User's Reference to Country Reports of

WHO and UNICEF Estimates of National Infant

Immunization Coverage

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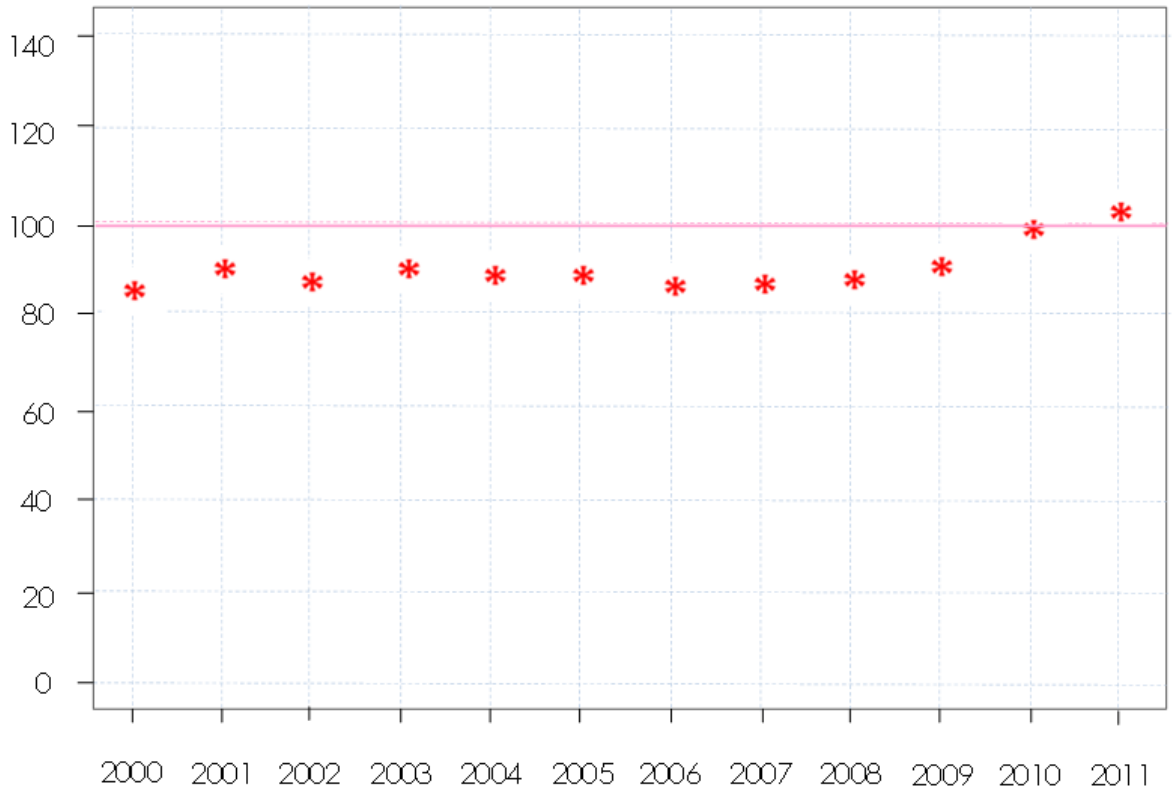
World Health Organization

