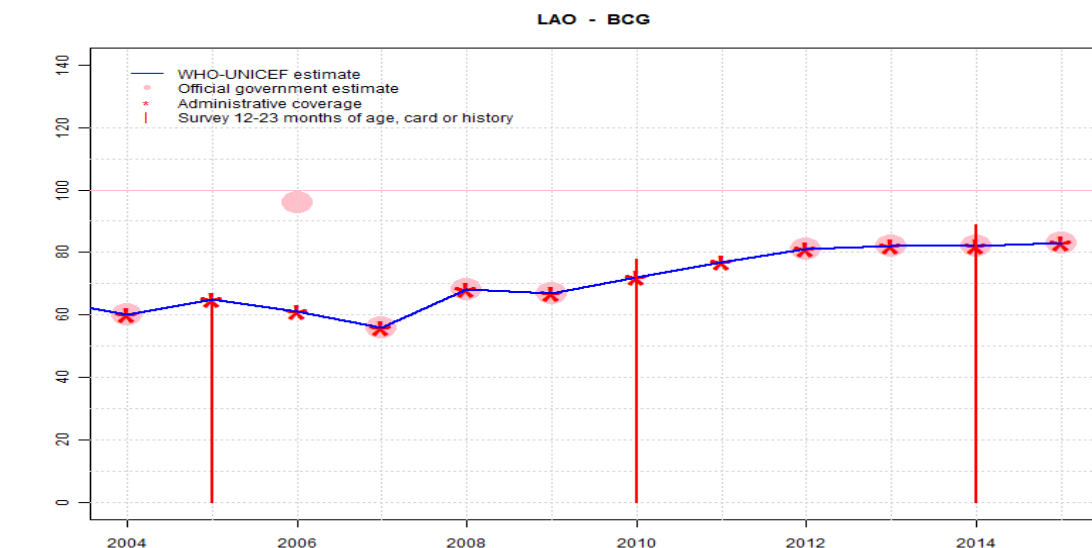


Lao People's Democratic Republic - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	60	65	61	56	68	67	72	77	81	82	82	83
Estimate GoC	•	•	•	•••	•••	••	•	•••	•••	•••	•••	•••
Official	60	NA	96	56	68	67	NA	NA	81	82	82	83
Administrative	60	65	61	56	68	67	72	77	81	82	82	83
Survey	NA	64	NA	NA	NA	NA	78	NA	NA	NA	89	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: 2015 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.

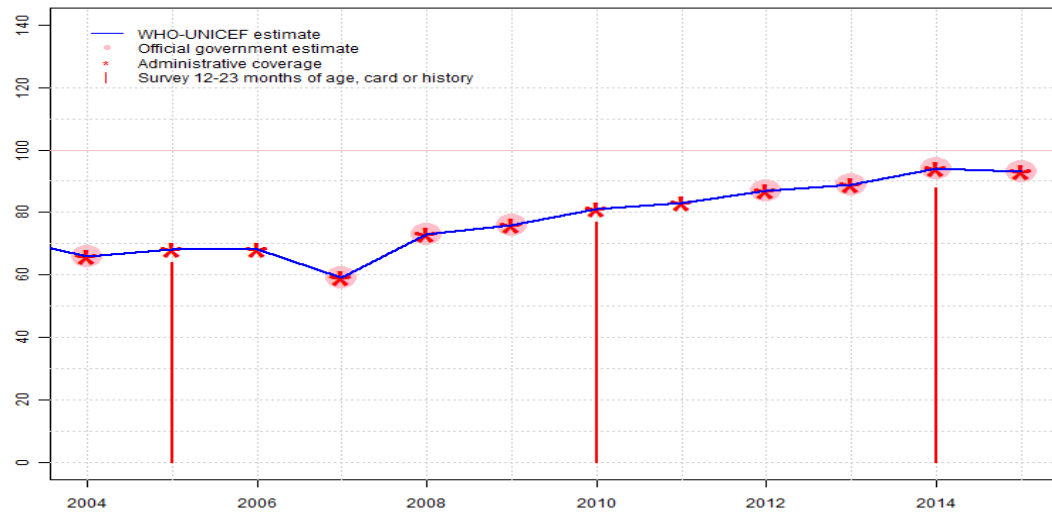
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 64 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on reported administrative data. The 2006 estimate is based on administrative coverage using the projections from the National Statistics Center, while the national official estimate is based on the EPI system registration books. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. . GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ D+
- 2010: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 78 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 89 percent based on 1 survey(s). Programme reports one month stock-out at national level. GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - DTP1

LAO - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	66	68	68	59	73	76	81	83	87	89	94	93
Estimate GoC	•	•	•	•••	•••	•••	•	•••	•••	•••	•••	•••
Official	66	NA	NA	59	73	76	NA	NA	87	89	94	93
Administrative	66	68	68	59	73	76	81	83	87	89	94	93
Survey	NA	64	NA	NA	NA	NA	77	NA	NA	NA	88	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: 2015 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.

