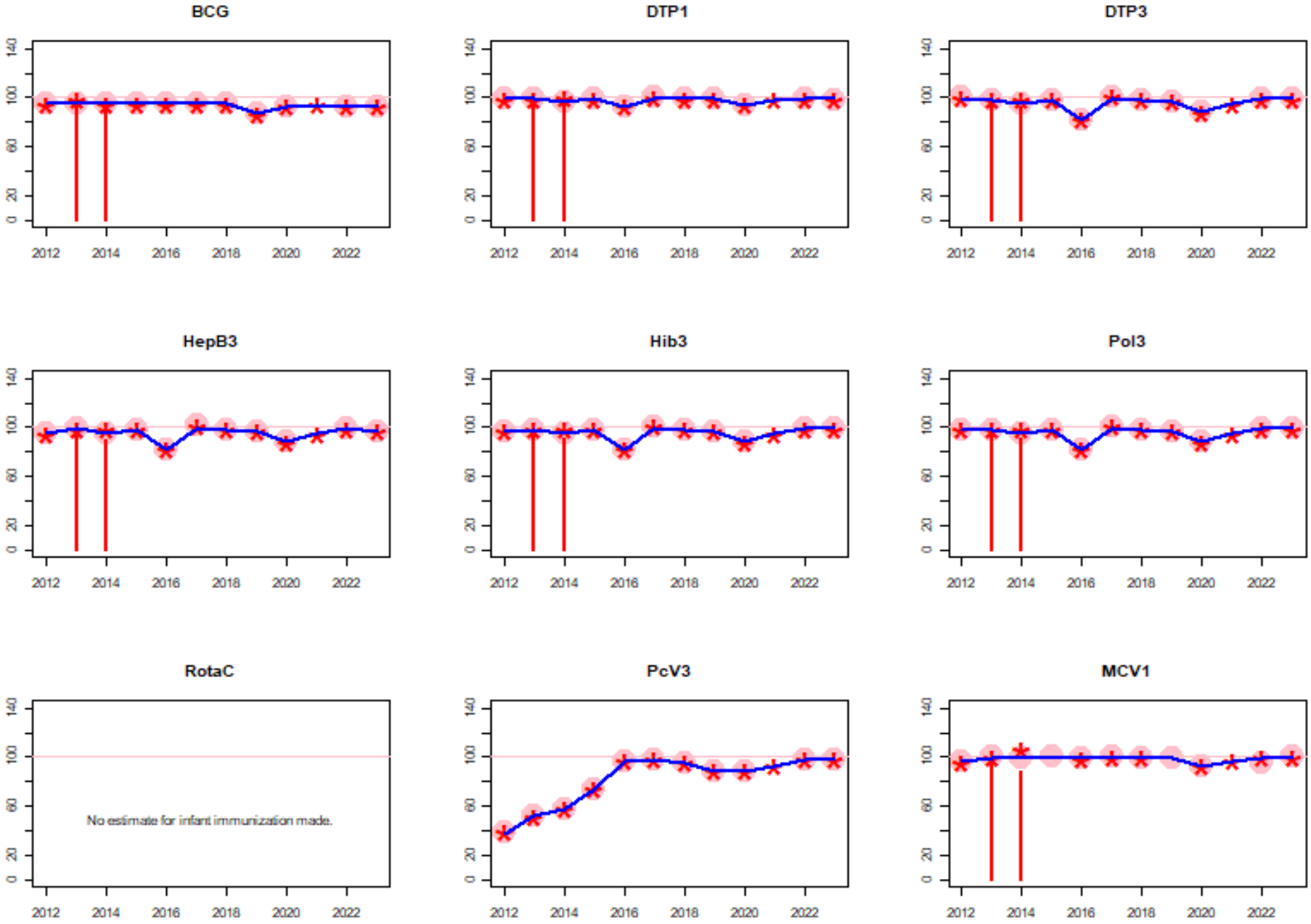

BCG
DTP1
DTP3
HepB3
Hib3
Pol3
RotaC
No estimate for infant immunization made.
PcV3
MCV1
0
20
60
100
140
2012
2014
2016
2018
2020
2022

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

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

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

DATA SOURCES.

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

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

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

ABBREVIATIONS

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

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

Pol3: percentage of surviving infants who received the 3rd dose of polio containing vaccine. May be either oral or inactivated polio vaccine.

IPV1: percentage of surviving infants who received at least one dose of inactivated polio vaccine. In countries utilizing an immunization schedule recommending either (i) a primary series of three doses of oral polio vaccine (OPV) plus at least one dose of IPV where OPV is included in routine immunization and/or campaign or (ii) a sequential schedule of IPV followed by OPV, WHO and UNICEF estimates for IPV1 reflect coverage with at least one routine dose of IPV among infants <1 year of age. For countries utilizing IPV containing vaccine only, i.e., no recommended dose of OPV, WHO and UNICEF estimate for IPV1 corresponds to coverage for the 1st dose of IPV. Production of IPV coverage estimates, which begins in 2015, results in no change of the estimated coverage levels for the 3rd dose of polio (Pol3). For countries recommending routine immunization with a primary series of three doses of IPV alone, WHO and UNICEF estimated Pol3 coverage is equivalent to estimated coverage with three doses of IPV. For countries with a sequential schedule, estimated Pol3 coverage is based on that for the 3rd dose of polio vaccine regardless of vaccine type.

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

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

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

RCV1: percentage of surviving infants who received the 1st dose of rubella containing vaccine. Co verage estimates are based on WHO and UNICEF estimates of coverage for the dose of measles containing vaccine that corresponds to the first measles-rubella combination vaccine. Nationally reported coverage of RCV is not taken into consideration nor are the data represented in the accompanying graph and data table.

