

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	82	74	76	83	86	86	86	84	84	87	87	87
Estimate GoC	••	••	••	•	••	••	•	•	•	•	•	•
Official	94	87	88	95	98	97	112	81	97	100	102	89
Administrative	94	76	88	95	98	97	112	81	97	100	102	100
Survey	NA	NA	NA	*	NA	NA	86	84	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.

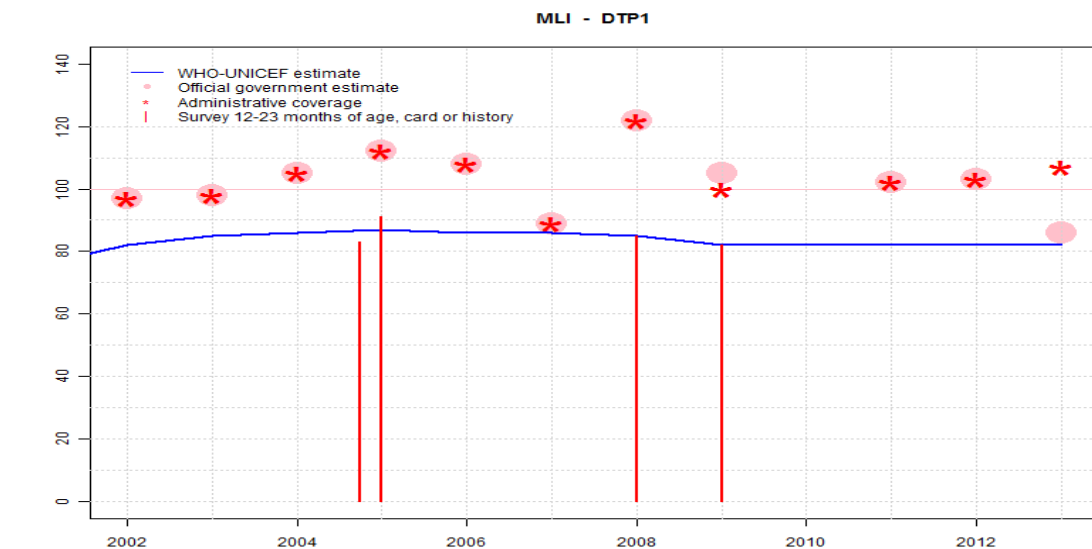
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2002: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2003: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2004: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2005: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 83 percent based on 2 survey(s). Estimate challenged by: R-
- 2006: Reported data calibrated to 2005 and 2008 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2005 and 2008 levels. GoC=S+ D+
- 2008: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 86 percent based on 1 survey(s). Reported data excluded. 112 percent greater than 100 percent. Reported data excluded. Unexplained increase from 97 percent to 112 percent with decrease 81 percent. Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 84 percent based on 1 survey(s). Reported data excluded. Decline in reported coverage from 112 percent to 81 percent with increase to 97 percent. Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate of 84 percent changed from previous revision value of 86 percent. Estimate challenged by: R-
- 2010: Reported data calibrated to 2009 levels. Estimate of 84 percent changed from previous revision value of 86 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 2009 levels. Estimate of 87 percent changed from previous revision value of 89 percent. Estimate challenged by: D-
- 2012: Reported data calibrated to 2009 levels. Reported data excluded. 102 percent greater than 100 percent. Estimate of 87 percent changed from previous revision value of 89 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Reported data excluded. Change in reported coverage from 102 level to 89 percent. Estimate challenged by: D-

Mali - DTP1



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	82	85	86	87	86	86	85	82	82	82	82	82
Estimate GoC	••	••	••	•	•	•	•	•	••	•	•	•
Official	97	98	105	112	108	89	122	105	NA	102	103	86
Administrative	97	98	105	112	108	89	122	100	NA	102	103	107
Survey	NA	NA	NA	*	NA	NA	85	82	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: 2012 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.

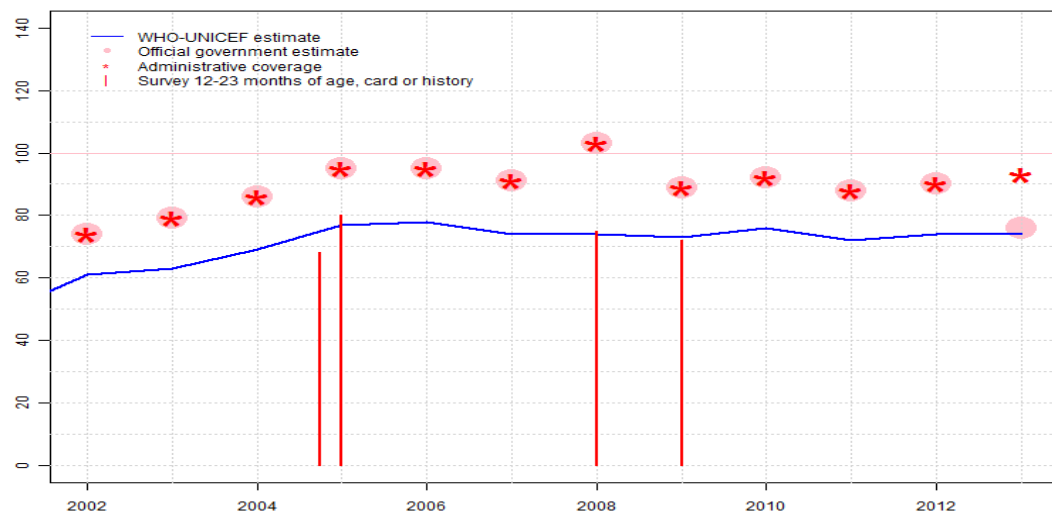
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2002: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2003: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2004: Reported data calibrated to 2000 and 2005 levels. Reported data excluded. 105 percent greater than 100 percent. GoC=S+ D+
- 2005: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 87 percent based on 2 survey(s). Reported data excluded. 112 percent greater than 100 percent. Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2008 levels. Reported data excluded. 108 percent greater than 100 percent. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2008 levels. Reported data excluded. Decline in reported coverage from 108 percent to 89 percent with increase to 122 percent. Estimate challenged by: D-
- 2008: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 85 percent based on 1 survey(s). Reported data excluded. 122 percent greater than 100 percent. Reported data excluded. Unexplained increase from 89 percent to 122 percent with decrease 105 percent. Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 82 percent based on 1 survey(s). Reported data excluded. 105 percent greater than 100 percent. Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate of 82 percent changed from previous revision value of 85 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 levels. Estimate of 82 percent changed from previous revision value of 85 percent. GoC=S+
- 2011: Reported data calibrated to 2009 levels. Reported data excluded. 102 percent greater than 100 percent. Estimate of 82 percent changed from previous revision value of 85 percent. Estimate challenged by: D-
- 2012: Reported data calibrated to 2009 levels. Reported data excluded. 103 percent greater than 100 percent. Estimate of 82 percent changed from previous revision value of 85 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Reported data excluded. Change in reported coverage from 103 level to 86 percent. Estimate challenged by: D-