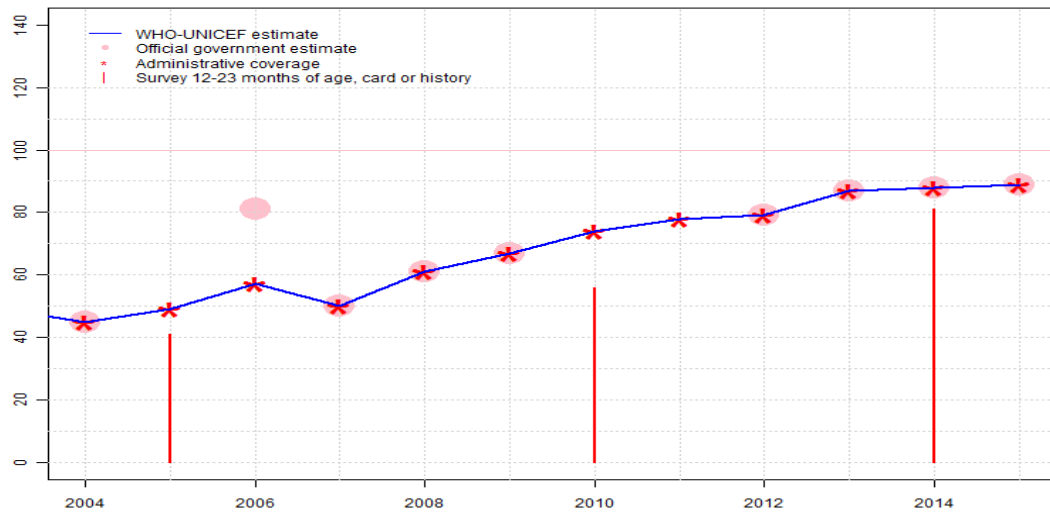
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Reported data calibrated to 1997 and 2005 levels. Estimate challenged by: D-
- 2005: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 64 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on reported administrative data. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. . GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 77 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 88 percent based on 1 survey(s). GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - DTP3

LAO - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	45	49	57	50	61	67	74	78	79	87	88	89
Estimate GoC	••	•••	••	•••	•••	•••	•	••	•••	•••	•••	•••
Official	45	NA	81	50	61	67	NA	NA	79	87	88	89
Administrative	45	49	57	50	61	67	74	78	79	87	88	89
Survey	NA	41	NA	NA	NA	NA	56	NA	NA	NA	81	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: 2015 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.

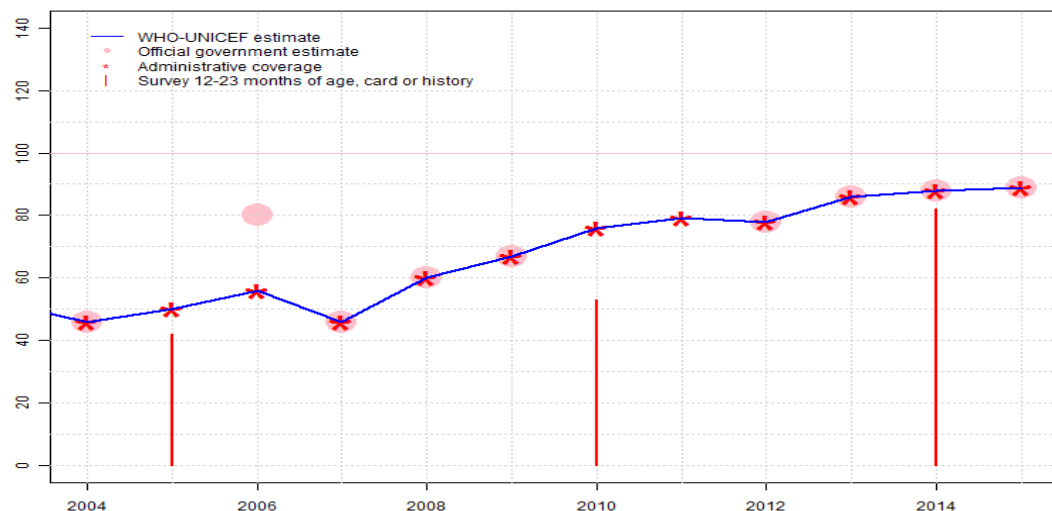
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Reported data calibrated to 2001 and 2005 levels. GoC=S+ D+
- 2005: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 45 percent based on 1 survey(s). Lao PDR Multiple Indicator Cluster Survey 2006 Final Report card or history results of 41 percent modified for recall bias to 45 percent based on 1st dose card or history coverage of 64 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 34 percent. GoC=R+ S+ D+
- 2006: Estimate based on reported administrative data. The 2006 estimate is based on administrative coverage using the projections from the National Statistics Center, while the national official estimate is based on the EPI system registration books. GoC=R+ D+
- 2007: Estimate based on coverage reported by national government. . GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate is based on reported coverage supported by survey. Lao Social Indicator Survey (LSIS) 2011 - 12 (Multiple Indicator Cluster Survey / Demographic and Health Survey) card or history results of 56 percent modified for recall bias to 63 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 45 percent and 3d dose card only coverage of 37 percent. Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 83 percent based on 1 survey(s). National Immunization Survey 2015, Lao People's Democratic Republic (Lao PDR) card or history results of 81 percent modified for recall bias to 83 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 73 percent and 3d dose card only coverage of 69 percent. GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - Pol3

LAO - Pol3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	46	50	56	46	60	67	76	79	78	86	88	89
Estimate GoC	●●●	●●●	●●●	●●●	●●●	●●●	●	●●	●●●	●●●	●●●	●●●
Official	46	NA	80	46	60	67	NA	NA	78	86	88	89
Administrative	46	50	56	46	60	67	76	79	78	86	88	89
Survey	NA	42	NA	NA	NA	NA	53	NA	NA	NA	82	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.

