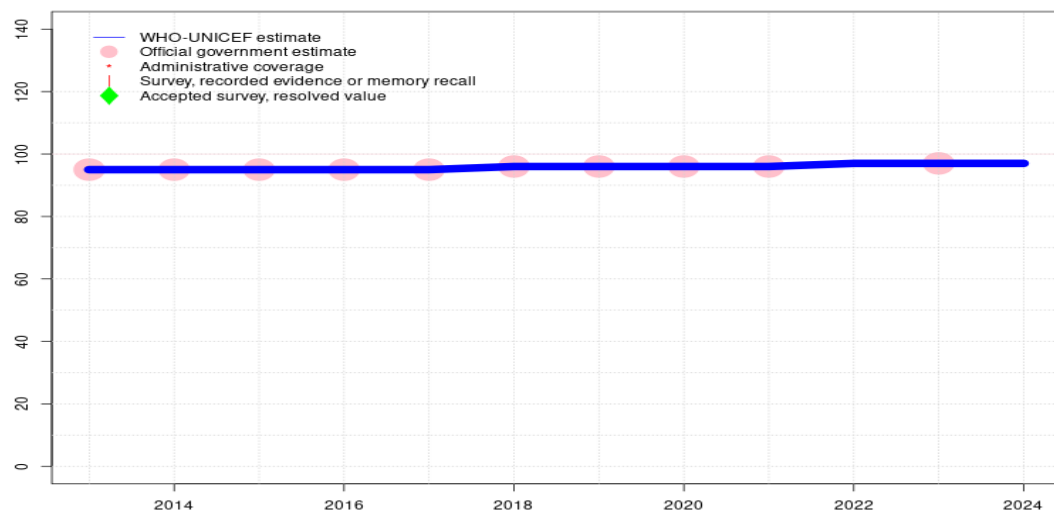
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Luxembourg - PCV3

LUX - PCV3



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

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

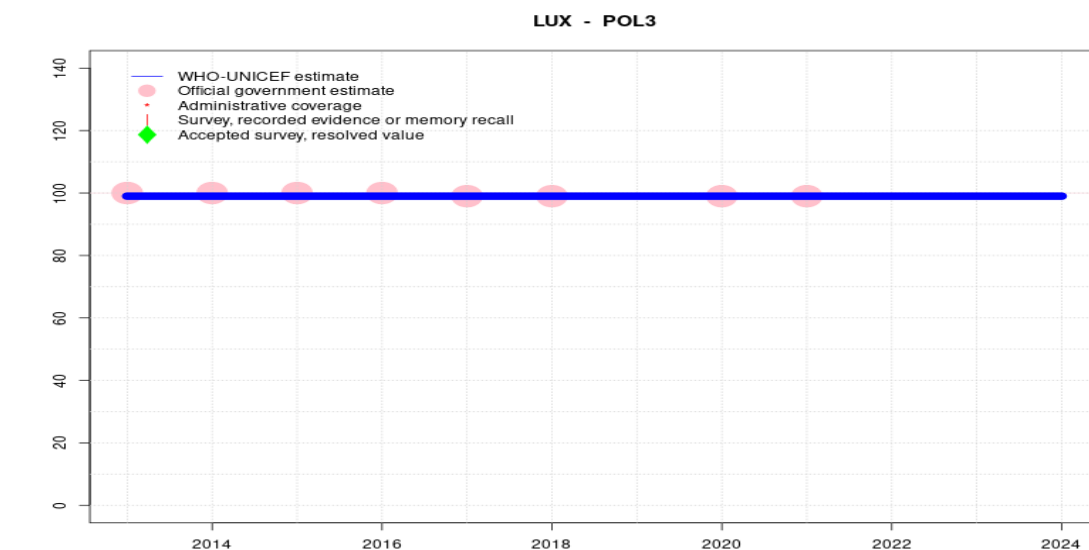
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2024 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

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

Description:

- 2024: Estimate informed by extrapolation from reported data. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by reported data. Finalized and validated coverage survey result of 97.4 percent. Estimate of 97 percent changed from previous revision value of 96 percent. GoC=R+
- 2022: Estimate informed by interpolation between reported data. Estimate of 97 percent changed from previous revision value of 96 percent. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by reported data. GoC=R+
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 96 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