Mali - DTP3

MLI - DTP3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	61	63	69	77	78	74	74	73	76	72	74	74
Estimate GoC	••	••	••	•	••	••	•	•	•	•	•	•
Official	74	79	86	95	95	91	103	89	92	88	90	76
Administrative	74	79	86	95	95	91	103	89	92	88	90	93
Survey	NA	NA	NA	*	NA	NA	75	72	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: 2012 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.

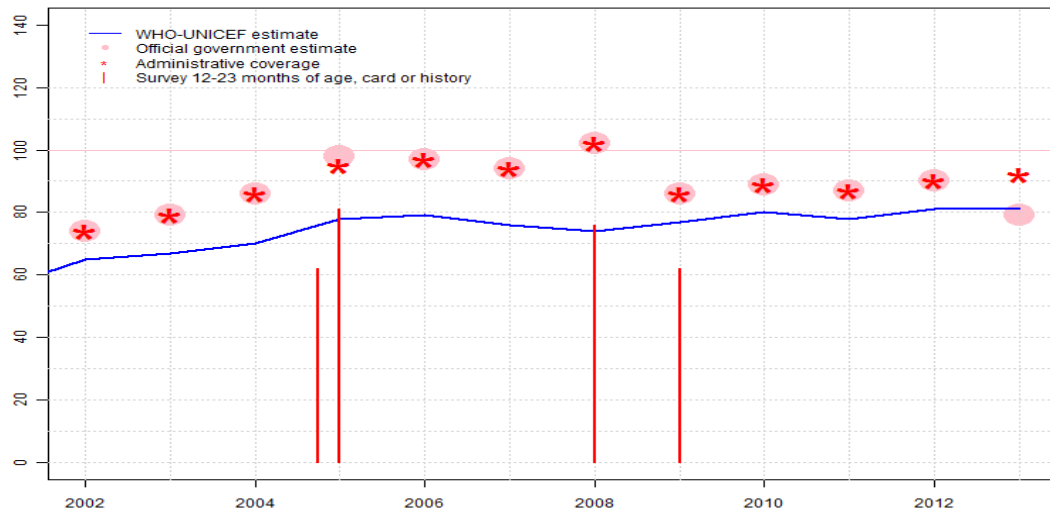
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2002: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2003: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2004: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2005: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 77 percent based on 2 survey(s). Mali Demographic and Health Survey, 2006 card or history results of 68 percent modified for recall bias to 73 percent based on 1st dose card or history coverage of 83 percent, 1st dose card only coverage of 60 percent and 3d dose card only coverage of 53 percent. Estimate challenged by: R-
- 2006: Reported data calibrated to 2005 and 2008 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2005 and 2008 levels. GoC=S+ D+
- 2008: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 74 percent based on 1 survey(s). Mali Evaluation of Routine Immunization Coverage, 2009-2010 card or history results of 75 percent modified for recall bias to 74 percent based on 1st dose card or history coverage of 85 percent, 1st dose card only coverage of 54 percent and 3d dose card only coverage of 47 percent. Reported data excluded. 103 percent greater than 100 percent. Reported data excluded. Unexplained increase from 91 percent to 103 percent with decrease 89 percent. Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 73 percent based on 1 survey(s). Mali Multiple Indicator Cluster Survey 2010 card or history results of 72 percent modified for recall bias to 73 percent based on 1st dose card or history coverage of 82 percent, 1st dose card only coverage of 55 percent and 3d dose card only coverage of 49 percent. Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 levels. Estimate challenged by: D-
- 2011: Reported data calibrated to 2009 levels. Estimate challenged by: D-
- 2012: Reported data calibrated to 2009 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Reported data excluded. Change in reported coverage from 90 level to 76 percent. Estimate challenged by: D-

Mali - Pol3

MLI - Pol3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	65	67	70	78	79	76	74	77	80	78	81	81
Estimate GoC	••	••	••	•	••	••	•	•	••	••	•	•
Official	74	79	86	98	97	94	102	86	89	87	90	79
Administrative	74	79	86	95	97	94	102	86	89	87	90	92
Survey	NA	NA	NA	*	NA	NA	76	62	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.