unicef

WHO and UNICEF estimates of national immunization coverage



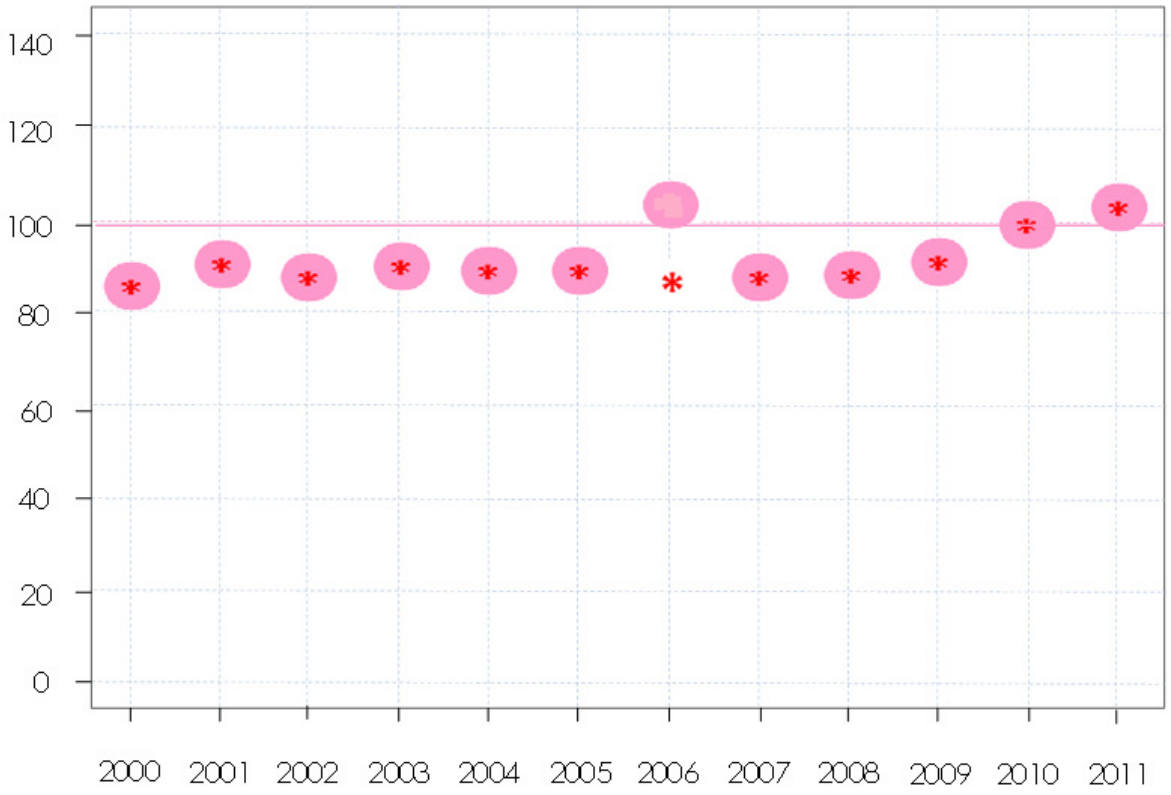
PHASE 1

WHO and UNICEF estimates of national infant routine immunization coverage are based in part on coverage data derived from administrative data systems reported through the annual WHO and UNICEF Joint Reporting Form on Immunization as well as other official communications.

At left, administrative coverage data for an antigen (e.g., BCG) are displayed as red stars (*) for the period 2000 through 2011 (x-axis) during which national authorities reported these data to WHO and/or UNICEF.

Coverage is presented as the percentage of a target population that has been vaccinated (y-axis). For example, coverage for the third dose of DTP is calculated by dividing the number of children receiving the third dose of DTP vaccine by the number of children who survived to their first birthday.