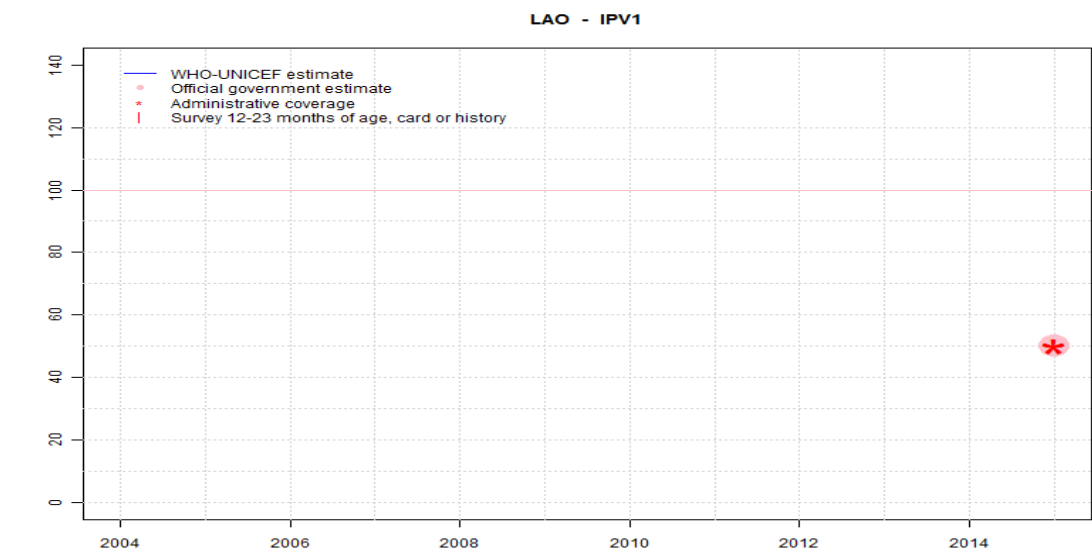
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 47 percent based on 1 survey(s). Lao PDR Multiple Indicator Cluster Survey 2006 Final Report card or history results of 42 percent modified for recall bias to 47 percent based on 1st dose card or history coverage of 67 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 34 percent. GoC=R+ S+ D+
- 2006: Estimate based on reported administrative data. The 2006 estimate is based on administrative coverage using the projections from the National Statistics Center, while the national official estimate is based on the EPI system registration books. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government. . GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 66 percent based on 1 survey(s). Lao Social Indicator Survey (LSIS) 2011 - 12 (Multiple Indicator Cluster Survey / Demographic and Health Survey) card or history results of 53 percent modified for recall bias to 66 percent based on 1st dose card or history coverage of 78 percent, 1st dose card only coverage of 44 percent and 3d dose card only coverage of 37 percent. Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 83 percent based on 1 survey(s). National Immunization Survey 2015, Lao People's Democratic Republic (Lao PDR) card or history results of 82 percent modified for recall bias to 83 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 73 percent and 3d dose card only coverage of 69 percent. GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - IPV1



Description:

2015: IPV introduced in 2015. Programme reports 50 percent coverage in 25 percent of the national target population. Estimate is based on total annual national target population. Estimate challenged by: R-

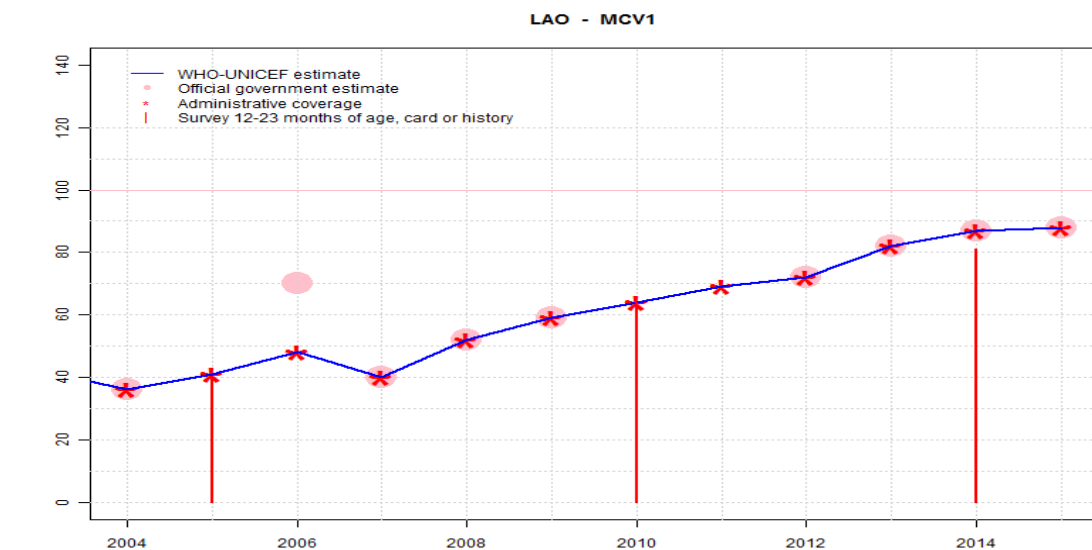
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2015 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.