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

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

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

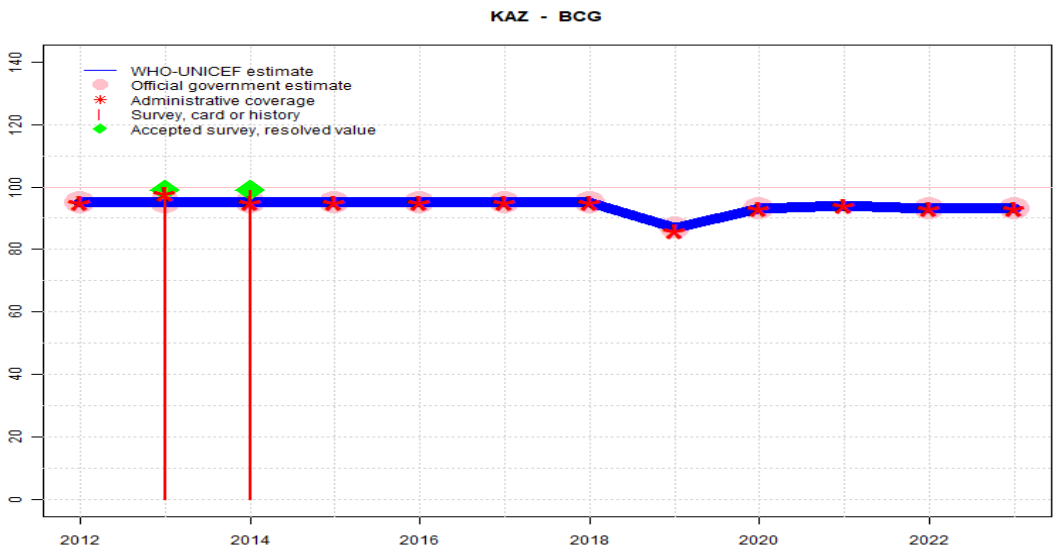
RotaC: percentage of surviving infants who received the final recommended dose of rotavirus vaccine, which can be either the 2nd or the 3rd dose depending on the vaccine.

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

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

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

Kazakhstan - BCG



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	95	95	95	95	95	95	95	87	93	94	93	93
Estimate GoC	●●●	●●●	●●●	●●●	●●●	●●	●●	●●	●●	●●	●●	●●
Official	95	95	95	95	95	95	95	87	93	NA	93	93
Administrative	95	98	95	95	95	95	95	86	93	94	93	93
Survey	NA	99	99	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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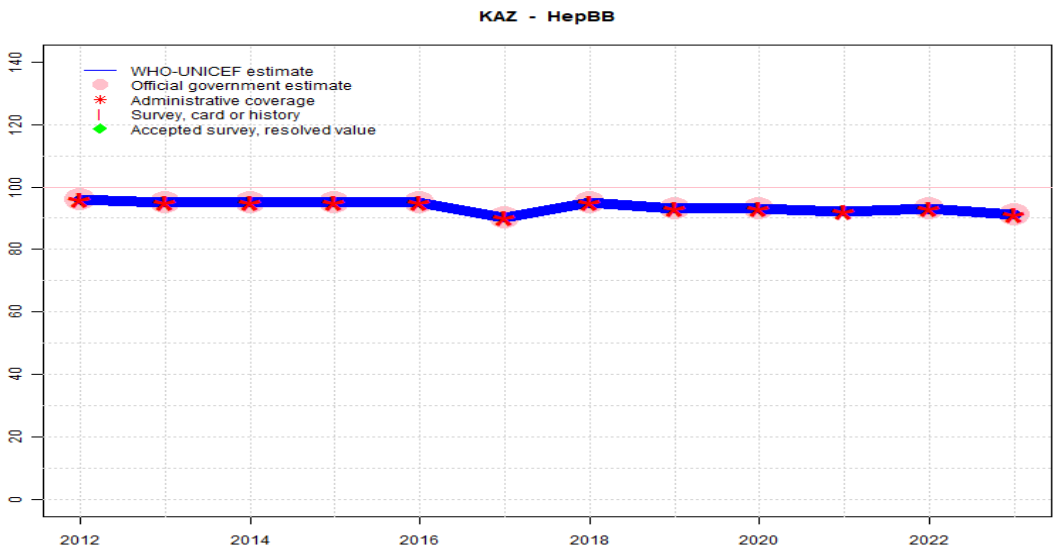
Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. GoC=R+ D+
2022: Estimate informed by reported data. GoC=R+ D+
2021: Estimate informed by reported administrative data. Reported target population of live births is twenty-six percent higher than that of surviving infants, and also significantly higher than the live births projected by the United Nations Population Division. GoC=R+ D+
2020: Estimate informed by reported data. GoC=R+ D+
2019: Estimate informed by reported data. Programme reports one month vaccine stockout. GoC=R+ D+
2018: Estimate informed by reported data. GoC=R+ D+
2017: Estimate informed by reported data. GoC=R+ D+
2016: Estimate informed by reported data. GoC=R+ S+ D+
2015: Estimate informed by reported data. GoC=R+ S+ D+
2014: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+ D+
2013: Estimate informed by reported data supported by survey. Survey evidence of 99 percent based on 1 survey(s). GoC=R+ S+ D+
2012: Estimate informed by reported data. GoC=R+ S+ D+

Kazakhstan - HepBB



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	96	95	95	95	95	90	95	93	93	92	93	91
Estimate GoC	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Official	96	95	95	95	95	90	95	93	93	NA	93	91
Administrative	96	95	95	95	95	90	95	93	93	92	93	91
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. GoC=R+ D+
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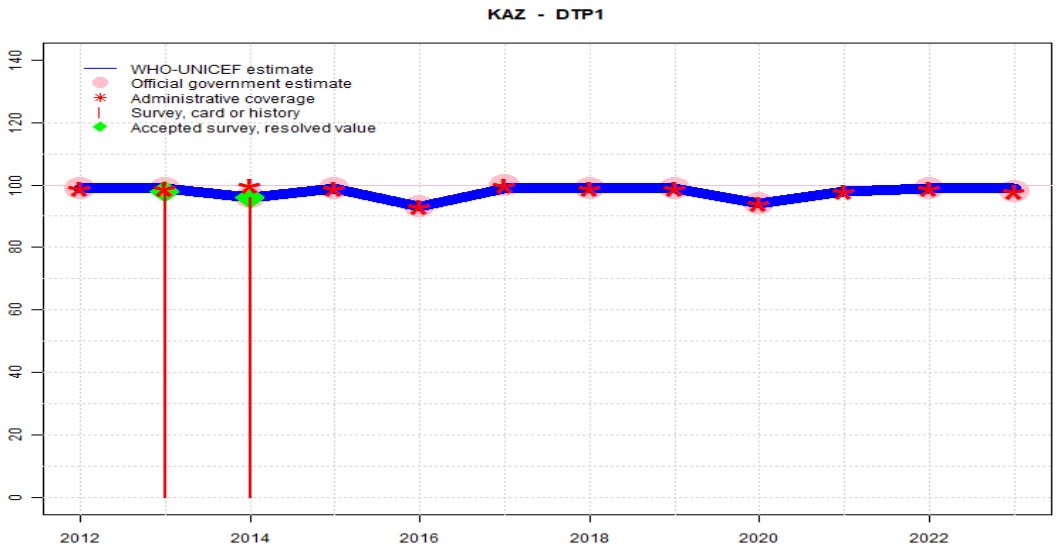
2020: Estimate informed by reported data. GoC=R+ D+
2019: Estimate informed by reported data. GoC=R+ D+
2018: Estimate informed by reported data. GoC=R+ D+
2017: Estimate informed by reported data. Programme reports four months vaccine stockout at national level. GoC=R+ D+
2016: Estimate informed by reported data. GoC=R+ D+
2015: Estimate informed by reported data. GoC=R+ D+
2014: Estimate informed by reported data. GoC=R+ D+
2013: Estimate informed by reported data. GoC=R+ D+
2012: Estimate informed by reported data. GoC=R+ D+