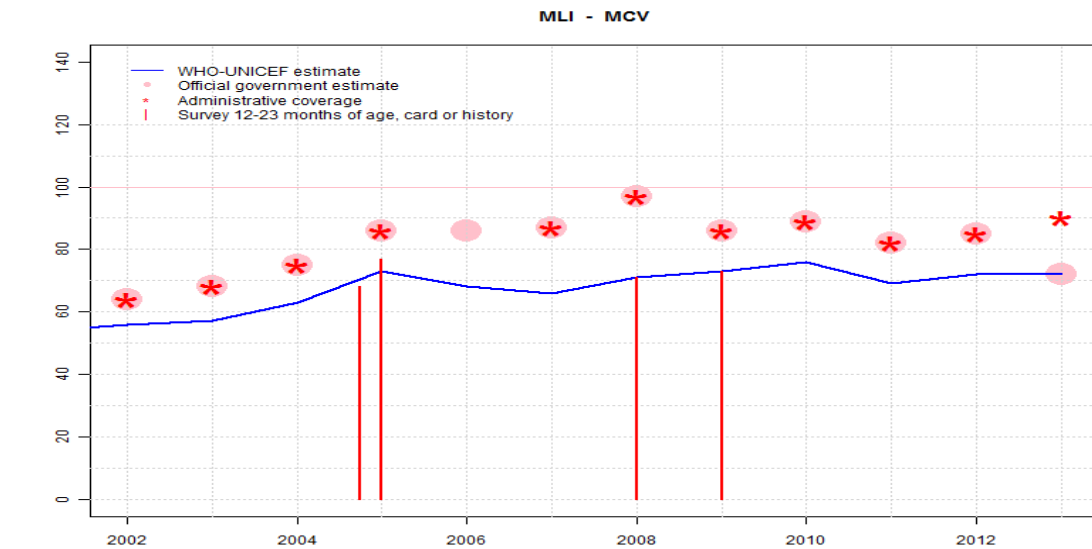
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2002: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2003: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2004: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2005: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 78 percent based on 2 survey(s). Mali Demographic and Health Survey, 2006 card or history results of 62 percent modified for recall bias to 75 percent based on 1st dose card or history coverage of 85 percent, 1st dose card only coverage of 60 percent and 3d dose card only coverage of 53 percent. Estimate challenged by: R-
- 2006: Reported data calibrated to 2005 and 2008 levels. GoC=S+ D+
- 2007: Reported data calibrated to 2005 and 2008 levels. GoC=S+ D+
- 2008: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 74 percent based on 1 survey(s). Mali Evaluation of Routine Immunization Coverage, 2009-2010 card or history results of 76 percent modified for recall bias to 74 percent based on 1st dose card or history coverage of 84 percent, 1st dose card only coverage of 52 percent and 3d dose card only coverage of 46 percent. Reported data excluded. 102 percent greater than 100 percent. Estimate challenged by: D-R-
- 2009: Estimate based on survey results. Results for other vaccines to do not support reported data. Mali Multiple Indicator Cluster Survey 2010 card or history results of 62 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 85 percent, 1st dose card only coverage of 54 percent and 3d dose card only coverage of 49 percent. Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate of 77 percent changed from previous revision value of 70 percent. Estimate challenged by: R-
- 2010: Reported data calibrated to 2009 levels. Estimate of 80 percent changed from previous revision value of 73 percent. GoC=S+ D+
- 2011: Reported data calibrated to 2009 levels. Estimate of 78 percent changed from previous revision value of 71 percent. GoC=S+ D+
- 2012: Reported data calibrated to 2009 levels. Estimate of 81 percent changed from previous revision value of 74 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Reported data excluded. Change in reported coverage from 90 level to 79 percent. Estimate challenged by: D-

Mali - MCV



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	56	57	63	73	68	66	71	73	76	69	72	72
Estimate GoC	••	••	••	•	••	•	•	•	•	•	•	•
Official	64	68	75	86	86	87	97	86	89	82	85	72
Administrative	64	68	75	86	NA	87	97	86	89	82	85	90
Survey	NA	NA	NA	*	NA	NA	71	73	NA	NA	NA	NA

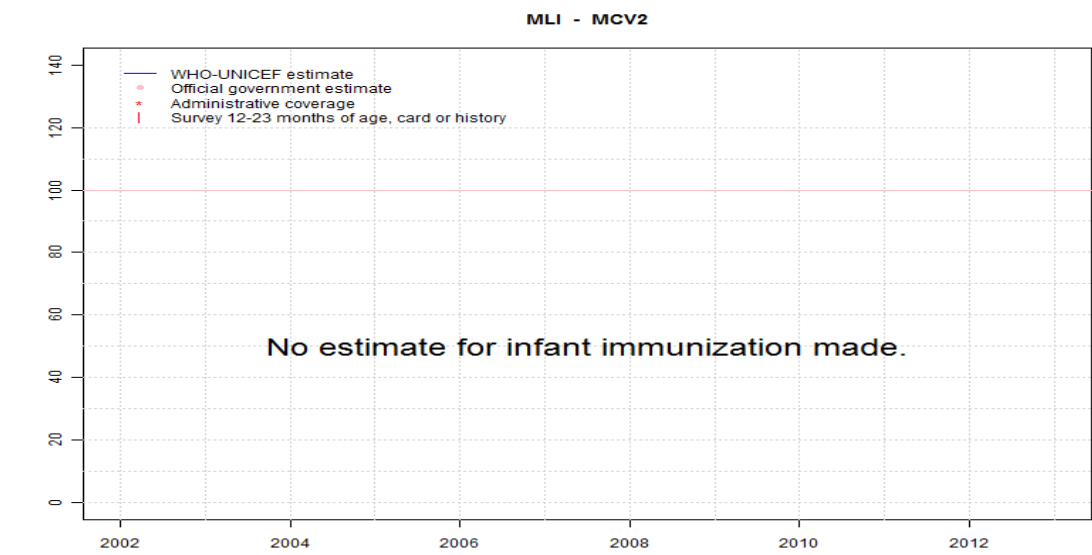
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2012 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:

- 2002: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2003: Reported data calibrated to 2000 and 2005 levels. GoC=D+
- 2004: Reported data calibrated to 2000 and 2005 levels. GoC=S+ D+
- 2005: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 73 percent based on 2 survey(s). Estimate challenged by: R-
- 2006: Reported data calibrated to 2005 and 2008 levels. GoC=S+
- 2007: Reported data calibrated to 2005 and 2008 levels. Estimate challenged by: D-
- 2008: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 71 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 73 percent based on 1 survey(s). Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate of 73 percent changed from previous revision value of 60 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 levels. Estimate of 76 percent changed from previous revision value of 63 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 2009 levels. Estimate of 69 percent changed from previous revision value of 56 percent. Estimate challenged by: D-
- 2012: Reported data calibrated to 2009 levels. Estimate of 72 percent changed from previous revision value of 59 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Reported data excluded. Change in reported coverage from 85 level to 72 percent. Estimate challenged by: D-



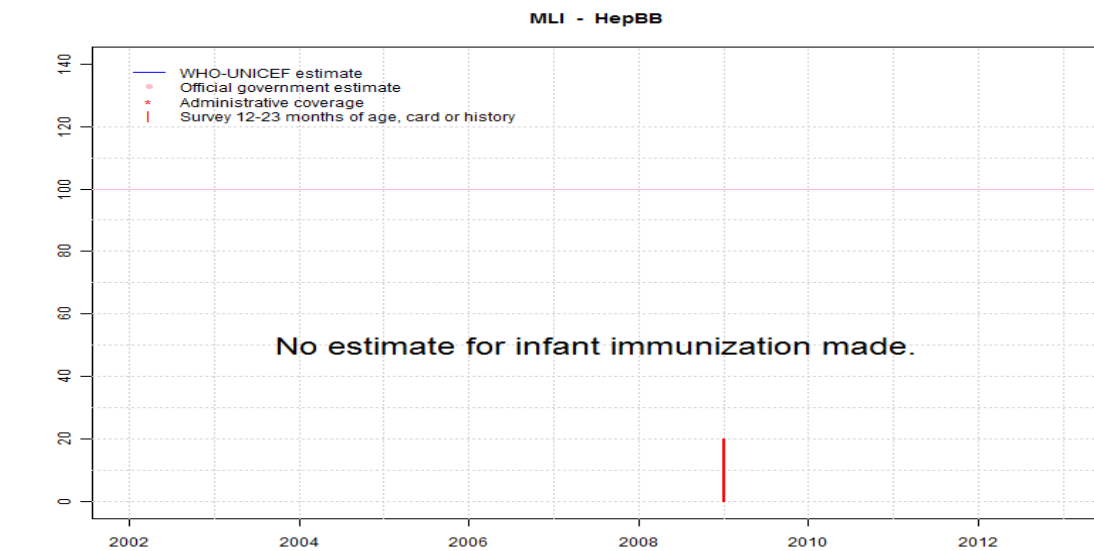
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2012 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.

Mali - HepBB



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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	20	NA	NA	NA	NA

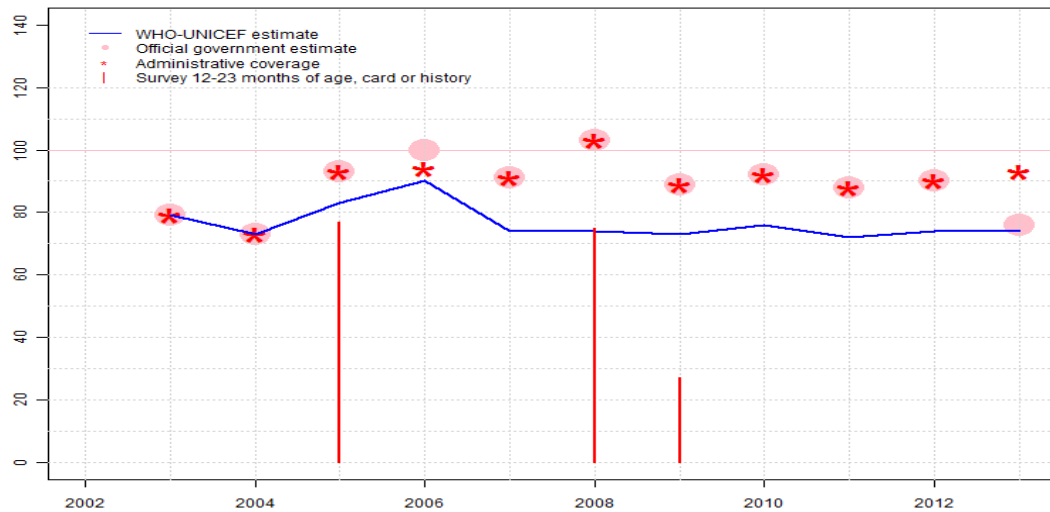
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2012 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.

Mali - HepB3

MLI - HepB3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	79	73	83	90	74	74	73	76	72	74	74
Estimate GoC	NA	•	•	•	•	•	•	•	•	•	•	•
Official	NA	79	73	93	100	91	103	89	92	88	90	76
Administrative	NA	79	73	93	94	91	103	89	92	88	90	93
Survey	NA	NA	NA	77	NA	NA	75	27	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.