Lao People's Democratic Republic - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	36	41	48	40	52	59	64	69	72	82	87	88
Estimate GoC	●●●	●●●	●●●	●●●	●●	●●●	●	●●●	●●●	●●●	●●●	●●●
Official	36	NA	70	40	52	59	NA	NA	72	82	87	88
Administrative	36	41	48	40	52	59	64	69	72	82	87	88
Survey	NA	40	NA	NA	NA	NA	64	NA	NA	NA	81	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.

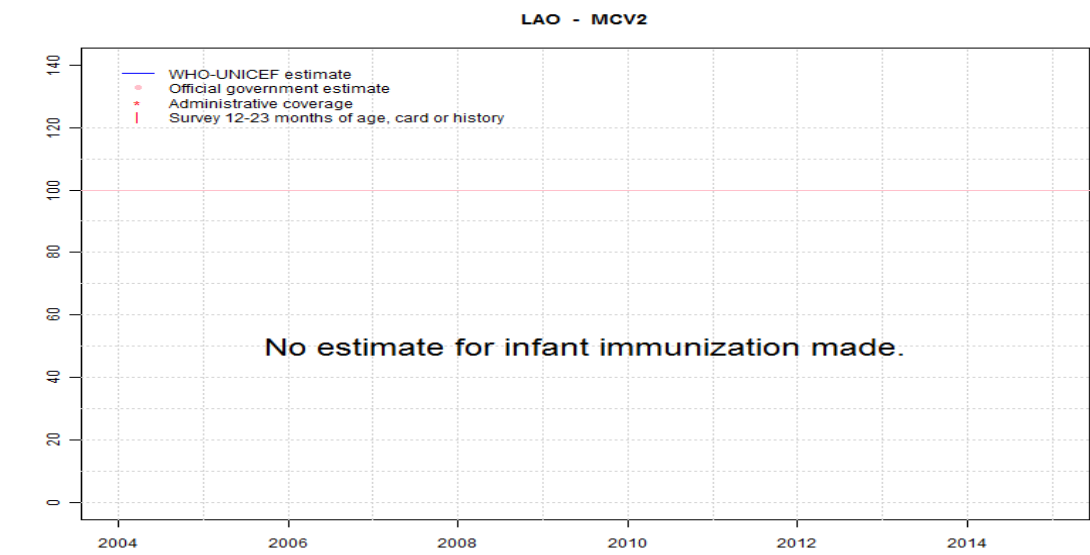
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 40 percent based on 1 survey(s). GoC=R+ S+ D+
- 2006: Estimate based on reported administrative data. The 2006 estimate is based on administrative coverage using the projections from the National Statistics Center, while the national official estimate is based on the EPI system registration books. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government. . GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2010: Estimate based on administrative data reported by national government supported by survey. Survey evidence of 64 percent based on 1 survey(s). Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 81 percent based on 1 survey(s). GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - MCV2



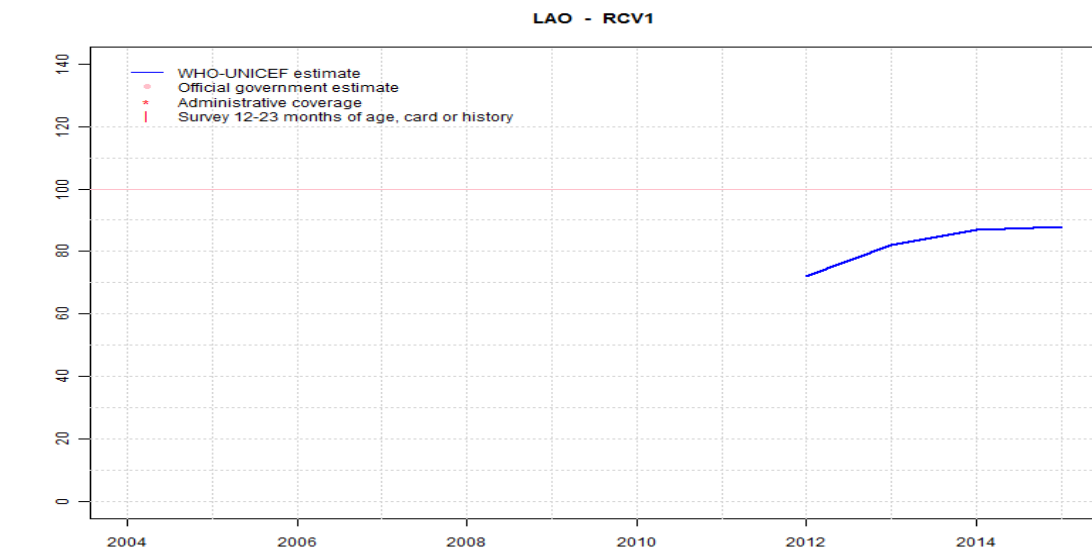
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2015 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.

