

WHO and UNICEF estimates of national immunization coverage - next revision available July 15, 2024

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

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

*Burton et al. 2009. WHO and UNICEF estimates of national infant immunization coverage: methods and processes.

*Burton et al. 2012. A formal representation of the WHO and UNICEF estimates of national immunization coverage: a computational logic approach.

*Brown et al. 2013. An introduction to the grade of confidence used to characterize uncertainty around the WHO and UNICEF estimates of national immunization coverage.

DATA SOURCES.

- **ADMINISTRATIVE coverage:** Reported by national authorities and based on aggregated administrative reports from health service providers on the number of vaccinations administered during a given period (numerator data) and reported target population data (denominator data). May be biased by inaccurate numerator and/or denominator data.
- **OFFICIAL coverage:** Estimated coverage reported by national authorities that reflects their assessment of the most likely coverage based on any combination of administrative coverage, survey-based estimates or other data sources or adjustments. Approaches to determine OFFICIAL coverage may differ across countries.
- **SURVEY coverage:** Based on estimated coverage from population-based household surveys among children aged 12-23 months or 24-35 months following a review of survey methods and results. Information is based on the combination of vaccination history from documented evidence or caregiver recall. Survey results are considered for the appropriate birth cohort based on the period of data collection.

ABBREVIATIONS

 $\mathbf{BCG:}\ \mathbf{percentage}\ \mathbf{of}\ \mathbf{births}\ \mathbf{who}\ \mathbf{received}\ \mathbf{one}\ \mathbf{dose}\ \mathbf{of}\ \mathbf{Bacillus}\ \mathbf{Calmette}\ \mathbf{Guerin}\ \mathbf{vaccine}.$

- **DTP1 / DTP3:** percentage of surviving infants who received the 1st / 3rd dose, respectively, of diphtheria and tetanus toxoid with pertussis containing vaccine.
- **Pol3:** percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.
- **IPV1:** percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine

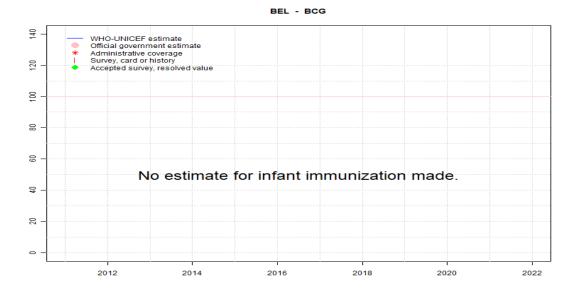
immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age among countries. For countries utilizing IPV containing vaccine use only, i.e., no recommended dose of OPV, the WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV.

Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (Pol3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated Pol3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated Pol3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

- MCV1: percentage of surviving infants who received the 1st dose of measles containing vaccine. In countries where the national schedule recommends the 1st dose of MCV at 12 months or later based on the epidemiology of disease in the country, coverage estimates reflect the percentage of children who received the 1st dose of MCV as recommended.
- **MCV2:** percentage of children who received the 2nd dose of measles containing vaccine according to the nationally recommended schedule.
- **RCV1:** percentage of surviving infants who received the 1st dose of rubella containing vaccine. 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 nor are the data represented in the accompanying graph and data table.
- **HepBB:** percentage of births which received a dose of hepatitis B vaccine within 24 hours of delivery. Estimates of hepatitis B birth dose coverage are produced only for countries with a universal birth dose policy. Estimates are not produced for countries that recommend a birth dose to infants born to HepB virus-infected mothers only or where there is insufficient information to determine whether vaccination is within 24 hours of birth.
- HepB3: percentage of surviving infants who received the 3rd dose of hepatitis B containing vaccine following the birth dose.
- **Hib3:** percentage of surviving infants who received the 3rd dose of Haemophilus influenzae type b containing vaccine.
- **RotaC:** percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.
- **PcV3:** percentage of surviving infants who received the 3rd dose of pneumococcal conjugate vaccine. In countries where the national schedule recommends two doses during infancy and a booster dose at 12 months or later based on the epidemiology of disease in the country, coverage estimates may reflect the percentage of surviving infants who received two doses of PcV prior to the 1st birthday.
- **YFV:** percentage of surviving infants who received one dose of yellow fever vaccine in countries where YFV is part of the national immunization schedule for children or is recommended in at risk areas; coverage estimates are annualized for the entire cohort of surviving infants.