WHO and UNICEF estimates of national immunization coverage



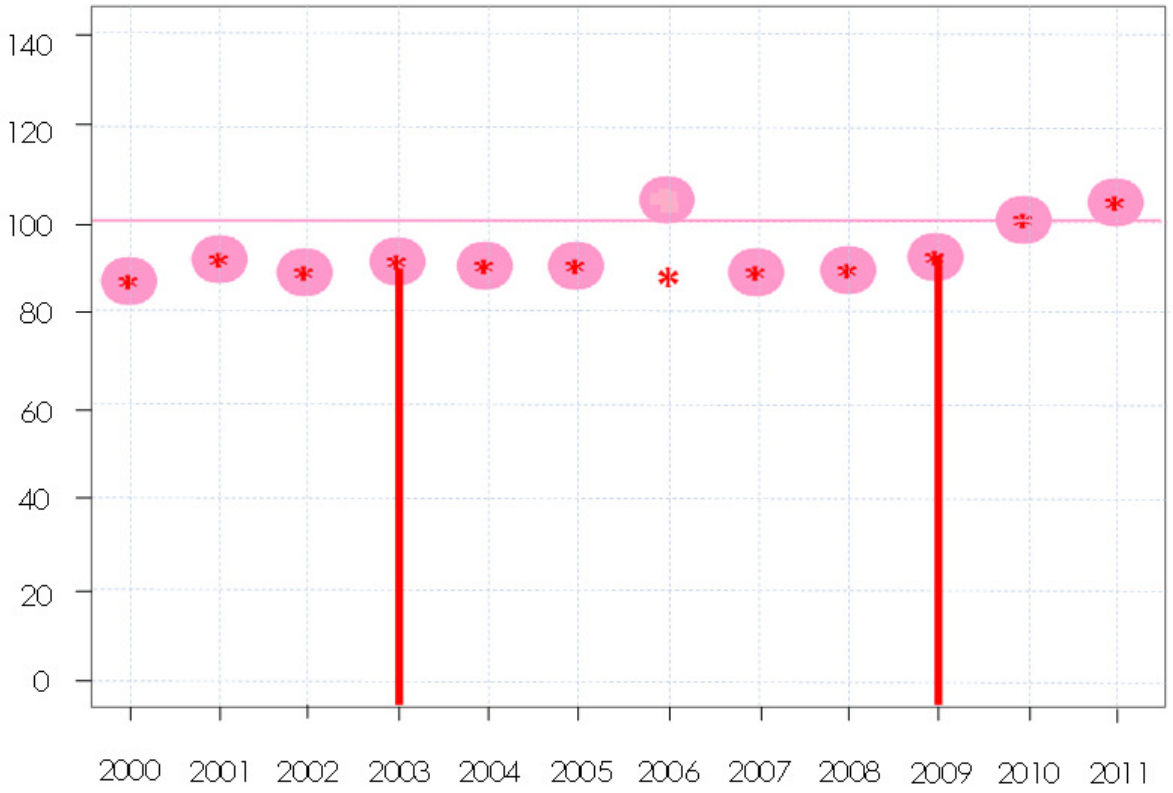
PHASE 2

National authorities are also asked to provide official reported coverage data through the WHO and UNICEF Joint Reporting Form. It is important to understand that administrative immunization coverage figures can be biased or inaccurate. Hence, national authorities are given an opportunity to provide estimates of the most likely true coverage that take into account the administrative data as well as any other available information on factors affecting immunization coverage (e.g., private or NGO sector contributions to immunization, difficulties with demographic data, and incomplete reporting). It is recommended that the methods of adjustments included in officially reported coverage data are documented.

At left, official reported data are displayed as red circles along with the administrative data for the period 2000 through 2011 during which national authorities reported these data to WHO and/or UNICEF.

In 2006, officially reported coverage and administrative coverage reports differed for this antigen. And, in this case, no documentation was provided for the difference between the official and administrative reports of coverage.

WHO and UNICEF estimates of national immunization coverage



PHASE 3

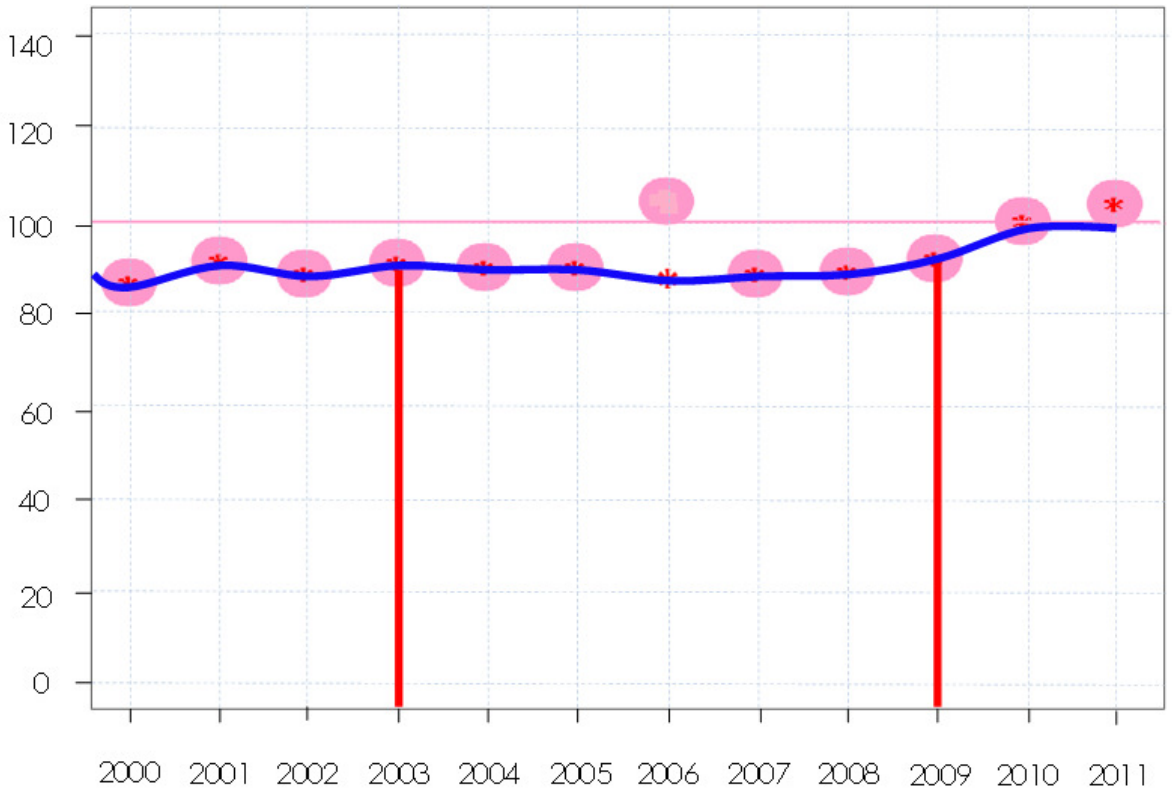
WHO and UNICEF also consider immunization coverage estimates derived from the results of high quality surveys. Surveys allow for estimating coverage in the absence of accurate target population estimates (i.e., denominator data) and capturing immunization coverage from sectors that might not be included as part of the administrative reporting (e.g., private or NGO sector contributions to immunization).