Lao People's Democratic Republic - RCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	72	82	87	88
Estimate GoC	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: 2015 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 accompanying graph and data table.

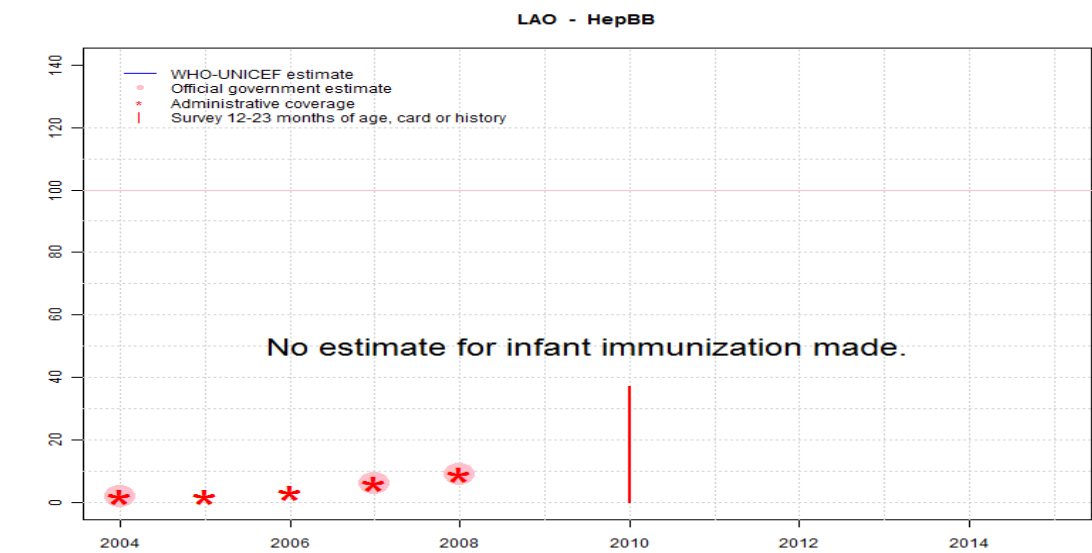
2012: Estimate based on estimated MCV1. GoC=R+ S+ D+

2013: Estimate based on estimated MCV1. GoC=R+ S+ D+

2014: Estimate based on estimated MCV1. GoC=R+ S+ D+

2015: Estimate based on estimated MCV1. GoC=R+ S+ D+

Lao People's Democratic Republic - HepBB



Although hepatitis birth dose is in the national immunization schedule, estimates for hepatitis birth dose are not provided due to insufficient information on doses administered within 24 hours.

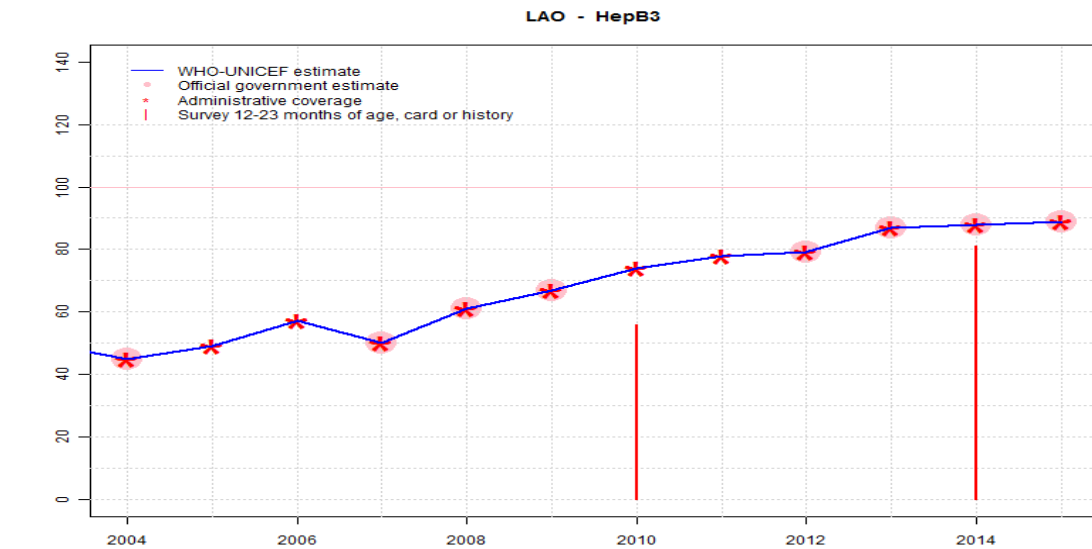
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	2	NA	NA	6	9	NA	NA	NA	NA	NA	NA	NA
Administrative	2	2	3	6	9	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	37	NA	NA	NA	NA	NA

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: 2015 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.

Lao People's Democratic Republic - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	45	49	57	50	61	67	74	78	79	87	88	89
Estimate GoC	••	••	••	••	•••	•••	•	••	•••	•••	•••	•••
Official	45	NA	NA	50	61	67	NA	NA	79	87	88	89
Administrative	45	49	57	50	61	67	74	78	79	87	88	89
Survey	NA	NA	NA	NA	NA	NA	56	NA	NA	NA	81	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.