Kazakhstan - DTP1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	99	99	96	99	93	99	99	99	94	98	99	99
Estimate GoC	•	•	•••	•	•	•	•	•	•	•	•	•
Official	99	99	96	99	93	100	99	99	94	NA	99	98
Administrative	99	99	100	99	93	100	99	99	94	98	99	98
Survey	NA	98	96	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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

Description:

2023: DTP1 coverage estimated based on DTP3 coverage of 99. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-R-

2022: Estimate informed by reported data. Estimate challenged by: D-

2021: Estimate informed by reported administrative data. Estimate challenged by: D-

2020: Estimate informed by reported data. Estimate challenged by: D-

2019: Estimate informed by reported data. Estimate challenged by: D-

2018: Estimate informed by reported data. Estimate challenged by: D-

2017: DTP1 coverage estimated based on DTP3 coverage of 101. Estimate challenged by: R-

2016: Estimate informed by reported data. Programme reports 5-month vaccine stockout at national level. Estimate challenged by: D-

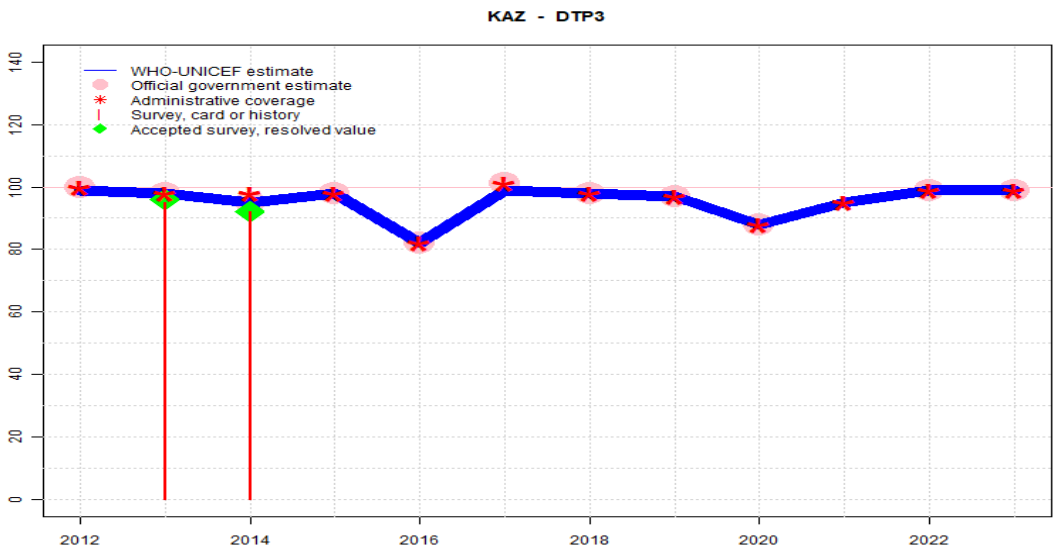
2015: Estimate informed by reported data. Estimate challenged by: D-

2014: Estimate informed by reported data supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R+ S+ D+

2013: Estimate informed by reported data supported by survey. Survey evidence of 98 percent based on 1 survey(s). Estimate challenged by: D-

2012: DTP1 coverage estimated based on DTP3 coverage of 100. Estimate challenged by: R-

Kazakhstan - DTP3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	99	98	95	98	82	99	98	97	88	95	99	99
Estimate GoC	●●●	●	●●●	●	●	●●	●	●	●	●	●	●
Official	100	98	95	98	82	101	98	97	88	NA	99	99
Administrative	100	98	98	98	82	101	98	97	88	95	99	99
Survey	NA	95	92	NA	NA	NA	NA	NA	NA	NA	NA	NA

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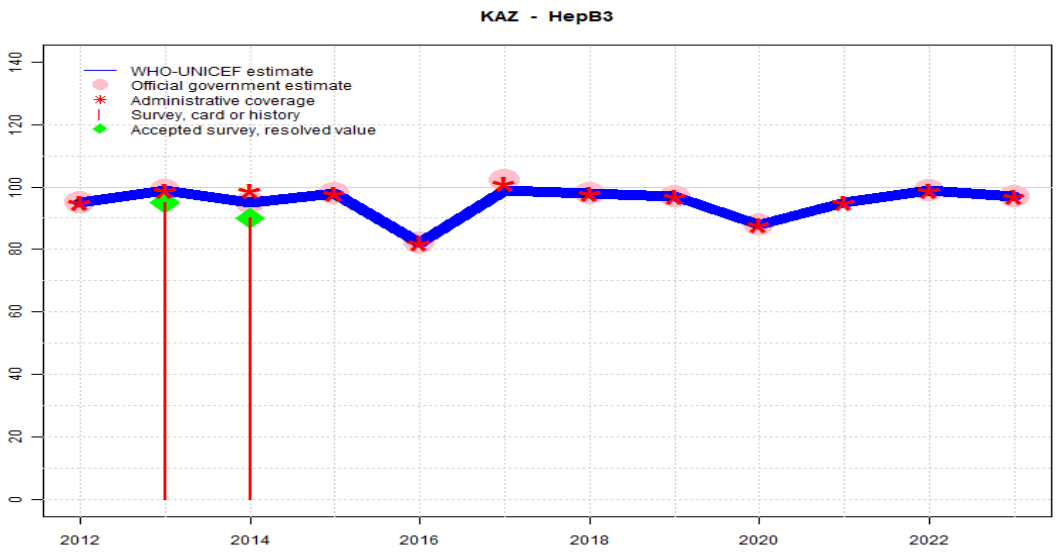
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. Estimate challenged by: D-
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. Programme reports two months vaccine stockout at national level. GoC=R+ D+
2016: Estimate informed by reported data. Programme reports 5-month vaccine stockout at national level. Estimate challenged by: D-
2015: Estimate informed by reported data. Estimate challenged by: D-
2014: Estimate informed by reported data supported by survey. Survey evidence of 92 percent based on 1 survey(s). GoC=R+ S+ D+
2013: Estimate informed by reported data supported by survey. Survey evidence of 96 percent based on 1 survey(s). Kazakhstan Multiple Indicator Cluster Survey 2015 card or history results of 95 percent modifed for recall bias to 96 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 95 percent and 3rd dose card only coverage of 93 percent. Estimate challenged by: D-
2012: Estimate informed by reported data. GoC=R+ S+ D+