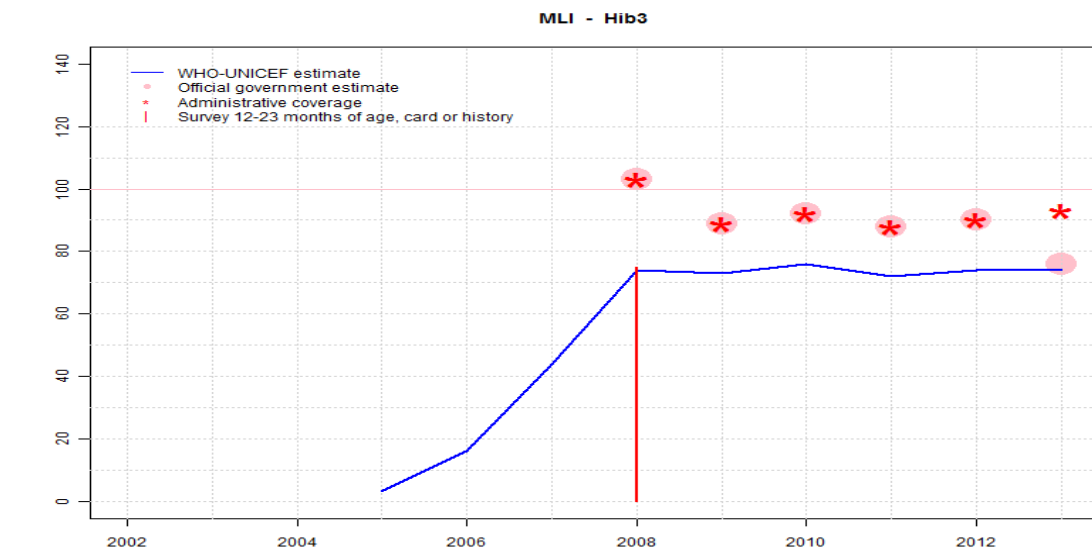
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2003: Estimate follows reported data. HepB vaccine introduced in part of the country in 2001 and nationally in 2002. Reporting started in 2003. Presentation was HepB monovalent until the introduction of DTP-HepB-Hib in 2007. Estimate challenged by: D-R-S-
- 2004: Estimate follows reported data. Estimate challenged by: R-S-
- 2005: Reported data calibrated to 2006 levels. Republic of Mali External Review of EPI, 2006 results ignored by working group. Survey data available for only one of two surveys conducted in review year. Estimate challenged by: S-
- 2006: In 2006 sensitization of the population for Pentavalent introduction led to higher levels of coverage but included children outside the target age group. Reported coverage of 100 percent was reduced to 90 percent to adjust for children vaccinated outside Estimate challenged by: R-S-
- 2007: Estimate follows the DTP3 levels of coverage. Estimate challenged by: D-R-S-
- 2008: Estimate follows DTP3 levels. Mali Evaluation of Routine Immunization Coverage, 2009-2010 card or history results of 75 percent modified for recall bias to 74 percent based on 1st dose card or history coverage of 85 percent, 1st dose card only coverage of 54 percent and 3d dose card only coverage of 47 percent. Reported data excluded. 103 percent greater than 100 percent. Reported data excluded. Unexplained increase from 91 percent to 103 percent with decrease 89 percent. Estimate challenged by: D-R-S-
- 2009: Reported data calibrated to 2008 levels. Mali Multiple Indicator Cluster Survey 2010 results ignored by working group. Hepatitis b vaccine is offered in a pentavalent DTP-HepB-Hib combination vaccine. Coverage of 27 percent is inconsistent with 72 percent DTP3 coverage. Mali Multiple Indicator Cluster Survey 2010 card or history results of 27 percent modified for recall bias to 46 percent based on 1st dose card or history coverage of 46 percent, 1st dose card only coverage of 23 percent and 3d dose card only coverage of 23 percent. Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate challenged by: D-S-
- 2010: Reported data calibrated to 2008 levels. Estimate challenged by: D-S-
- 2011: Reported data calibrated to 2008 levels. Estimate challenged by: D-S-
- 2012: Reported data calibrated to 2008 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2008 levels. Reported data excluded. Decline in reported coverage from 90 level to 76 percent. Estimate challenged by: D-

Mali - Hib3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	3	16	44	74	73	76	72	74	74
Estimate GoC	NA	NA	NA	••	••	••	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	103	89	92	88	90	76
Administrative	NA	NA	NA	NA	NA	NA	103	89	92	88	90	93
Survey	NA	NA	NA	NA	NA	NA	75	NA	NA	NA	NA	NA

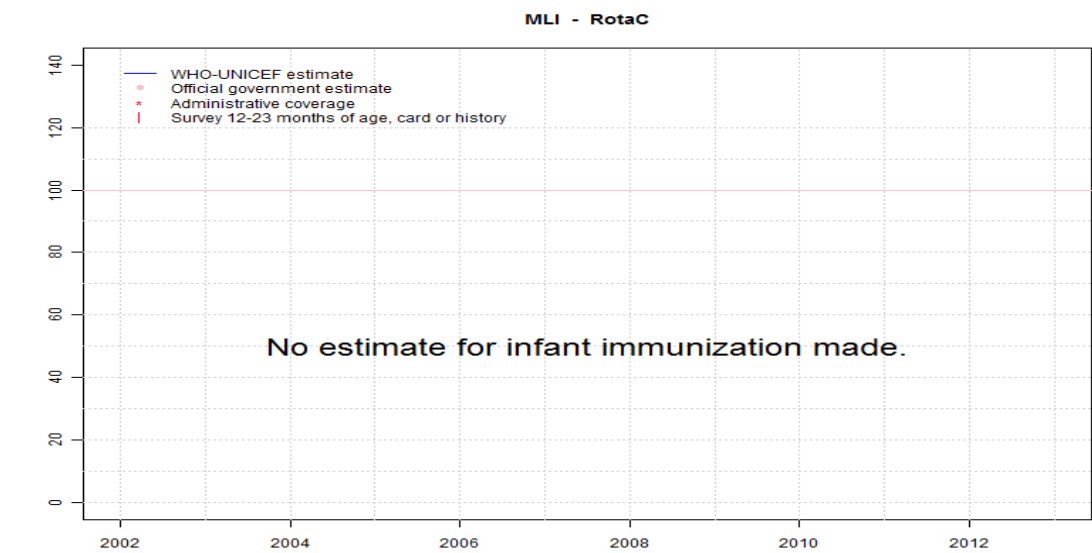
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2012 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:

- 2005: Hib partially introduced in 2005 nationally in 2007 reporting started in 2005
Vaccine presentation is DTP-HepB-Hib. GoC=D+
- 2006: Pentavalent DTP-Hib-HepB vaccine introduced sub nationally, 100 percent coverage achieved in 16 percent of national target population. GoC=D+
- 2007: Pentavalent DTP-Hib-HepB vaccine introduced sub nationally, 94 percent coverage achieved in 47 percent of national target population. GoC=D+
- 2008: Estimate follows DTP3 levels. Mali Evaluation of Routine Immunization Coverage, 2009-2010 card or history results of 75 percent modified for recall bias to 74 percent based on 1st dose card or history coverage of 85 percent, 1st dose card only coverage of 54 percent and 3d dose card only coverage of 47 percent. Reported data excluded. 103 percent greater than 100 percent. Estimate challenged by: D-R-
- 2009: Estimate follows DTP3 levels. Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 levels. Estimate challenged by: D-
- 2011: Reported data calibrated to 2009 levels. Estimate challenged by: D-
- 2012: Reported data calibrated to 2009 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Reported data excluded. Decline in reported coverage from 90 level to 76 percent. Estimate challenged by: D-



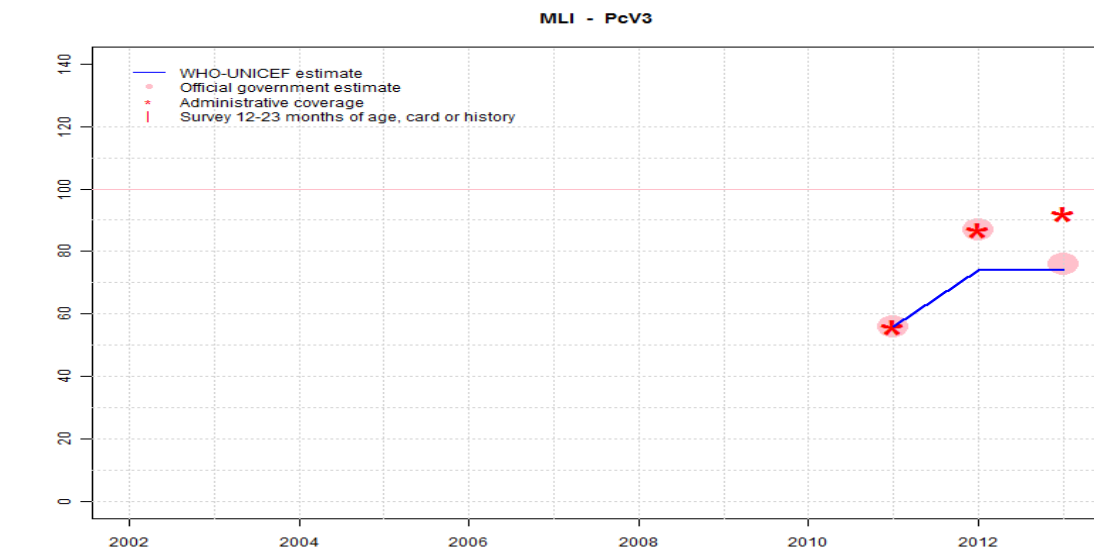
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2012 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.

Mali - PcV3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	74	74
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	87	76
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	87	92
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.

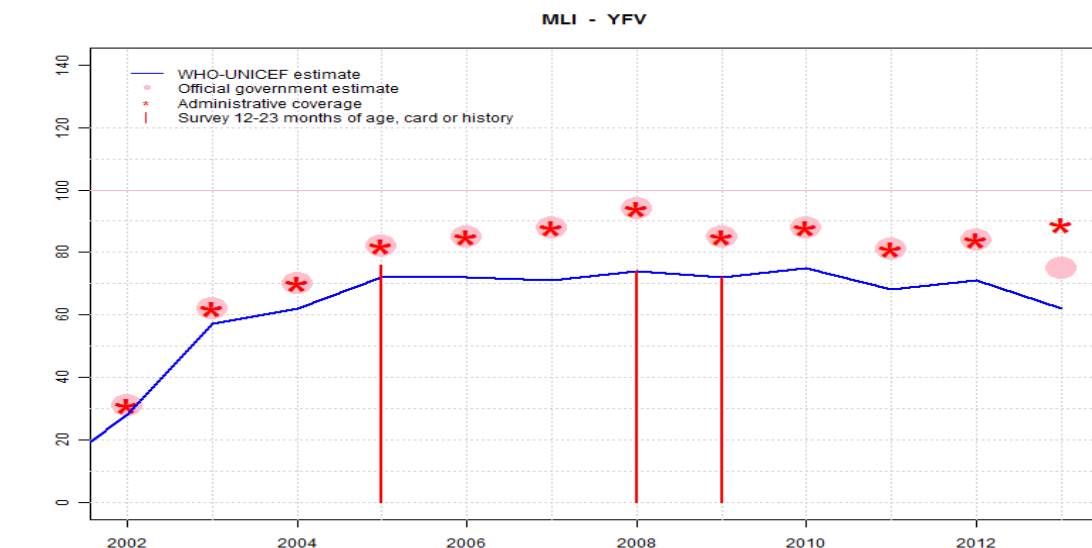
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2011: Pneumococcal conjugate vaccine was introduced in 2011. GoC=R+
- 2012: Estimate based on DTP3 coverage. Reported data excluded. Unexplained increase from 56 percent to 87 percent with decrease 76 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Reported data excluded. Decline in reported coverage from 87 level to 76 percent. Estimate challenged by: D-