A disadvantage of surveys is their lack of usefulness for timely information on immunization programme interventions because they provide information only on the previous birth cohorts. Also, in countries where immunization card distribution, retention, and utilization are suboptimal, survey-based coverage estimates (particularly for multi-dose antigens) can be biased.

Survey results typically report on annual cohort(s) of children so that all children included have had enough opportunity to receive all vaccinations (e.g. 12–23 months of age). Because estimates are for infant immunizations, survey data are presented to reflect the birth year of the cohort.

At right, the results of two surveys are displayed as the red vertical bars along with the administrative and officially reported coverage data for the period 2000 through 2011. All survey data considered in producing the WHO and UNICEF estimates are displayed on the last page of the country report.

WHO and UNICEF estimates of national immunization coverage



PHASE 4

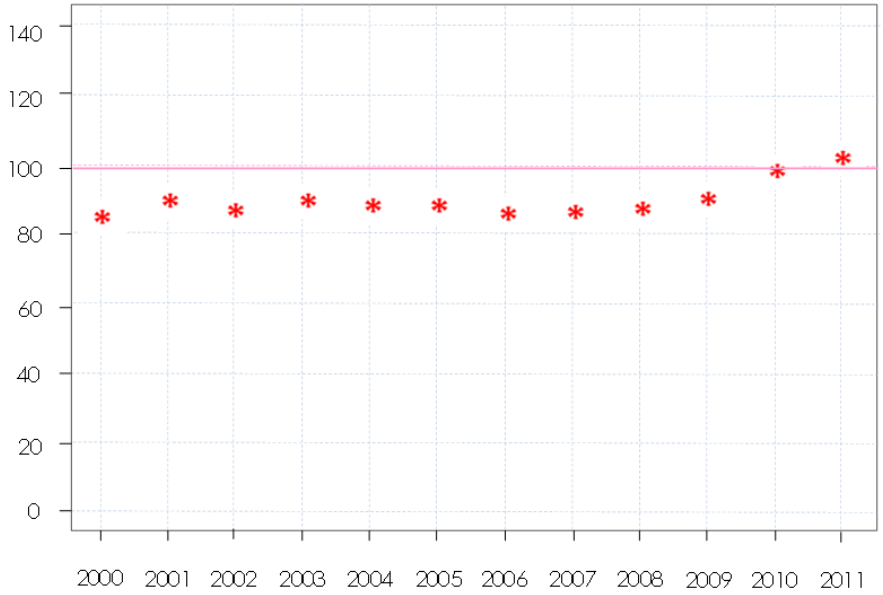
After considering administrative and officially reported coverage data submitted by national authorities as well as survey coverage estimates and other contextual information (e.g., stock-outs, conflict, natural disasters that might disrupt service delivery), WHO and UNICEF estimate the most likely coverage level for each country, vaccine and year (the blue line at left).