Kazakhstan - HepB3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	95	99	95	98	82	99	98	97	88	95	99	97
Estimate GoC	●●●	●	●●●	●	●	●	●	●	●	●	●	●
Official	95	99	95	98	82	102	98	97	88	NA	99	97
Administrative	95	99	99	98	82	101	98	97	88	95	99	97
Survey	NA	95	90	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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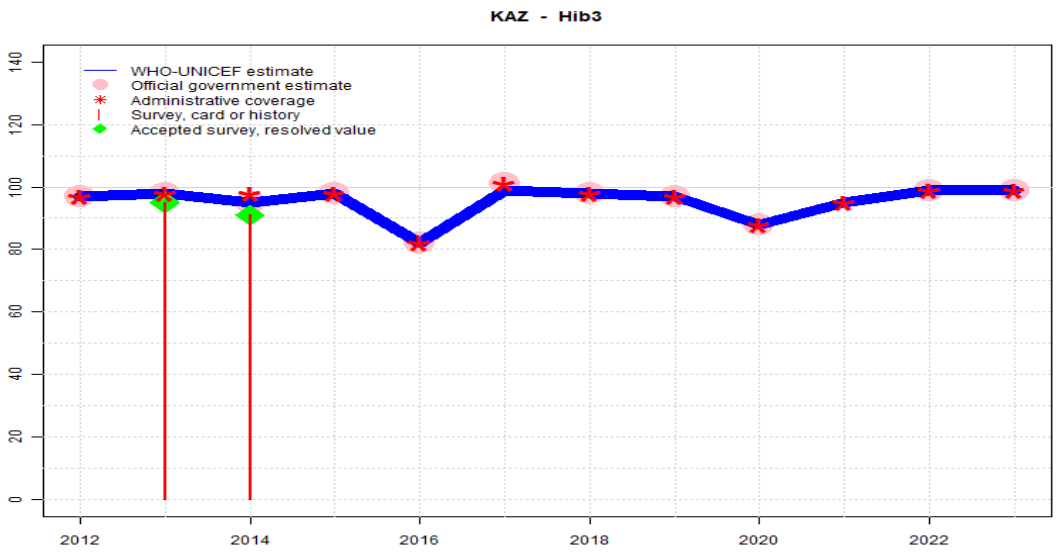
Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. Estimate challenged by: D-
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. Programme reports two months vaccine stockout at national level. Estimate challenged by: D-
2016: Estimate informed by reported data. Programme reports 5-month vaccine stockout at national level. Estimate challenged by: D-
2015: Estimate informed by reported data. Estimate challenged by: D-
2014: Estimate informed by reported data supported by survey. Survey evidence of 90 percent based on 1 survey(s). GoC=R+ S+ D+
2013: Estimate informed by reported data supported by survey. Survey evidence of 95 percent based on 1 survey(s). Estimate challenged by: D-
2012: Estimate informed by reported data. GoC=R+ S+ D+

Kazakhstan - Hib3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	97	98	95	98	82	99	98	97	88	95	99	99
Estimate GoC	●●●	●	●●●	●	●	●●	●	●	●	●	●	●
Official	97	98	95	98	82	101	98	97	88	NA	99	99
Administrative	97	98	98	98	82	101	98	97	88	95	99	99
Survey	NA	95	91	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
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2017: Estimate informed by reported data. Programme reports two months vaccine stockout at national level. GoC=R+ D+
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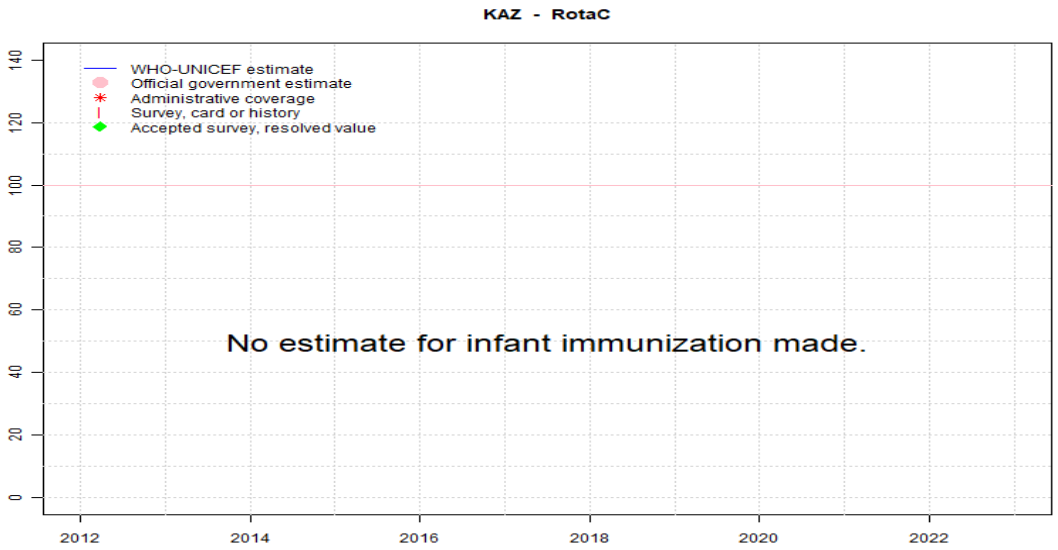
2012: Estimate informed by reported data. GoC=R+ S+ D+

Kazakhstan - RotaC



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

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

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

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

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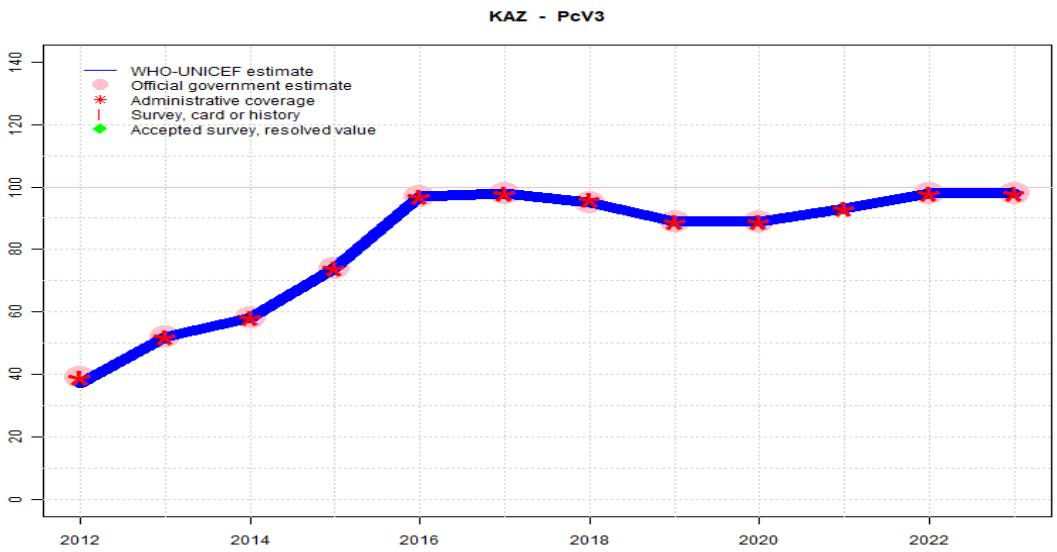
Kazakhstan - PcV3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	37	52	58	74	97	98	95	89	89	93	98	98
Estimate GoC	•	••	••	••	•	•	•	•	•	•	•	•
Official	39	52	58	74	97	98	95	89	89	NA	98	98
Administrative	39	52	58	74	97	98	96	89	89	93	98	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