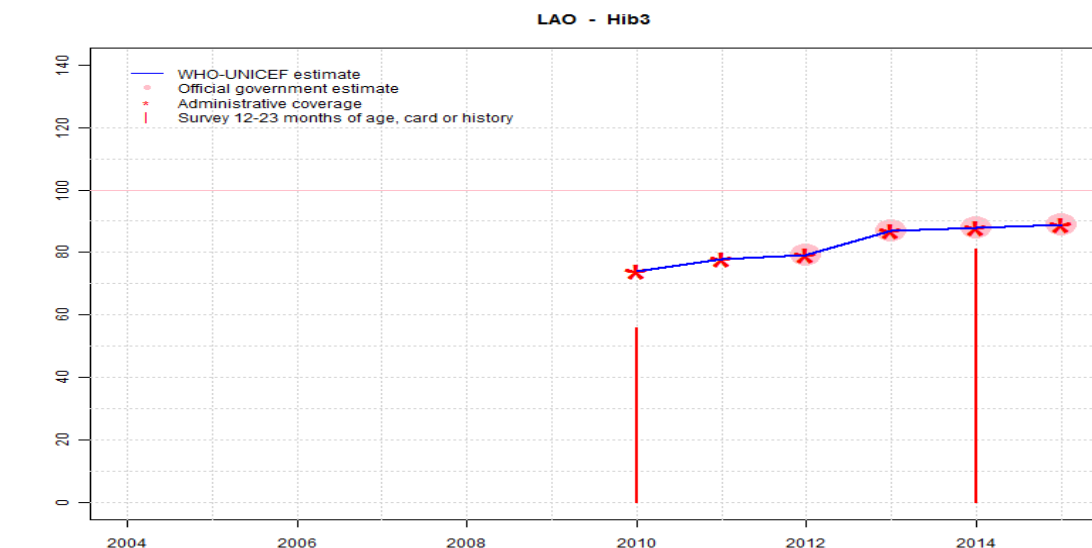
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2004: Estimate based on reported data. GoC=R+ D+
- 2005: Estimate based on reported data. GoC=R+ D+
- 2006: Estimate based on reported data. GoC=R+ D+
- 2007: Estimate based on reported data. . GoC=R+ D+
- 2008: Estimate based on reported data. GoC=R+ S+ D+
- 2009: Estimate based on reported data. GoC=R+ S+ D+
- 2010: Estimate is based on reported coverage supported by survey. Lao Social Indicator Survey (LSIS) 2011 - 12 (Multiple Indicator Cluster Survey / Demographic and Health Survey) card or history results of 56 percent modified for recall bias to 63 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 45 percent and 3d dose card only coverage of 37 percent. Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 83 percent based on 1 survey(s). National Immunization Survey 2015, Lao People's Democratic Republic (Lao PDR) card or history results of 81 percent modified for recall bias to 83 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 73 percent and 3d dose card only coverage of 69 percent. GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	74	78	79	87	88	89
Estimate GoC	NA	NA	NA	NA	NA	NA	•	••	•••	•••	•••	•••
Official	NA	NA	NA	NA	NA	NA	NA	NA	79	87	88	89
Administrative	NA	NA	NA	NA	NA	NA	74	78	79	87	88	89
Survey	NA	NA	NA	NA	NA	NA	56	NA	NA	NA	81	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.

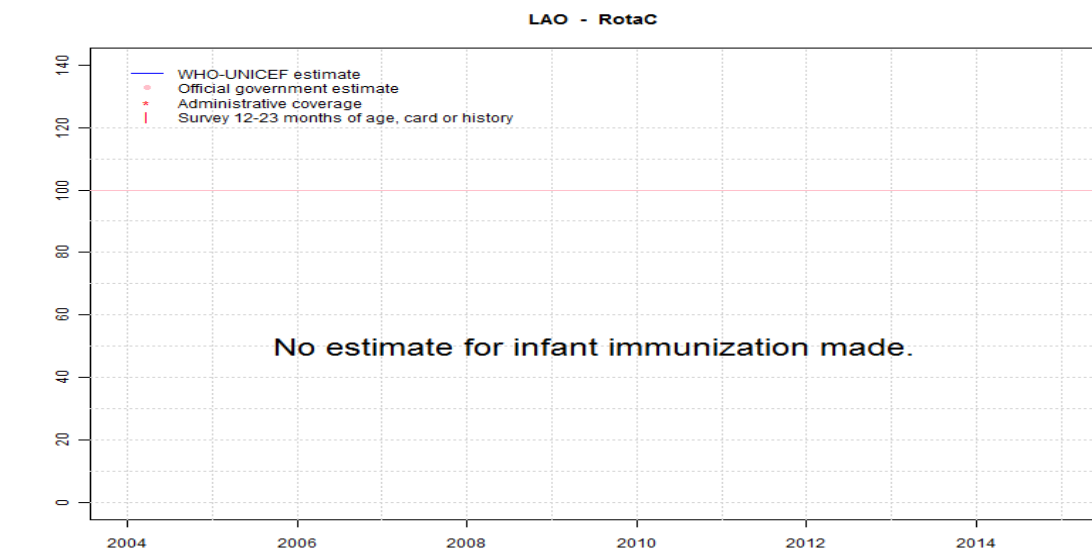
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2010: Estimate is based on reported coverage supported by survey. Lao Social Indicator Survey (LSIS) 2011 - 12 (Multiple Indicator Cluster Survey / Demographic and Health Survey) card or history results of 56 percent modified for recall bias to 63 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 45 percent and 3d dose card only coverage of 37 percent. DTP-HepB-Hib vaccine was introduced in 2009. Reporting started in 2010. Estimate challenged by: D-
- 2011: Estimate based on reported administrative data. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government supported by survey. Survey evidence of 83 percent based on 1 survey(s). National Immunization Survey 2015, Lao People's Democratic Republic (Lao PDR) card or history results of 81 percent modified for recall bias to 83 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 73 percent and 3d dose card only coverage of 69 percent. GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ S+ D+