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Belgium - BCG

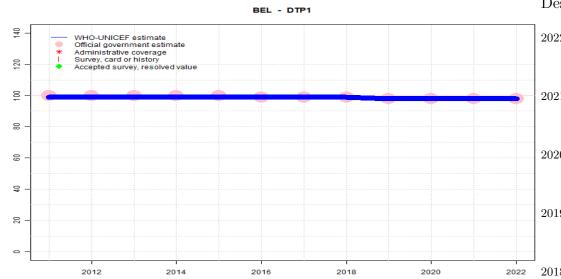


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	99	99	99	99	99	99	99	99	98	98	98	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	100	100	100	100	100	99	99	99	98	98	98	98
Administrative	NA											
		NA	NI A	NA								

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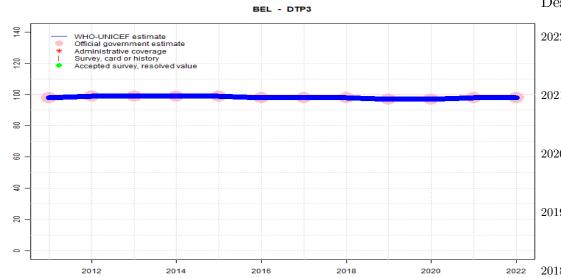
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Description:

- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2017: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2016: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2014: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	99	99	99	99	98	98	98	97	97	98	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	98	99	99	99	99	98	98	98	97	97	98	98
Administrative	NA											
Survey	NA											

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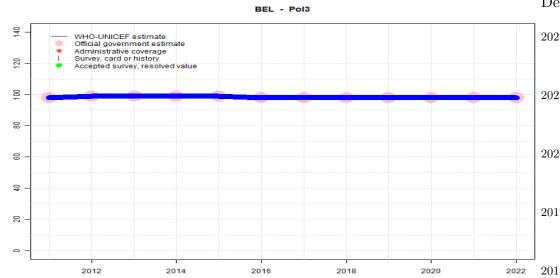
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Belgium - Pol3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	99	99	99	99	98	98	98	98	98	98	98
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	98	99	99	99	99	98	98	98	98	98	98	98
Administrative	NA											
Survey	NA											

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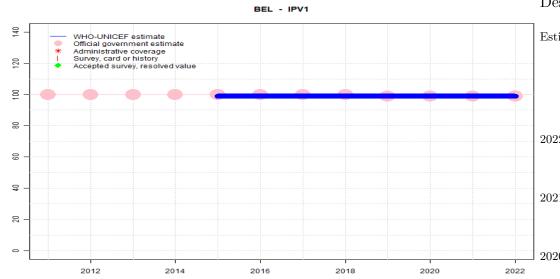
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- 2012: Estimate informed by reported data. National government reports are based on popu-

Belgium - Pol3

lation weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

Belgium - IPV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	NA	NA	NA	99	99	99	99	99	99	99	99
Estimate GoC	NA	NA	NA	NA	••	••	••	••	••	••	••	••
Official	100	100	100	100	100	100	100	100	99	99	99	99
Administrative	NA											
Survey	NA											

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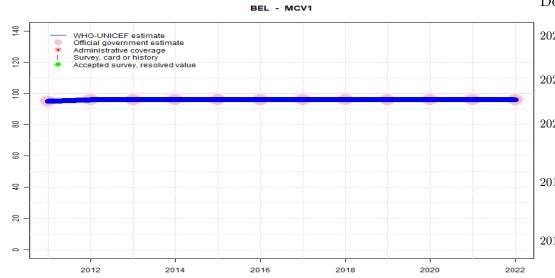
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Description:

- Estimates for a dose of inactivated polio vaccine (IPV) begin in 2015 following the Global Polio Eradication Initiative's Polio Eradication and Endgame Strategic Plan: 2013-2018 which recommended at least one full dose or two fractional doses of IPV into routine immunization schedules as a strategy to mitigate the potential consequences should any re-emergence of type 2 poliovirus occur following the planned withdrawal of Sabin type 2 strains from oral polio vaccine (OPV).
- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2020: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
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- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

Belgium - MCV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	96	96	96	96	96	96	96	96	96	96	96
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	95	96	96	96	96	96	96	96	96	96	96	96
Administrative	NA											
Survey	NA											

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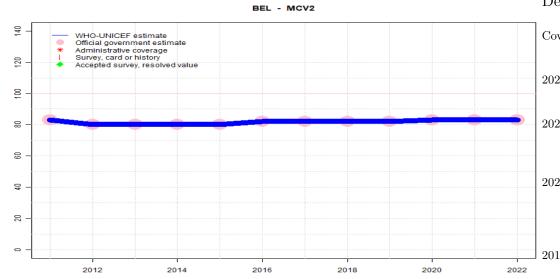
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Description:

- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019). GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019). GoC=R+
- 2020: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
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recent regional survey and year of calculation. GoC=R+ $\,$

Belgium - MCV2



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	83	80	80	80	80	82	82	82	82	83	83	83
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	83	80	80	80	80	82	82	82	82	83	83	83
Administrative	NA											
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

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

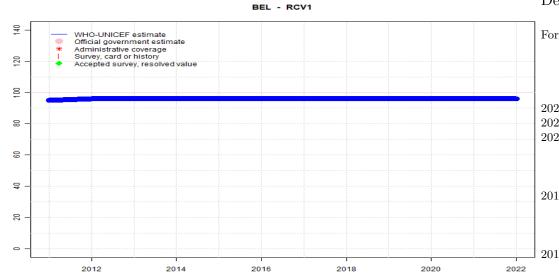
- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2015-2016) and Brussels (2015-2016). GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2015-2016) and Brussels (2015-2016). Estimate of 83 percent changed from previous revision value of 85 percent. GoC=R+
- 2020: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 83 percent changed from previous revision value of 85 percent. GoC=R+
- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 82 percent changed from previous revision value of 85 percent. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 82 percent changed from previous revision value of 85 percent. GoC=R+
- 2017: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 82 percent changed from previous revision value of 85 percent. GoC=R+
- 2016: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 82 percent changed from previous revision value of 85 percent. GoC=R+
- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 80 percent changed from previous revision value of 85 percent. GoC=R+
- 2014: Estimate informed by reported data. National government reports are based on population

Belgium - MCV2

weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 80 percent changed from previous revision value of 85 percent. GoC=R+

- 2013: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 80 percent changed from previous revision value of 85 percent. GoC=R+
- 2012: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 80 percent changed from previous revision value of 85 percent. GoC=R+
- 2011: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2008), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

Belgium - RCV1



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	95	96	96	96	96	96	96	96	96	96	96	96
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	NA											
Administrative	NA											
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- For this revision, coverage estimates for the first dose of rubella containing vaccine are based on WHO and UNICEF estimates of coverage of measles containing vaccine. Nationally reported coverage of rubella containing vaccine is not taken into consideration nor are they represented in the the accompanying graph and data table.
- 2022: Estimate based on estimated MCV1. GoC=R+ $\,$
- 2021: Estimate based on estimated MCV1. GoC=R+ $\,$
- 2020: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2019: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2017: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2016: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2015: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2014: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2013: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2012: Estimate based on estimated MCV1. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and

Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

Belgium - HepBB

BEL - HepBB

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8 -		No estimate	e for infant im	munization m	nade.	
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120 140	WHO-UNICEF Official governm Administrative Survey, card or Accepted surve	ment estimate coverage				