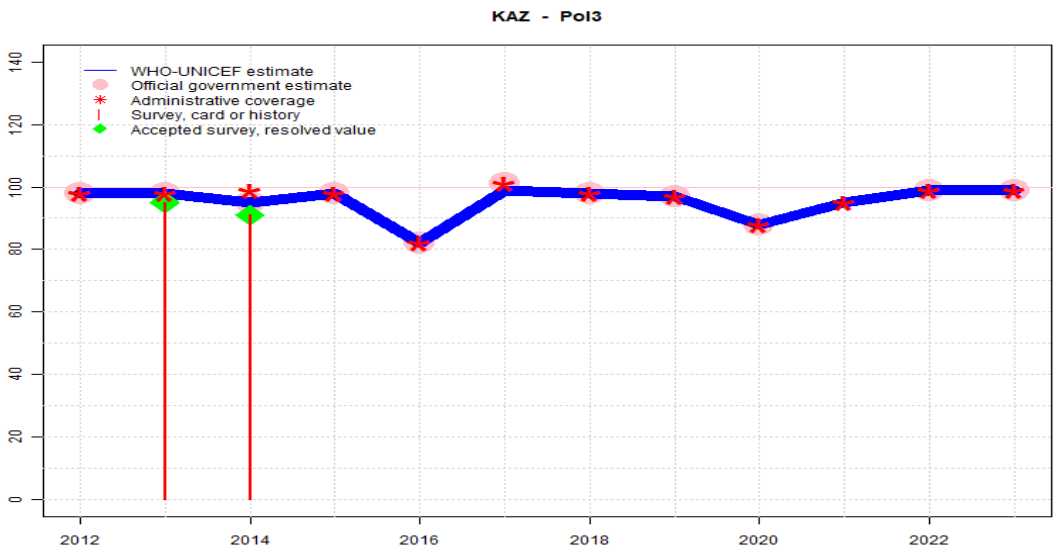
● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. Programme reports three months vaccine stockout. Estimate challenged by: D-
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. Estimate challenged by: D-
2016: Estimate informed by reported data. Estimate challenged by: D-
2015: Estimate informed by reported data. GoC=R+ D+
2014: Estimate informed by reported data. GoC=R+ D+
2013: Estimate informed by reported data. GoC=R+ D+
2012: Coverage of 39 percent achieved in 96 percent of the population. Estimate is based on annualized coverage for the national birth cohort. Pneumococcal conjugate vaccine (PCV) introduced during 2012. Estimate challenged by: R-

Kazakhstan - Pol3



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	98	98	95	98	82	99	98	97	88	95	99	99
Estimate GoC	●●●	●	●●●	●	●	●●	●	●	●	●	●	●
Official	98	98	95	98	82	101	98	97	88	NA	99	99
Administrative	98	98	99	98	82	101	98	97	88	95	99	99
Survey	NA	95	91	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

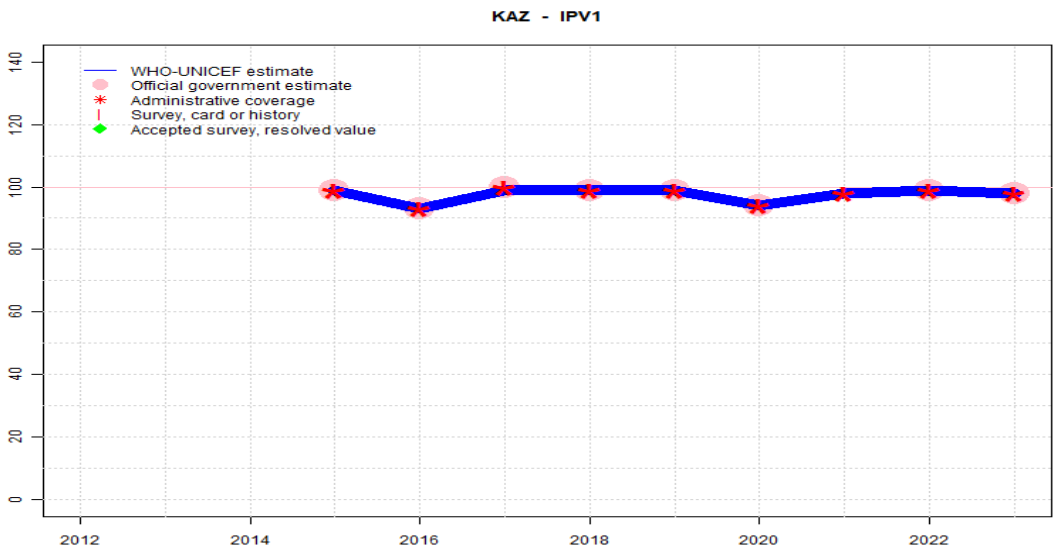
● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. Programme reports two months vaccine stockout. Estimate challenged by: D-
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. Programme recovered from stockout reported in prior year. GoC=R+ D+
2016: Estimate informed by reported data. Programme reports 5-month vaccine stockout at national level. Estimate challenged by: D-
2015: Estimate informed by reported data. Estimate challenged by: D-
2014: Estimate informed by reported data supported by survey. Survey evidence of 91 percent based on 1 survey(s). GoC=R+ S+ D+
2013: Estimate informed by reported data supported by survey. Survey evidence of 95 percent based on 1 survey(s). Estimate challenged by: D-
2012: Estimate informed by reported data. GoC=R+ S+ D+

Kazakhstan - IPV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	99	93	99	99	99	94	98	99	98
Estimate GoC	NA	NA	NA	•	•	••	•	•	•	•	•	•
Official	NA	NA	NA	99	93	100	99	99	94	NA	99	98
Administrative	NA	NA	NA	99	93	100	99	99	94	98	99	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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