Lao People's Democratic Republic - RotaC



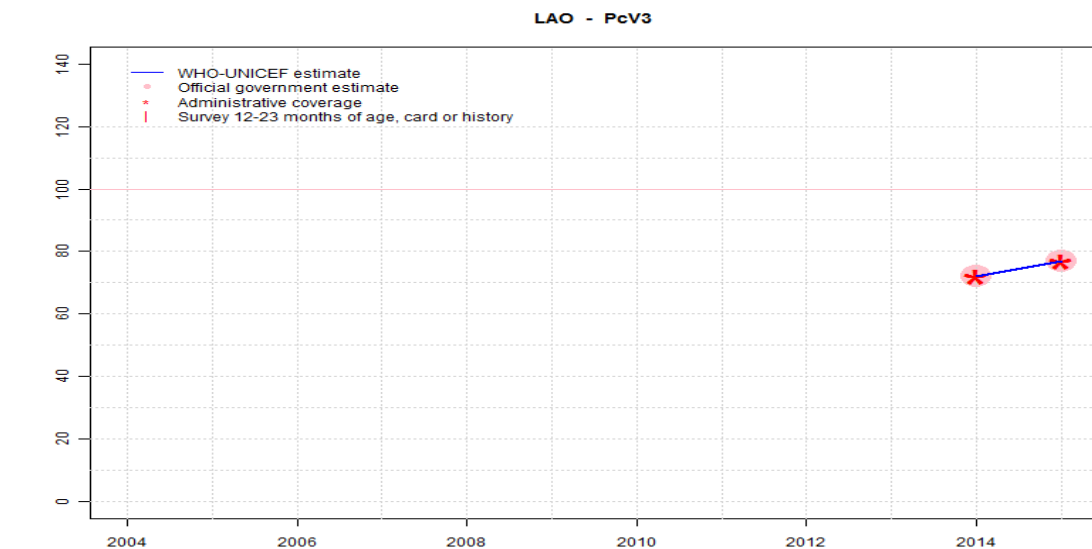
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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: 2015 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.

Lao People's Democratic Republic - PcV3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	77
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	77
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	77
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: 2015 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:

- 2014: Estimate based on coverage reported by national government. Pneumococcal conjugate vaccine introduced during 2013 and reporting began in 2014. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. GoC=R+ D+

Lao People's Democratic Republic - survey details

2014 National Immunization Survey 2015, Lao People's Democratic Republic (Lao PDR)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	72	12-23 m	5981	64
BCG	Card < 12 months	67	12-23 m	-	64
BCG	Card or History	89	12-23 m	5981	64
DTP1	Card	73	12-23 m	5981	64
DTP1	Card < 12 months	69	12-23 m	-	64
DTP1	Card or History	88	12-23 m	5981	64
DTP3	Card	69	12-23 m	5981	64
DTP3	Card < 12 months	52	12-23 m	-	64
DTP3	Card or History	81	12-23 m	5981	64
HepB1	Card	73	12-23 m	5981	64
HepB1	Card < 12 months	69	12-23 m	-	64
HepB1	Card or History	88	12-23 m	5981	64
HepB3	Card	69	12-23 m	5981	64
HepB3	Card < 12 months	52	12-23 m	-	64
HepB3	Card or History	81	12-23 m	5981	64
Hib1	Card	73	12-23 m	5981	64
Hib1	Card < 12 months	69	12-23 m	-	64
Hib1	Card or History	88	12-23 m	5981	64
Hib3	Card	69	12-23 m	5981	64
Hib3	Card < 12 months	52	12-23 m	-	64
Hib3	Card or History	81	12-23 m	5981	64
MCV1	Card	66	12-23 m	5981	64
MCV1	Card < 12 months	49	12-23 m	-	64
MCV1	Card or History	81	12-23 m	5981	64
Pol1	Card	73	12-23 m	5981	64
Pol1	Card < 12 months	69	12-23 m	-	64
Pol1	Card or History	88	12-23 m	5981	64
Pol3	Card	69	12-23 m	5981	64
Pol3	Card < 12 months	53	12-23 m	-	64
Pol3	Card or History	82	12-23 m	5981	64