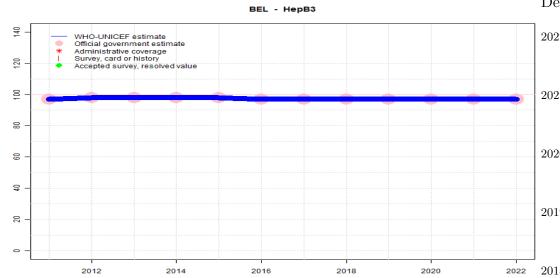
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA											
Estimate GoC	NA											
Official	NA											
Administrative	NA											
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Belgium - HepB3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	97	98	98	98	98	97	97	97	97	97	97	97
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	97	98	98	98	98	97	97	97	97	97	97	97
Administrative	NA											
Survey	NA											

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

- ●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

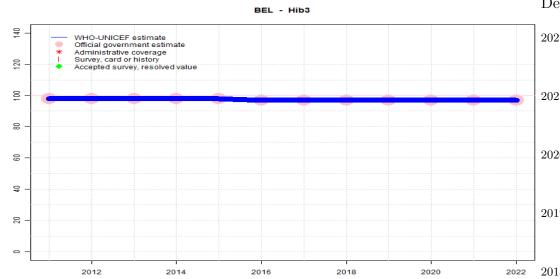
- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2017: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2016: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2014: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2013: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2012: Estimate informed by reported data. National government reports are based on popu-

Belgium - HepB3

lation weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

Belgium - Hib3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	98	98	98	98	98	97	97	97	97	97	97	97
Estimate GoC	••	••	••	••	••	••	••	••	••	••	••	••
Official	98	98	98	98	98	97	97	97	97	97	97	97
						· ·						
Administrative	NA											

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

- ●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

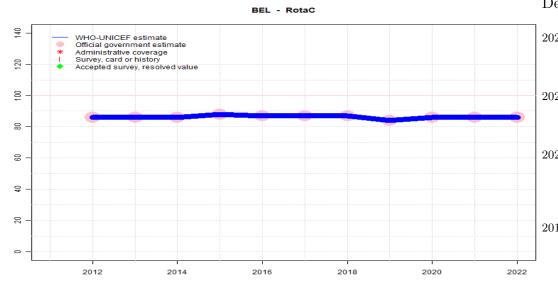
- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2017: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2016: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2014: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2013: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2012: Estimate informed by reported data. National government reports are based on popu-

Belgium - Hib3

lation weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

Belgium - RotaC



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	86	86	86	88	87	87	87	84	86	86	86
Estimate GoC	NA	••	••	••	••	••	••	••	••	••	••	••
Official	NA	86	86	86	88	87	87	87	84	86	86	86
Administrative	NA											
Survey	NA											

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

- ●●● Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

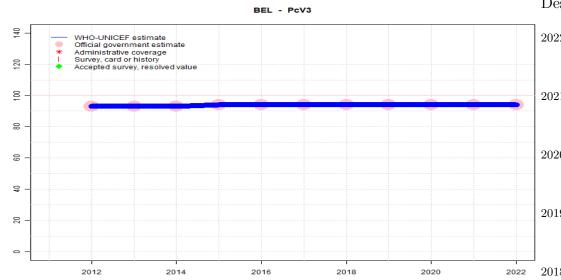
- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

2020: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Estimate of 86 percent changed from previous revision value of 84 percent. GoC=R+

- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2017: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2016: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2014: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2013: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

2012: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Rotavirus vaccine introduced in 2007. Reporting started in 2012. GoC=R+

Belgium - PcV3



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Estimate	NA	93	93	93	94	94	94	94	94	94	94	94
Estimate GoC	NA	••	••	••	••	••	••	••	••	••	••	••
Official	NA	93	93	93	94	94	94	94	94	94	94	94
Administrative	NA											
Survey	NA											

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

- ••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2022 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2022: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2021: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2020), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+

- 2019: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2019) and Brussels (2019) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2018: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2017: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2016: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2016), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2015: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2015-2016) and Brussels (2012) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2014: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2013: Estimate informed by reported data. National government reports are based on population weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. GoC=R+
- 2012: Estimate informed by reported data. National government reports are based on popu-

Belgium - PcV3

lation weighted regional survey results from Flanders (2012), Wallonia (2008-2009) and Brussels (2008-2009) and an assumption of stable coverage since the year of the most recent regional survey and year of calculation. Pneumococcal vaccine introduced in 2006. Reporting started in 2012. GoC=R+

Belgium - survey details

NOTE: A survey to measure vaccination coverage for infants (i.e., children aged 0 to 11 months) will sample children aged 12 to 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 to 23 months at the time of the survey reflect the immunization experience of children born in 2019. Depending on the timing of survey field work, results may reflect the immunization experience of children born and vaccinated 1 or 2 years prior to the survey field work.