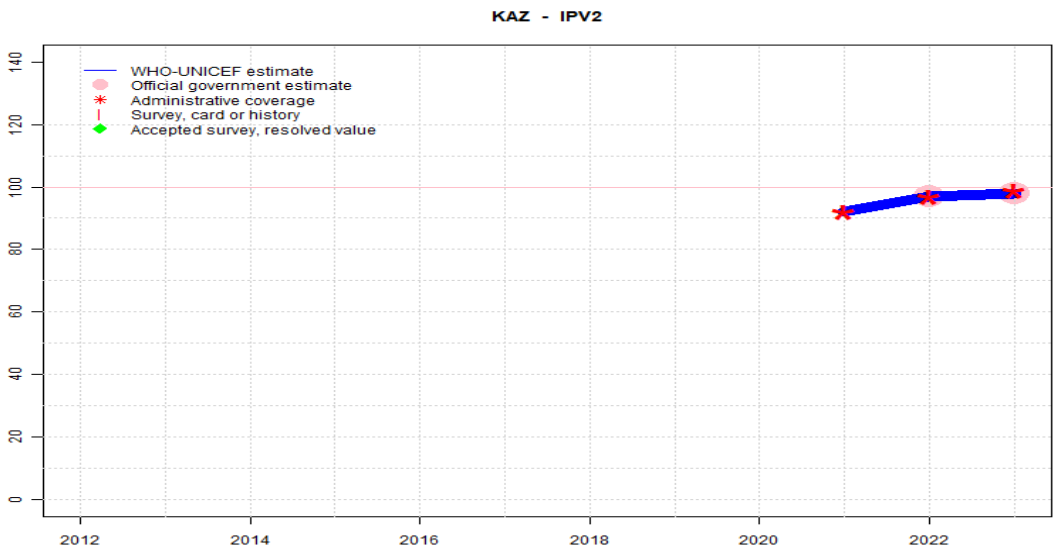
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. Estimate challenged by: D-
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. GoC=R+ D+
2016: Estimate informed by reported data. Programme reports 5-month vaccine stockout at national level. Estimate challenged by: D-
2015: Estimate informed by reported data. Estimate challenged by: D-

Kazakhstan - IPV2



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	92	97	98
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	97	98
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	92	97	99
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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

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

Description:

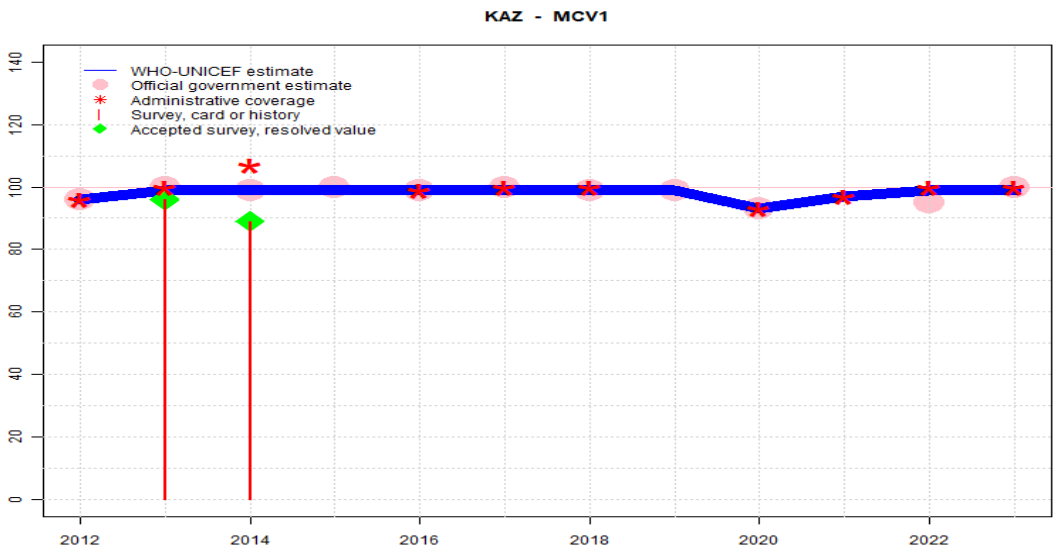
Estimates for a second dose of inactivated polio vaccine (IPV) begin in 2021 following a Strategic Advisory Group of Experts on Immunization (SAGE) recommendation in October 2020 that a second IPV dose increases protection against all polioviruses, including protection against paralysis caused by vaccine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

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-

2022: Estimate informed by reported data. Estimate challenged by: D-

2021: Estimate informed by reported administrative data. Second dose of inactivated polio vaccine introduced prior to 2021. Estimate challenged by: D-

Kazakhstan - MCV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	96	99	99	99	99	99	99	99	93	97	99	99
Estimate GoC	●●●	●	●●●	●	●	●	●	●●	●	●	●	●
Official	96	100	99	100	99	100	99	99	93	NA	95	100
Administrative	96	100	107	NA	99	100	100	NA	93	97	100	100
Survey	NA	96	89	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

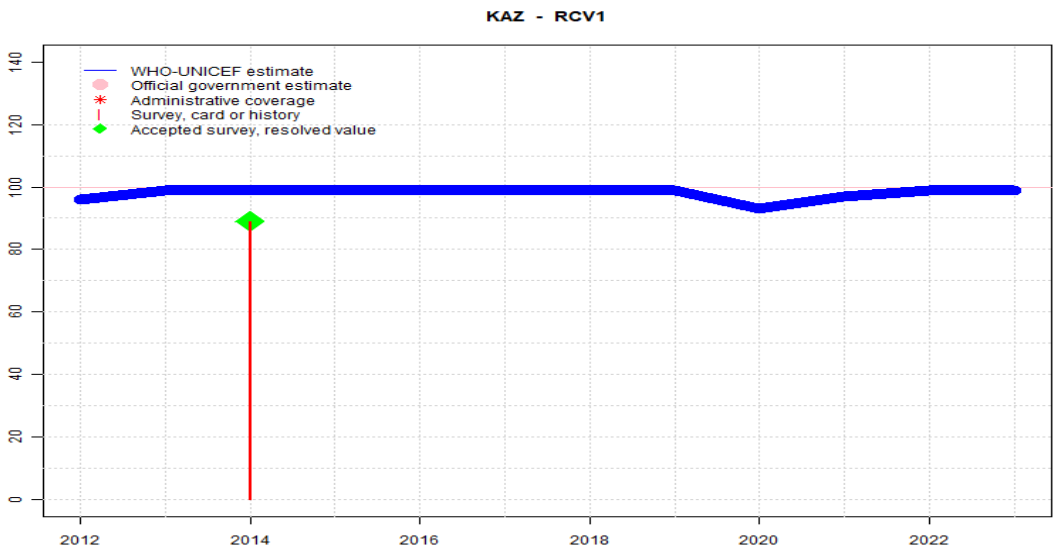
● There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported administrative data. Unexplained adjustment to the reported official coverage from administrative coverage. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. GoC=R+
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. Estimate challenged by: D-
2016: Estimate informed by reported data. Estimate challenged by: D-
2015: Estimate informed by reported data. Estimate challenged by: S-
2014: Estimate informed by reported data supported by survey. Survey evidence of 89 percent based on 1 survey(s). GoC=R+ S+ D+
2013: Estimate informed by reported data supported by survey. Survey evidence of 96 percent based on 1 survey(s). Estimate challenged by: D-S-
2012: Estimate informed by reported data. GoC=R+ S+ D+