* coverage levels confirmed by card include evidence of vaccination from cards as well as information obtained from a review of health facility records

2010 Lao Social Indicator Survey (LSIS) 2011 - 12 (Multiple Indicator Cluster Survey / Demographic and Health Survey)

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	77	12-23 m	2141	47
BCG	Card	45	12-23 m	-	47
BCG	Card or History	78	12-23 m	2141	47
BCG	History	34	12-23 m	-	47
DTP1	C or H <12 months	75	12-23 m	2141	47
DTP1	Card	45	12-23 m	-	47
DTP1	Card or History	77	12-23 m	2141	47
DTP1	History	32	12-23 m	-	47
DTP3	C or H <12 months	52	12-23 m	2141	47
DTP3	Card	37	12-23 m	-	47
DTP3	Card or History	56	12-23 m	2141	47
DTP3	History	19	12-23 m	-	47
HepB1	C or H <12 months	75	12-23 m	2141	47
HepB1	Card	45	12-23 m	-	47
HepB1	Card or History	77	12-23 m	2141	47
HepB1	History	32	12-23 m	-	47
HepB3	C or H <12 months	52	12-23 m	2141	47
HepB3	Card	37	12-23 m	-	47
HepB3	Card or History	56	12-23 m	2141	47
HepB3	History	19	12-23 m	-	47
HepBB	C or H <12 months	37	12-23 m	2141	47
HepBB	Card	28	12-23 m	-	47
HepBB	Card or History	37	12-23 m	2141	47
HepBB	History	9	12-23 m	-	47
Hib1	C or H <12 months	75	12-23 m	2141	47
Hib1	Card	45	12-23 m	-	47
Hib1	Card or History	77	12-23 m	2141	47
Hib1	History	32	12-23 m	-	47
Hib3	C or H <12 months	52	12-23 m	2141	47
Hib3	Card	37	12-23 m	-	47
Hib3	Card or History	56	12-23 m	2141	47
Hib3	History	19	12-23 m	-	47
MCV1	C or H <12 months	55	12-23 m	2141	47
MCV1	Card	34	12-23 m	-	47
MCV1	Card or History	64	12-23 m	2141	47
MCV1	History	30	12-23 m	-	47
Pol1	C or H <12 months	76	12-23 m	2141	47
Pol1	Card	44	12-23 m	-	47
Pol1	Card or History	78	12-23 m	2141	47

Lao People's Democratic Republic - survey details

Pol1	History	34	12-23 m	-	47
Pol3	C or H <12 months	49	12-23 m	2141	47
Pol3	Card	37	12-23 m	-	47
Pol3	Card or History	53	12-23 m	2141	47
Pol3	History	16	12-23 m	-	47

2005 Lao PDR Multiple Indicator Cluster Survey 2006 Final Report

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	61	12-23 m	828	49
BCG	Card	47	12-23 m	828	49
BCG	Card or History	64	12-23 m	828	49
BCG	History	16	12-23 m	828	49
DTP1	C or H <12 months	60	12-23 m	828	49
DTP1	Card	48	12-23 m	828	49
DTP1	Card or History	64	12-23 m	828	49
DTP1	History	16	12-23 m	828	49
DTP3	C or H <12 months	32	12-23 m	828	49
DTP3	Card	34	12-23 m	828	49
DTP3	Card or History	41	12-23 m	828	49
DTP3	History	8	12-23 m	828	49
MCV1	C or H <12 months	33	12-23 m	828	49

MCV1	Card	25	12-23 m	828	49
MCV1	Card or History	40	12-23 m	828	49
MCV1	History	15	12-23 m	828	49
Pol1	C or H <12 months	63	12-23 m	828	49
Pol1	Card	48	12-23 m	828	49
Pol1	Card or History	67	12-23 m	828	49
Pol1	History	19	12-23 m	828	49
Pol3	C or H <12 months	32	12-23 m	828	49
Pol3	Card	34	12-23 m	828	49
Pol3	Card or History	42	12-23 m	828	49
Pol3	History	8	12-23 m	828	49

1999 Lao PDR Multiple Indicator Cluster Survey MICS-II 2000, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	69	12-23 m	398	44
DTP1	Card	83	12-23 m	398	44
DTP3	Card	53	12-23 m	398	44
MCV1	Card	42	12-23 m	398	44
Pol1	Card	81	12-23 m	398	44
Pol3	Card	57	12-23 m	398	44

Further information and estimates for previous years are available at:

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

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

Lao People's Democratic Republic

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 receives 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.

The model was used in the mid to late 2000. Currently, the coverage series developed by the model is used as the baseline, and efforts are made to obtain data from all sources that include the JRF and reported trend over the years, routine PAB reporting and its trend over the years, data from surveys (DHS, MICS, EPI), whether countries have been validated for the attainment of maternal and neonatal tetanus elimination and what the TT coverage figures are from the survey etc and all the information is used to arrive at an estimate of the protection-at-birth from TT vaccination.

Year	PAB coverage estimate (%)
2004	51
2005	50
2006	52
2007	47
2008	47
2009	47
2010	80
2011	80
2012	80
2013	90
2014	90
2015	90

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.