Luxembourg - POL3



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

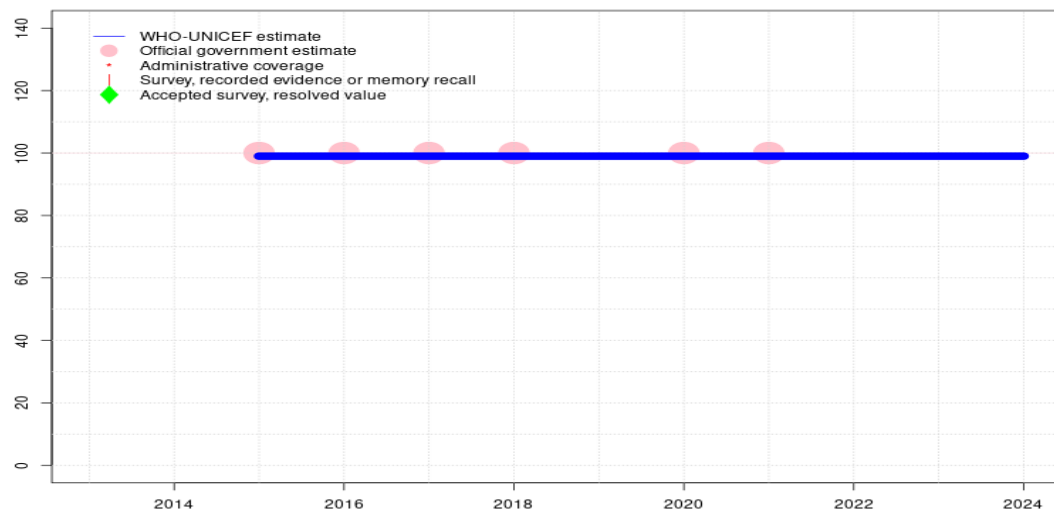
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2024: Estimate based on extrapolation from data reported by national government. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate based on extrapolation from data reported by national government. Finalized and validated coverage survey result of 98.3 percent. GoC=No accepted empirical data
- 2022: Estimate based on extrapolation from data reported by national government. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by interpolation between reported data. GoC=No accepted empirical data
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 99 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

Luxembourg - IPV1

LUX - IPV1



Description:

- 2024: Estimate informed by extrapolation from reported data. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by extrapolation from reported data. Programme reports a one month vaccine stockout at national level. GoC=No accepted empirical data
- 2022: Estimate informed by extrapolation from reported data. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by interpolation between reported data. GoC=No accepted empirical data
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. GoC=R+

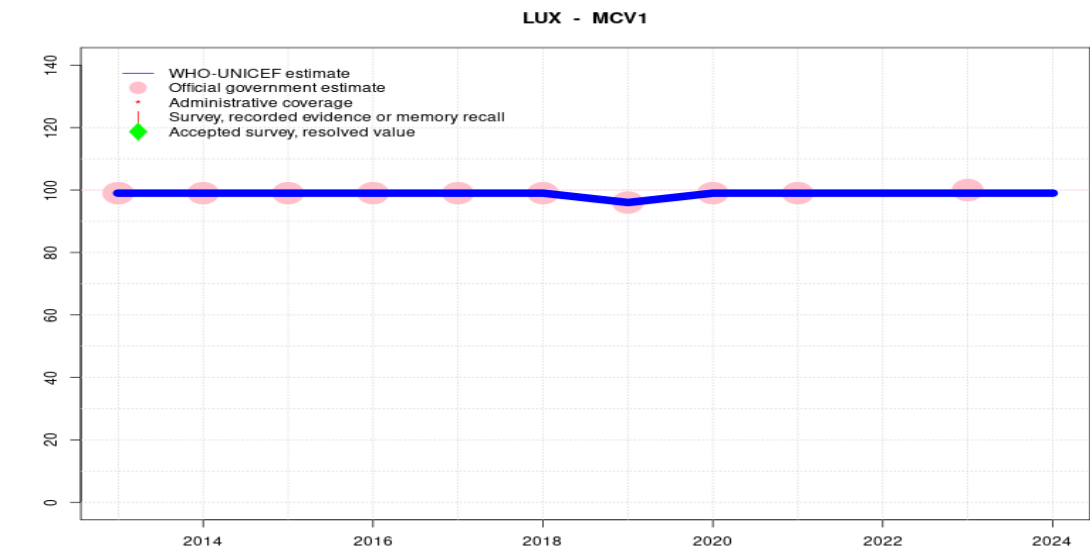
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	-	-	99	99	99	99	99	99	99	99	99	99
Estimate GoC	-	-	●●	●●	●●	●●	●	●●	●●	●	●	●
Official	-	-	100	100	100	100	-	100	100	-	-	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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.