2018 2020 Studie van de vaccinatiegraad bij jonge kinderen en adolescenten in Vlaanderen in 2020, CEV-UA en KUL, 2022

Vaccine Confirmation method Coverage Age cohort Sample Cards seen

DTP1	Card	98.5	$18\text{-}24~\mathrm{m}$	721	100
DTP3	Card	97.4	18-24 m	721	100
HepB1	Card	98.5	18-24 m	721	100
HepB3	Card	97.4	18-24 m	721	100
Hib1	Card	98.5	18-24 m	721	100
Hib3	Card	97.4	18-24 m	721	100
MCV1	Card	96.1	18-24 m	721	100
PCV1	Card	97.8	18-24 m	721	100
PCV3	Card	95.4	18-24 m	721	100
Pol1	Card	98.5	$18\text{-}24~\mathrm{m}$	721	100
Pol3	Card	97.4	$18\text{-}24~\mathrm{m}$	721	100
RotaC	Card	92.4	$18\text{-}24~\mathrm{m}$	721	100

2017 Enquete de couverture vaccinale des enfants de 18 à 24 mois en Fédération Wallonie-Bruxelles (Bruxelles excepté), Bruxelles en 2019, ULB-ESP, 2020

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	Card	98.2	$18\text{-}24~\mathrm{m}$	487	100
DTP3	Card	97.7	$18\text{-}24~\mathrm{m}$	487	100

HepB1	Card	96.7	18-24 m	487	100
HepB3	Card	96.7	18-24 m	487	100
Hib1	Card	97.9	18-24 m	487	100
Hib3	Card	96.7	18-24 m	487	100
MCV1	Card	96.5	18-24 m	487	100
PCV1	Card	96.7	18-24 m	487	100
PCV3	Card	92	18-24 m	487	100
Pol1	Card	99	18-24 m	487	100
Pol3	Card	97.9	18-24 m	487	100
RotaC	Card	80.9	18-24 m	487	100

2017 Enquete de couverture vaccinale des enfants de 18 a 24 mois en Region de Bruxelles-Capitale, Bruxelles en 2019, ULB-ESP, 2020

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DTP1	Card	98.5	18-24 m	460	100
DTP3	Card	97.4	18-24 m	460	100
HepB1	Card	97.6	18-24 m	460	100
HepB3	Card	96.5	18-24 m	460	100
Hib1	Card	98	18-24 m	460	100
Hib3	Card	96.5	18-24 m	460	100
MCV1	Card	94.8	18-24 m	460	100
PCV1	Card	96.3	18-24 m	460	100
PCV3	Card	91.7	18-24 m	460	100
Pol1	Card	99.1	18-24 m	460	100
Pol3	Card	98	18-24 m	460	100
RotaC	Card	69.3	$18\text{-}24~\mathrm{m}$	460	100

2014 Studie van de vaccinatiegraad bij jonge kinderen en adolescenten in Vlaanderen in 2016, KUL and UA, 2017

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	Card	98.7	18-24 m	746	100
DTP3	Card	97	18-24 m	746	100
HepB1	Card	98.2	18-24 m	746	100
HepB3	Card	96.9	18-24 m	746	100
Hib1	Card	98.2	18-24 m	746	100

Belgium - survey details

Hib3	Card	96.8	18-24 m	746	100
MCV1	Card	96.2	18-24 m	746	100
PcV1	Card	98.3	18-24 m	746	100
PcV3	Card	94.9	18-24 m	746	100
Pol1	Card	99.1	18-24 m	746	100
Pol3	Card	97.6	18-24 m	746	100
RotaC	Card	89.7	18-24 m	746	100