A description of the methods and processes that guide the WHO and UNICEF estimates is available online at

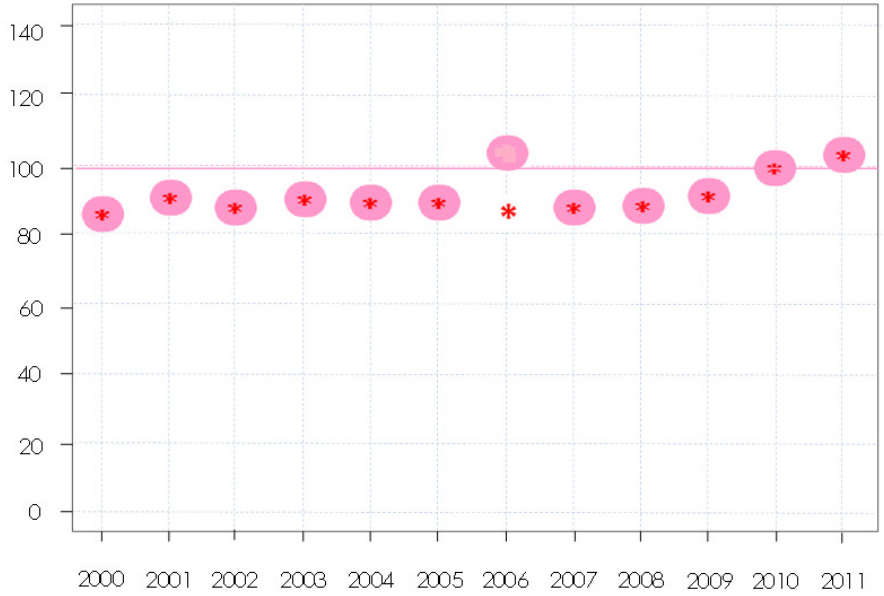
Burton et al. WHO and UNICEF estimates of national infant immunization coverage: methods and processes. Bulletin of the World Health Organization. 2009;87:535-541.
http://www.who.int/bulletin/volumes/87/7/en/