Luxembourg - MCV1



Description:

- 2024: Estimate based on extrapolation from data reported by national government. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by reported data. Finalized and validated coverage survey result of 99.7 percent. GoC=R+
- 2022: Estimate informed by interpolation between reported data. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by reported data. Estimate of 96 percent changed from previous revision value of 99 percent. GoC=R+
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. High levels of coverage supported by a survey of 472 children aged 25-30 m which shows coverage of 99 percent. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

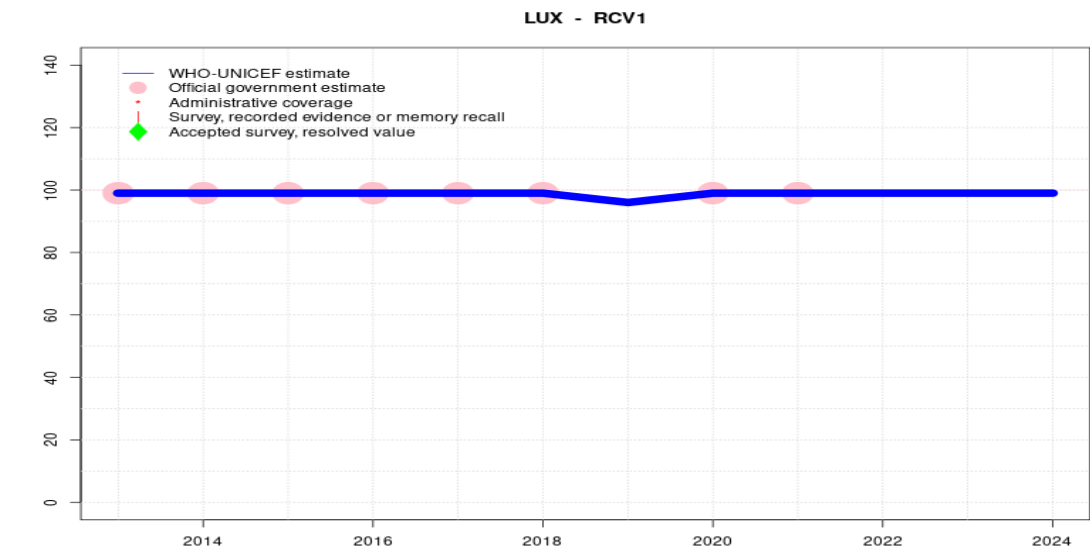
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	99	99	99	99	99	99	96	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●●	●
Official	99	99	99	99	99	99	96	99	99	-	100	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Survey	-	-	-	-	-	-	-	-	-	-	-	-

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.

Luxembourg - RCV1



Description:

- 2024: Estimate based on estimated MCV1. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate based on estimated MCV1. Finalized and validated coverage survey result of 99.7 percent. GoC=R+
- 2022: Estimate based on estimated MCV1. GoC=No accepted empirical data
- 2021: Estimate based on estimated MCV1. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate based on estimated MCV1. GoC=R+
- 2019: Estimate based on estimated MCV1. Estimate of 96 percent changed from previous revision value of 99 percent. GoC=R+
- 2018: Estimate based on estimated MCV1. GoC=R+
- 2017: Estimate based on estimated MCV1. GoC=R+
- 2016: Estimate based on estimated MCV1. GoC=R+
- 2015: Estimate based on estimated MCV1. GoC=R+
- 2014: Estimate based on estimated MCV1. GoC=R+
- 2013: Estimate based on estimated MCV1. GoC=R+

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	99	99	99	99	99	99	96	99	99	99	99	99
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●●	●
Official	99	99	99	99	99	99	-	99	99	-	-	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
Survey	-	-	-	-	-	-	-	-	-	-	-	-

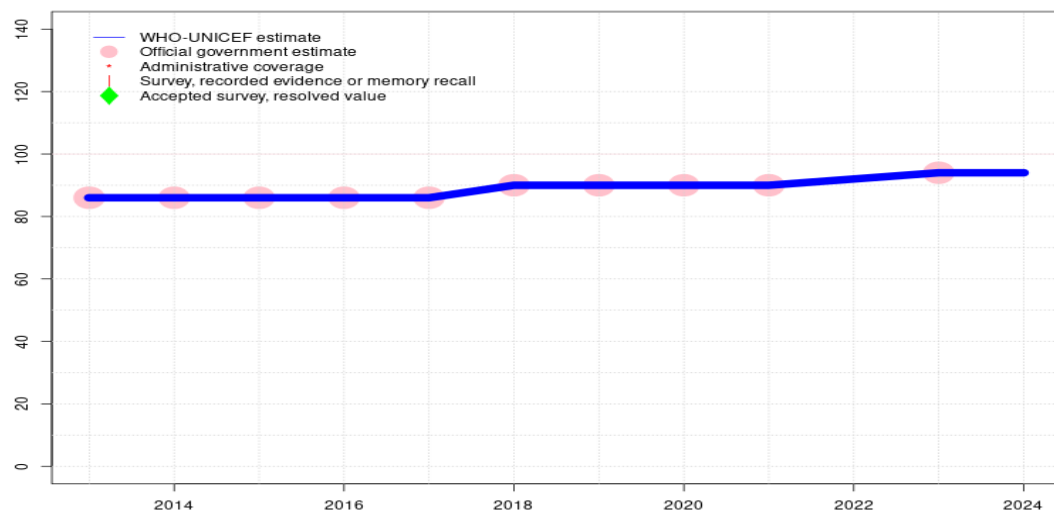
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