Mali - YFV



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	28	57	62	72	72	71	74	72	75	68	71	62
Estimate GoC	●●	●	●	●	●	●	●	●	●	●	●	●
Official	31	62	70	82	85	88	94	85	88	81	84	75
Administrative	31	62	70	82	85	88	94	85	88	81	84	89
Survey	NA	NA	NA	76	NA	NA	74	72	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: 2012 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:

- 2002: Reported data calibrated to 2001 and 2005 levels. GoC=D+
- 2003: Reported data calibrated to 2001 and 2005 levels. Estimate challenged by: S-
- 2004: Reported data calibrated to 2001 and 2005 levels. Estimate challenged by: S-
- 2005: Estimate follows MCV coverage levels. Republic of Mali External Review of EPI, 2006 results ignored by working group. Results based on only one of two surveys available in review year. Estimate challenged by: R-S-
- 2006: Reported data calibrated to 2005 and 2008 levels. Estimate challenged by: S-
- 2007: Reported data calibrated to 2005 and 2008 levels. Estimate challenged by: S-
- 2008: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 74 percent based on 1 survey(s). Estimate challenged by: R-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 72 percent based on 1 survey(s). Decline in 2009 due to an increase the denominator issued by du Recensement General de la Population et de l Habitat in 2009. Estimate of 72 percent changed from previous revision value of 65 percent. Estimate challenged by: D-R-
- 2010: Reported data calibrated to 2009 levels. Estimate of 75 percent changed from previous revision value of 68 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 2009 levels. Estimate of 68 percent changed from previous revision value of 61 percent. Estimate challenged by: D-
- 2012: Reported data calibrated to 2009 levels. Estimate of 71 percent changed from previous revision value of 64 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2009 levels. Estimate challenged by: D-

Mali - survey details

2009 Mali Multiple Indicator Cluster Survey 2010

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	83	12-23 m	5122	59
BCG	Card	54	12-23 m	-	59
BCG	Card or History	84	12-23 m	5122	59
BCG	History	30	12-23 m	-	59
DTP1	C or H <12 months	81	12-23 m	5122	59
DTP1	Card	55	12-23 m	-	59
DTP1	Card or History	82	12-23 m	5122	59
DTP1	History	28	12-23 m	-	59
DTP3	C or H <12 months	69	12-23 m	5122	59
DTP3	Card	49	12-23 m	-	59
DTP3	Card or History	72	12-23 m	5122	59
DTP3	History	23	12-23 m	-	59
HepB1	C or H <12 months	46	12-23 m	5122	59
HepB1	Card	23	12-23 m	-	59
HepB1	Card or History	46	12-23 m	5122	59
HepB1	History	24	12-23 m	-	59
HepB3	C or H <12 months	26	12-23 m	5122	59
HepB3	Card	23	12-23 m	-	59
HepB3	Card or History	27	12-23 m	5122	59
HepB3	History	4	12-23 m	-	59
HepBB	Card	0	12-23 m	-	59
HepBB	Card or History	20	12-23 m	5122	59
HepBB	History	20	12-23 m	-	59
MCV	C or H <12 months	67	12-23 m	5122	59
MCV	Card	47	12-23 m	-	59
MCV	Card or History	73	12-23 m	5122	59
MCV	History	26	12-23 m	-	59
Pol1	C or H <12 months	84	12-23 m	5122	59
Pol1	Card	54	12-23 m	-	59
Pol1	Card or History	85	12-23 m	5122	59
Pol1	History	31	12-23 m	-	59
Pol3	C or H <12 months	60	12-23 m	5122	59
Pol3	Card	49	12-23 m	-	59
Pol3	Card or History	62	12-23 m	5122	59
Pol3	History	13	12-23 m	-	59
YFV	C or H <12 months	67	12-23 m	5122	59
YFV	Card	46	12-23 m	-	59

YFV	Card or History	72	12-23 m	5122	59
YFV	History	27	12-23 m	-	59

2008 Evaluation de la couverture vaccinale du PEV Mali, 2009-2010

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	54	12-23 m	11760	65
BCG	Card or History	86	12-23 m	11760	65
BCG	History	32	12-23 m	11760	65
DTP1	Card	54	12-23 m	11760	65
DTP1	Card or History	85	12-23 m	11760	65
DTP1	History	31	12-23 m	11760	65
DTP3	Card	47	12-23 m	11760	65
DTP3	Card or History	75	12-23 m	11760	65
DTP3	History	28	12-23 m	11760	65
HepB1	Card	54	12-23 m	11760	65
HepB1	Card or History	85	12-23 m	11760	65
HepB1	History	31	12-23 m	11760	65
HepB3	Card	47	12-23 m	11760	65
HepB3	Card or History	75	12-23 m	11760	65
HepB3	History	28	12-23 m	11760	65
Hib1	Card	54	12-23 m	11760	65
Hib1	Card or History	85	12-23 m	11760	65
Hib1	History	31	12-23 m	11760	65
Hib3	Card	47	12-23 m	11760	65
Hib3	Card or History	75	12-23 m	11760	65
Hib3	History	28	12-23 m	11760	65
MCV	Card	46	12-23 m	11760	65
MCV	Card or History	71	12-23 m	11760	65
MCV	History	26	12-23 m	11760	65
Pol1	Card	52	12-23 m	11760	65
Pol1	Card or History	84	12-23 m	11760	65
Pol1	History	33	12-23 m	11760	65
Pol3	Card	46	12-23 m	11760	65
Pol3	Card or History	76	12-23 m	11760	65
Pol3	History	30	12-23 m	11760	65
YFV	Card	43	12-23 m	11760	65
YFV	Card or History	74	12-23 m	11760	65