Kazakhstan - RCV1



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	96	99	99	99	99	99	99	99	93	97	99	99
Estimate GoC	●●●	●	●●●	●	●	●	●	●●	●	●	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	89	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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

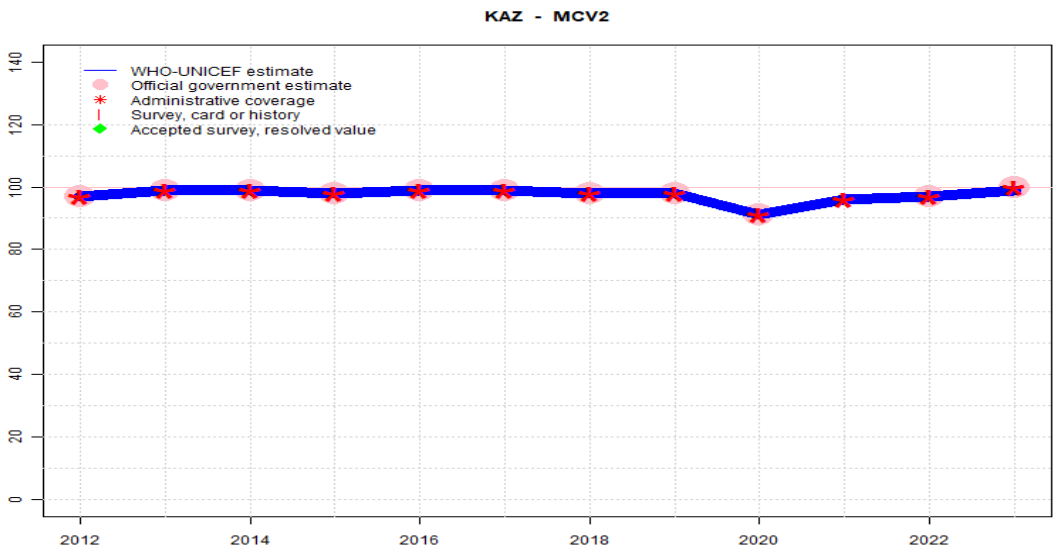
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

2023: Estimate based on estimated MCV1. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate based on estimated MCV1. Estimate challenged by: D-
2021: Estimate based on estimated MCV1. Estimate challenged by: D-
2020: Estimate based on estimated MCV1. Estimate challenged by: D-
2019: Estimate based on estimated MCV1. GoC=R+
2018: Estimate based on estimated MCV1. Estimate challenged by: D-
2017: Estimate based on estimated MCV1. Estimate challenged by: D-
2016: Estimate based on estimated MCV1. Estimate challenged by: D-
2015: Estimate based on estimated MCV1. Estimate challenged by: S-
2014: Estimate based on estimated MCV1. GoC=R+ S+ D+
2013: Estimate based on estimated MCV1. Estimate challenged by: D-S-
2012: Estimate based on estimated MCV1. GoC=R+ S+ D+

Kazakhstan - MCV2



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Estimate	97	99	99	98	99	99	98	98	91	96	97	99
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	97	99	99	98	99	99	98	98	91	NA	97	100
Administrative	97	99	99	98	99	99	98	98	91	96	97	100
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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

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

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

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

Description:

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

2023: Estimate informed by reported data. No nationally representative household survey for the most recent 5 annual birth cohorts. WHO and UNICEF recommend a high quality survey to verify reported levels of coverage. Estimate challenged by: D-
2022: Estimate informed by reported data. Estimate challenged by: D-
2021: Estimate informed by reported administrative data. Estimate challenged by: D-
2020: Estimate informed by reported data. Estimate challenged by: D-
2019: Estimate informed by reported data. Estimate challenged by: D-
2018: Estimate informed by reported data. Estimate challenged by: D-
2017: Estimate informed by reported data. Estimate challenged by: D-
2016: Estimate informed by reported data. Estimate challenged by: D-
2015: Estimate informed by reported data. Estimate challenged by: D-
2014: Estimate informed by reported data. Estimate challenged by: D-
2013: Estimate informed by reported data. Estimate challenged by: D-
2012: Estimate informed by reported data. Estimate challenged by: D-

Kazakhstan - survey details

NOTE: A survey to measure vaccination coverage for infants (i.e., children aged 0-11 months) will sample children aged 12-23 months at the time of survey to capture the youngest annual cohort of children who should have completed the vaccination schedule. Because WUENIC are for infant vaccinations, survey data in this report are presented to reflect the birth year of the youngest survey cohort. For example, results for a survey conducted during December 2020 among children aged 12-23 months at the time of the survey reflect the immunization experience of children born in 2019. Depending on the timing of survey field work, results may reflect the immunization experience of children born and vaccinated 1 or 2 years prior to the survey field work.

2014 Kazakhastan Multiple Indicator Cluster Survey 2015

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	98.5	12-23 m	1071	98
BCG	Card	97.3	12-23 m	1071	98
BCG	Card or History	98.8	12-23 m	1071	98
DTP1	C or H <12 months	95.6	12-23 m	1071	98
DTP1	Card	94.3	12-23 m	1071	98
DTP1	Card or History	95.9	12-23 m	1071	98
DTP3	C or H <12 months	89.7	12-23 m	1071	98
DTP3	Card	89.8	12-23 m	1071	98
DTP3	Card or History	92.4	12-23 m	1071	98
HepB1	C or H <12 months	97.6	12-23 m	1071	98
HepB1	Card	96.1	12-23 m	1071	98
HepB1	Card or History	97.7	12-23 m	1071	98
HepB3	C or H <12 months	88.4	12-23 m	1071	98
HepB3	Card	87.6	12-23 m	1071	98
HepB3	Card or History	90	12-23 m	1071	98
Hib1	C or H <12 months	94.7	12-23 m	1071	98
Hib1	Card	92.9	12-23 m	1071	98
Hib1	Card or History	95	12-23 m	1071	98
Hib3	C or H <12 months	89.3	12-23 m	1071	98
Hib3	Card	88.6	12-23 m	1071	98
Hib3	Card or History	91.4	12-23 m	1071	98
MCV1	Card	82.7	12-23 m	1071	98
MCV1	Card or History	89.4	12-23 m	1071	98
Pol1	C or H <12 months	95.6	12-23 m	1071	98
Pol1	Card	94.1	12-23 m	1071	98
Pol1	Card or History	95.9	12-23 m	1071	98
Pol3	C or H <12 months	89.7	12-23 m	1071	98
Pol3	Card	89.2	12-23 m	1071	98
Pol3	Card or History	91.3	12-23 m	1071	98