Luxembourg - MCV2

LUX - MCV2



Description:

- 2024: Estimate informed by extrapolation from reported data. WHO and UNICEF are aware of the 2023 Vaccination Coverage Survey and await final results. GoC=No accepted empirical data
- 2023: Estimate informed by reported data. Finalized and validated coverage survey result of 93.7 percent. Estimate of 94 percent changed from previous revision value of 90 percent. GoC=R+
- 2022: Estimate informed by interpolation between reported data. Estimate of 92 percent changed from previous revision value of 90 percent. GoC=No accepted empirical data
- 2021: Estimate informed by reported data. Official estimates are derived from the latest vaccination coverage survey of children aged 25-30 months. GoC=R+
- 2020: Estimate informed by reported data. GoC=R+
- 2019: Estimate informed by reported data. GoC=R+
- 2018: Estimate informed by reported data. GoC=R+
- 2017: Estimate informed by reported data. GoC=R+
- 2016: Estimate informed by reported data. GoC=R+
- 2015: Estimate informed by reported data. GoC=R+
- 2014: Estimate informed by reported data. GoC=R+
- 2013: Estimate informed by reported data. GoC=R+

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Estimate	86	86	86	86	86	90	90	90	90	92	94	94
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●●	●
Official	86	86	86	86	86	90	90	90	90	-	94	-
Administrative	-	-	-	-	-	-	-	-	-	-	-	-
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.

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.

2015 Enquête de couverture vaccinale au Grand-Duché de Luxembourg 2018

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Record	99.8	25-30 m	472	100
DTP3	Record	99.2	25-30 m	472	100
HEPB3	Record	95.8	25-30 m	472	100
HIB3	Record	98.7	25-30 m	472	100
MCV1	Record	98.7	25-30 m	472	100
MCV2	Record	90	25-30 m	472	100
PCV3	Record	95.8	25-30 m	472	100
POL3	Record	98.9	25-30 m	472	100
RCV1	Record	98.7	25-30 m	472	100
ROTAC	Record	89.4	25-30 m	472	100

2010 Enquête de couverture vaccinale au Grand-Duché de Luxembourg 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Record	99.9	25-30 m	614	99

Further information and estimates for previous years are available at:

DTP3	Record	99.3	25-30 m	614	99
HEPB3	Record	93.6	25-30 m	614	99
HIB3	Record	98.9	25-30 m	614	99
MCV1	Record	99	25-30 m	614	99
PCV3	Record	95.4	25-30 m	614	99
POL3	Record	99.5	25-30 m	614	99

2005 Enquête de couverture vaccinale au Grand-duché de Luxembourg, octobre 2007-mars 2008

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
DTP1	Record	99.5	25-30 m	562	98
DTP3	Record	99.1	25-30 m	562	98
HEPB3	Record	94.5	25-30 m	562	98
HIB3	Record	99	25-30 m	562	98
MCV1	Record	96.2	25-30 m	562	98
POL3	Record	96.4	25-30 m	562	98

1999 Enquête de couverture vaccinale au Grand-Duché de Luxembourg Janvier-février 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Evidence seen
BCG	Record	20.9	25-30 m	504	94
DTP1	Record	99.6	25-30 m	504	94
DTP3	Record	99.4	25-30 m	504	94
HEPB1	Record	96	25-30 m	504	94
HEPB3	Record	94.5	25-30 m	504	94
HIB1	Record	99.2	25-30 m	504	94
HIB3	Record	98.3	25-30 m	504	94
MCV1	Record	95.4	25-30 m	504	94
POL1	Record	100	25-30 m	504	94
POL3	Record	99.6	25-30 m	504	94

<https://data.unicef.org/topic/child-health/immunization/>
<https://immunizationdata.who.int/listing.html>