Mali - survey details

YFV History 30 12-23 m 11760 65

2005 Enquête Démographique et de Santé du Mali, 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	75	12-23 m	2626	61
BCG	Card	54	12-23 m	2626	61
BCG	Card or History	77	12-23 m	2626	61
BCG	History	23	12-23 m	2626	61
DTP1	C or H <12 months	80	12-23 m	2626	61
DTP1	Card	60	12-23 m	2626	61
DTP1	Card or History	83	12-23 m	2626	61
DTP1	History	23	12-23 m	2626	61
DTP3	C or H <12 months	62	12-23 m	2626	61
DTP3	Card	53	12-23 m	2626	61
DTP3	Card or History	68	12-23 m	2626	61
DTP3	History	15	12-23 m	2626	61
MCV	C or H <12 months	59	12-23 m	2626	61
MCV	Card	49	12-23 m	2626	61
MCV	Card or History	68	12-23 m	2626	61
MCV	History	20	12-23 m	2626	61
Pol1	C or H <12 months	82	12-23 m	2626	61
Pol1	Card	60	12-23 m	2626	61
Pol1	Card or History	85	12-23 m	2626	61
Pol1	History	26	12-23 m	2626	61
Pol3	C or H <12 months	57	12-23 m	2626	61
Pol3	Card	53	12-23 m	2626	61
Pol3	Card or History	62	12-23 m	2626	61
Pol3	History	9	12-23 m	2626	61

2005 République du Mali, Programme élargi du vaccination, Re-
vue externe èà-

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	89	12-23 m	1710	78
DTP1	Card or History	91	12-23 m	1710	78
DTP3	Card or History	80	12-23 m	1710	78

HepB1	Card or History	87	12-23 m	1710	78
HepB3	Card or History	77	12-23 m	1710	78
MCV	Card or History	77	12-23 m	1710	78
Pol1	Card or History	91	12-23 m	1710	78
Pol3	Card or History	81	12-23 m	1710	78
YFV	Card or History	76	12-23 m	1710	78

2000 Enquête Démographique et de Santé Mali 2001, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	64	12-23 m	2197	48
BCG	Card	47	12-23 m	2197	48
BCG	Card or History	69	12-23 m	2197	48
BCG	History	22	12-23 m	2197	48
DTP1	C or H <12 months	56	12-23 m	2197	48
DTP1	Card	44	12-23 m	2197	48
DTP1	Card or History	61	12-23 m	2197	48
DTP1	History	17	12-23 m	2197	48
DTP3	C or H <12 months	34	12-23 m	2197	48
DTP3	Card	31	12-23 m	2197	48
DTP3	Card or History	40	12-23 m	2197	48
DTP3	History	8	12-23 m	2197	48
MCV	C or H <12 months	36	12-23 m	2197	48
MCV	Card	36	12-23 m	2197	48
MCV	Card or History	49	12-23 m	2197	48
MCV	History	13	12-23 m	2197	48
Pol1	C or H <12 months	68	12-23 m	2197	48
Pol1	Card	46	12-23 m	2197	48
Pol1	Card or History	74	12-23 m	2197	48
Pol1	History	28	12-23 m	2197	48
Pol3	C or H <12 months	34	12-23 m	2197	48
Pol3	Card	33	12-23 m	2197	48
Pol3	Card or History	39	12-23 m	2197	48
Pol3	History	6	12-23 m	2197	48

1997 Enquete de couverture vaccinale au Mali 1998

Mali - survey details

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen		DTP3	Card or History	52	12-23 m	1521	57
BCG	Card	62	12-23 m	1521	57		MCV	Card	41	12-23 m	1521	57
BCG	Card or History	84	12-23 m	1521	57		MCV	Card or History	57	12-23 m	1521	57
DTP1	Card	52	12-23 m	1521	57		Pol3	Card	37	12-23 m	1521	57
DTP1	Card or History	79	12-23 m	1521	57		Pol3	Card or History	52	12-23 m	1521	57
DTP3	Card	37	12-23 m	1521	57							

Further information and estimates prior to 2002 are available at:

<http://www.data.unicef.org/child-health/immunization>

http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html

Mali

WHO/UNICEF Estimates of Protection at Birth (PAB) against tetanus

In countries where tetanus is recommended for girls and women coverage is usually reported as "TT2+", i.e. the proportion of (pregnant) women who have received their second or superior TT dose in a given year. TT2 + coverage, however, can under-represent the actual proportion of births that are protected against tetanus as it does not include women who have previously received protective doses, women who received one dose without documentation of previous doses, and women who received doses in TT (or Td) supplemental immunization activities (SIA). In addition, girls who have received DTP in their childhood and are entering childbearing age, may be protected with TT booster doses.

WHO and UNICEF have developed a model that takes into account the above scenarios, and calculates the proportion of births in a given year that can be considered as having been protected against tetanus - "Protection at Birth".

In this model, annual cohorts of women are followed from infancy through their life. A proportion receive DTP in infancy (estimated based on the WHO-UNICEF estimates of DTP3 coverage). In addition some of these women also receive TT through routine services when they are pregnant and may also receive TT during SIAs. The model also adjusts reported data, taking into account coverage patterns in other years, and/or results available through surveys. The duration of protection is then calculated, based on WHO estimates of the duration of protection by doses ever received. The proportion of births that are protected against tetanus as a result of maternal immunization reflects the tetanus immunization received by the mother throughout her life rather than simply the TT immunizations received during the current pregnancy.

Year	PAB coverage estimate (%)
2002	59
2003	60
2004	86
2005	86
2006	89
2007	90
2008	92
2009	92
2010	85
2011	89
2012	89
2013	85

¹ This model is described in: Griffiths U., Wolfson L., Quddus A., Younus M., Hafiz R.. Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan. Bulletin of the World Health Organization 2004; 82:643-651.