2013 Kazakhastan Multiple Indicator Cluster Survey 2015

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	98.4	24-35 m	1045	-
BCG	Card	96.5	24-35 m	1045	-
BCG	Card or History	98.9	24-35 m	1045	-
DTP1	C or H <12 months	96.1	24-35 m	1045	-
DTP1	Card	94.6	24-35 m	1045	-
DTP1	Card or History	97.5	24-35 m	1045	-
DTP3	C or H <12 months	91	24-35 m	1045	-
DTP3	Card	92.6	24-35 m	1045	-
DTP3	Card or History	95.4	24-35 m	1045	-
HepB1	C or H <12 months	98.6	24-35 m	1045	-
HepB1	Card	96.3	24-35 m	1045	-
HepB1	Card or History	98.6	24-35 m	1045	-
HepB3	C or H <12 months	90.9	24-35 m	1045	-
HepB3	Card	92.5	24-35 m	1045	-
HepB3	Card or History	95	24-35 m	1045	-
Hib1	C or H <12 months	95.8	24-35 m	1045	-
Hib1	Card	93.8	24-35 m	1045	-
Hib1	Card or History	97.3	24-35 m	1045	-
Hib3	C or H <12 months	90.7	24-35 m	1045	-
Hib3	Card	92.3	24-35 m	1045	-
Hib3	Card or History	95.1	24-35 m	1045	-
MCV1	C or H <12 months	95.1	24-35 m	1045	-
MCV1	Card	92.7	24-35 m	1045	-
MCV1	Card or History	95.6	24-35 m	1045	-
Pol1	C or H <12 months	96.7	24-35 m	1045	-
Pol1	Card	95.5	24-35 m	1045	-
Pol1	Card or History	97.9	24-35 m	1045	-
Pol3	C or H <12 months	91.2	24-35 m	1045	-
Pol3	Card	93.2	24-35 m	1045	-
Pol3	Card or History	95.3	24-35 m	1045	-

Kazakhstan - survey details

2009 Multiple Indicator Cluster Survey in the Republic of Kazakhstan 2010-2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	99.2	15-26 m	-	-
BCG	Card	96	15-26 m	-	-
BCG	Card or History	99.5	15-26 m	1076	-
BCG	History	3.4	15-26 m	-	-
DTP1	C or H <12 months	98.4	15-26 m	-	-
DTP1	Card	95.3	15-26 m	-	-
DTP1	Card or History	98.8	15-26 m	1076	-
DTP1	History	3.5	15-26 m	-	-
DTP3	C or H <12 months	93	15-26 m	-	-
DTP3	Card	94.2	15-26 m	-	-
DTP3	Card or History	96.8	15-26 m	1076	-
DTP3	History	2.6	15-26 m	-	-
HepB1	C or H <12 months	95.9	15-26 m	-	-
HepB1	Card	76.1	15-26 m	-	-
HepB1	Card or History	96.6	15-26 m	1076	-
HepB1	History	20.4	15-26 m	-	-
HepB3	C or H <12 months	67	15-26 m	-	-
HepB3	Card	63.1	15-26 m	-	-
HepB3	Card or History	70.2	15-26 m	1076	-
HepB3	History	7.1	15-26 m	-	-
MCV1	C or H <12 months	89	15-26 m	-	-
MCV1	Card	90.5	15-26 m	-	-
MCV1	Card or History	93.9	15-26 m	1076	-
MCV1	History	3.4	15-26 m	-	-
Pol1	C or H <12 months	98.9	15-26 m	-	-
Pol1	Card	95.5	15-26 m	-	-
Pol1	Card or History	99.1	15-26 m	1076	-
Pol1	History	3.6	15-26 m	-	-
Pol3	C or H <12 months	81.3	15-26 m	-	-
Pol3	Card	86.3	15-26 m	-	-
Pol3	Card or History	88.4	15-26 m	1076	-
Pol3	History	2.1	15-26 m	-	-

2004 Kazakhstan Multiple Indicator Cluster Survey 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	97.9	15-26 m	991	-
BCG	Card	95.1	15-26 m	991	-
BCG	Card or History	99.6	15-26 m	991	-
BCG	History	4.5	15-26 m	991	-
DTP1	C or H <12 months	97.9	15-26 m	991	-
DTP1	Card	95.5	15-26 m	991	-
DTP1	Card or History	99.4	15-26 m	991	-
DTP1	History	4	15-26 m	991	-
DTP3	C or H <12 months	91.7	15-26 m	991	-
DTP3	Card	95.7	15-26 m	991	-
DTP3	Card or History	98	15-26 m	991	-
DTP3	History	2.4	15-26 m	991	-
HepB1	C or H <12 months	94.3	15-26 m	991	-
HepB1	Card	95.1	15-26 m	991	-
HepB1	Card or History	95.1	15-26 m	991	-
HepB1	History	0	15-26 m	991	-
HepB3	C or H <12 months	92.3	15-26 m	991	-
HepB3	Card	95.1	15-26 m	991	-
HepB3	Card or History	95.1	15-26 m	991	-
HepB3	History	0	15-26 m	991	-
MCV1	C or H <12 months	94.7	15-26 m	991	-
MCV1	Card	95.6	15-26 m	991	-
MCV1	Card or History	99.4	15-26 m	991	-
MCV1	History	3.8	15-26 m	991	-
Pol1	C or H <12 months	99	15-26 m	991	-
Pol1	Card	95.2	15-26 m	991	-
Pol1	Card or History	99.5	15-26 m	991	-
Pol1	History	4.3	15-26 m	991	-
Pol3	C or H <12 months	93.9	15-26 m	991	-
Pol3	Card	95.3	15-26 m	991	-
Pol3	Card or History	96.7	15-26 m	991	-
Pol3	History	1.4	15-26 m	991	-

1998 Kazakhstan Demographic and Health Survey 1999, 2000

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen

Kazakhstan - survey details

BCG	Card	90.2	12-23 m	244	-	Pol1	Card	89.9	12-23 m	244	-
DTP1	Card	90.3	12-23 m	244	-	Pol3	Card	83.3	12-23 m	244	-
DTP3	Card	88.9	12-23 m	244	-						
MCV1	Card	78.7	12-23 m	244	-						

Kazakhstan - survey details

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