2013 Enquête de couverture vaccinale des enfants de 18 à 24 mois en region de Wallonie en 2015

Vaccine	Confirmation method	Coverage Age col	hort Sample	Cards seen
DTD1	A 1	00.0 10.01	F 10	100

DTP1	Card	99.6	18-24 m	546	100
DTP3	Card	98.9	18-24 m	546	100
HepB1	Card	99.1	18-24 m	546	100
HepB3	Card	98.2	18-24 m	546	100
Hib1	Card	99.6	18-24 m	546	100
Hib3	Card	98.7	18-24 m	546	100
MCV1	Card	95.6	18-24 m	546	100
PCV1	Card	97.6	18-24 m	546	100
PCV3	Card	92.9	$18\text{-}24~\mathrm{m}$	546	100
Pol1	Card	100	$18\text{-}24~\mathrm{m}$	546	100
Pol3	Card	99.1	$18\text{-}24~\mathrm{m}$	546	100
RotaC	Card	87.2	18-24 m	546	100

2010 Enquête de couverture vaccinale des enfants de 18 à 24 mois en Région de Bruxelles-Capitale 2012

Vaccine Confirmation method Coverage Age cohort Sample Cards seen

DTP1	Card	99.6	18-24 m	538	100
DTP3	Card	98.7	18-24 m	538	100
HepB1	Card	96.7	$18\text{-}24~\mathrm{m}$	538	100
HepB3	Card	96.3	$18\text{-}24~\mathrm{m}$	538	100
Hib1	Card	97.2	$18\text{-}24~\mathrm{m}$	538	100
Hib3	Card	96.7	$18\text{-}24~\mathrm{m}$	538	100
MCV1	Card	94.1	$18\text{-}24~\mathrm{m}$	538	100
PcV1	Card	97	$18\text{-}24~\mathrm{m}$	538	100
PcV3	Card	90.1	$18\text{-}24~\mathrm{m}$	538	100

Pol1	Card	99.6	$18\text{-}24~\mathrm{m}$	538	100
Pol3	Card	98.7	$18\text{-}24~\mathrm{m}$	538	100
RotaC	Card	72.7	18-24 m	538	100

2010 Enquete de couverture vaccinale des enfants de 18 a 24 mois en Region de Wallonie en 2012

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
DTP1	Card	99.8	18-24 m	519	100
DTP3	Card	99.2	18-24 m	519	100
HepB1	Card	98.1	$18\text{-}24~\mathrm{m}$	519	100
HepB3	Card	97.2	$18\text{-}24~\mathrm{m}$	519	100
Hib1	Card	99.2	$18\text{-}24~\mathrm{m}$	519	100
Hib3	Card	98.5	$18\text{-}24~\mathrm{m}$	519	100
MCV1	Card	94.4	$18\text{-}24~\mathrm{m}$	538	100
PcV1	Card	97.1	$18\text{-}24~\mathrm{m}$	519	100
PcV3	Card	89.2	$18\text{-}24~\mathrm{m}$	519	100
Pol1	Card	99.8	18-24 m	519	100
Pol3	Card	99.2	18-24 m	519	100
RotaC	Card	80.2	18-24 m	519	100

2010 Studie van de vaccinatiegraad bij jonge kinderen en adolescenten in Vlaanderen in 2012

Vaccine Confirmation method Coverage Age cohort Sample Cards seen

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DTP1	Card	99.5	18-24 m	874	92
DTP3	Card	98.7	18-24 m	874	92
HepB1	Card	99.4	18-24 m	874	92
HepB3	Card	98.5	18-24 m	874	92
Hib1	Card	99.4	18-24 m	874	92
Hib3	Card	98.7	18-24 m	874	92
MCV1	Card	96.6	18-24 m	874	92
PcV1	Card	99.3	18-24 m	874	92
PcV3	Card	96.5	18-24 m	874	92
Pol1	Card	99.6	18-24 m	874	92
Pol3	Card	98.9	18-24 m	874	92
RotaC	Card	92.2	18-24 m	874	92

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