WHO and UNICEF estimates of national immunization coverage

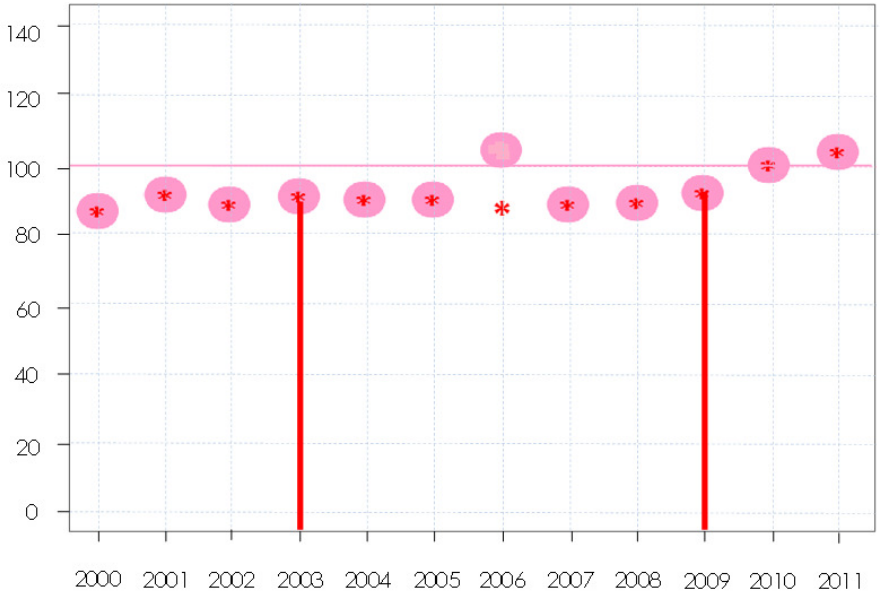
PHASE 1



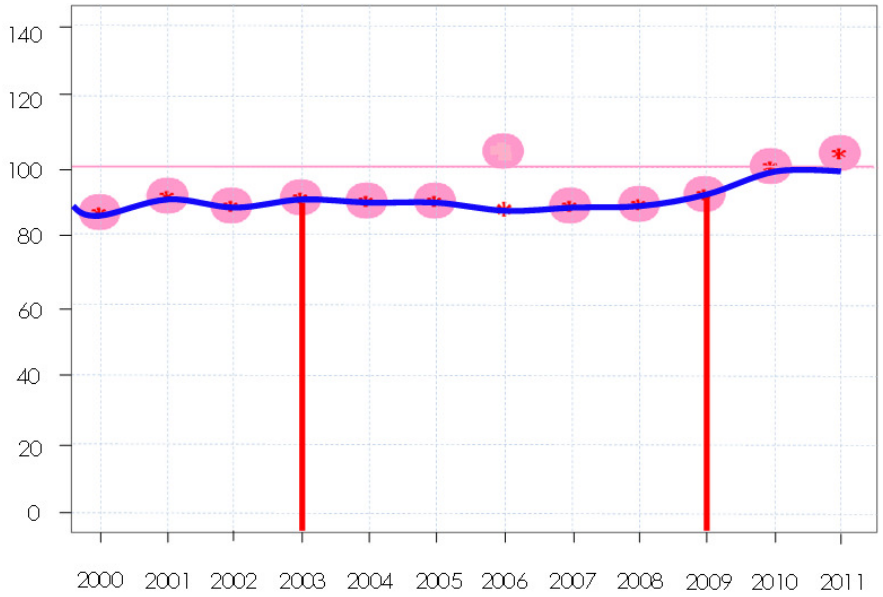
PHASE 2



PHASE 3



PHASE 4

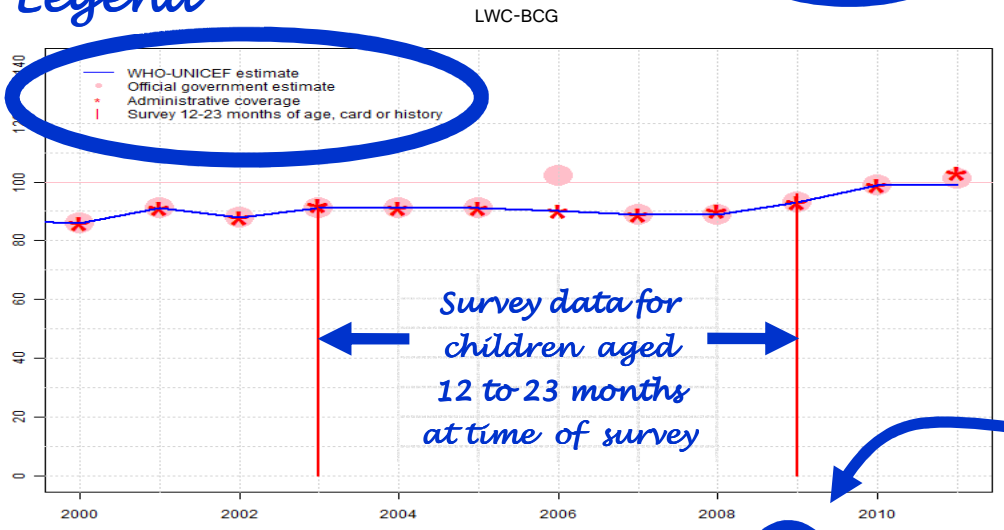


Country name

Llawnroc - BCG

Antigen

Legend



Survey data for children aged 12 to 23 months at time of survey

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Estimate	86	91	88	91	91	91	90	89	8	93	99	
Official	86	91	88	91	91	91	102	89	8	93	99	101
Administrative	86	91	88	92	91	91	90	89	9	93	99	103
Survey	NA	NA	NA	91	NA	NA	NA	NA	N	96	NA	NA
GoC	•••	•••	•••	•••	•••	•••	•	•••	•••	•••	•••	••

Description:

2000: Estimate based on government estimate. GoC=R, S, D
2001: Estimate based on government estimate. GoC=R, S, D
2002: Estimate based on government estimate. GoC=R, S, D
2003: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). GoC=R, S, D
2004: Estimate based on government estimate. GoC=R, S, D
2005: Estimate based on government estimate. GoC=R, S, D
2006: Estimate based on interpolation between coverage reported by national government. Reported data excluded. 102 percent greater than 100 percent. Reported data excluded. Unexplained increase from 91 percent to 102 percent with decrease 89 percent. GoC=D
2007: Estimate based on government estimate. GoC=R, S, D
2008: Estimate based on government estimate. GoC=R, S, D
2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R, S, D
2010: Estimate based on coverage reported by national government GoC=R, S, D
2011: Estimate based on extrapolation from data reported by national government. Reported data excluded. 101 percent greater than 100 percent. GoC=S, D

Text description of the basis for the WHO and UNICEF estimate for each year

Time series data display.

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information th... known quality. ... 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 ... data ... estimates.

••• Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects 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 ... 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 ... of the objective for which they are being used.

WHO and UNICEF estimate

Official government report

Gov't reported administrative data

Survey results

Grade of Confidence

Estimates version