

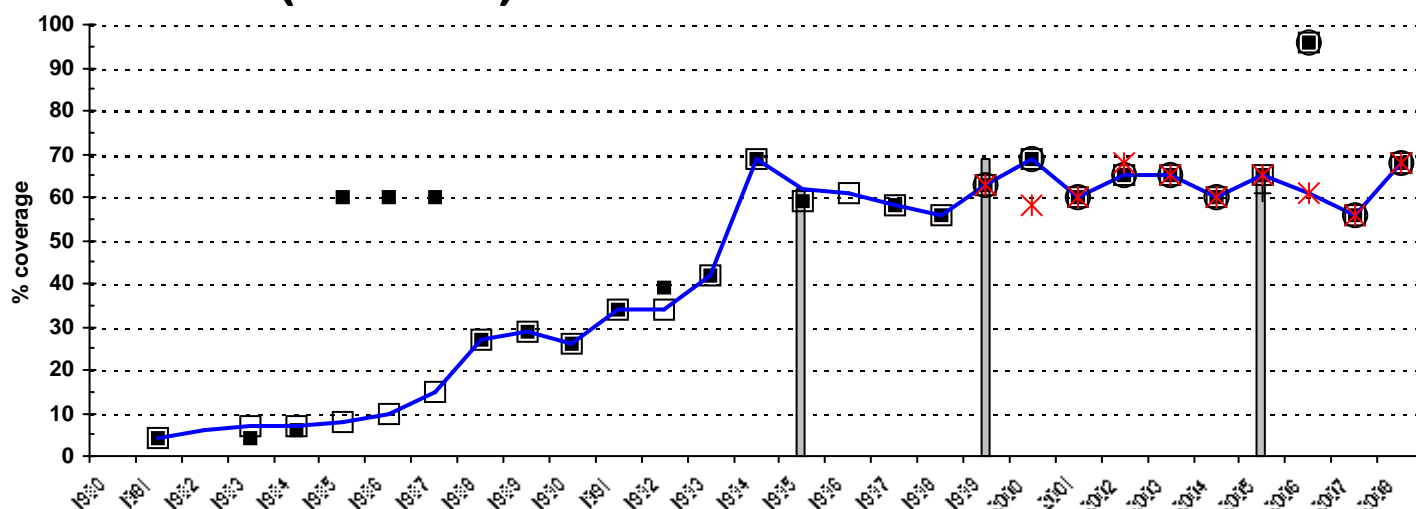
WHO/UNICEF
Review of National Immunization Coverage
1980-2008

Lao People's Democratic Republic

July, 2009

Lao People's Democratic Republic

BCG (1980-2008)



Description of trend

Prior to 1991 the programme was limited to selected parts of the country. Beginning in 1991, programme coverage expanded to the entire country. In 1994 Lao PDR received substantial financial support from UNICEF which allowed expanded access to remote villages. The MIC: 2000 (card only validation) supports officially reported data. While a recent census suggests a significant decline in births current estimates of births vary between 114 442, 154 400, 195 306 by PDR Laos. The UN Population Division's current estimate of births is 204 000. Given the uncertainty in the size of the target population we have provisionally used the estimate of 195 306 births as reported by the Ministry of Health note that coverage could be significantly higher. 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.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981	4	4	4				
1982	6						
1983	7	7	4				
1984	7	7	6				
1985	8	8	60				
1986	10	10	60				
1987	15	15	60				
1988	27	27	27				
1989	29	29	29				
1990	26	26	26				
1991	34	34	34				
1992	34	34	39				
1993	42	42	42				
1994	69	69	69				
1995	62	59	59			62	
1996	61	61					
1997	58	58	58				
1998	56	56	56				
1999	63	63	63	63	63	69	
2000	69	69	69	69	58		
2001	60	60	60	60	60		
2002	65	65	65	65	68		
2003	65	65	65	65	65		
2004	60	60	60	60	60		
2005	65	65	65		65	64	61
2006	61	96	96	96	61		
2007	56	56	56	56	56		
2008	68	68	68	68	68		

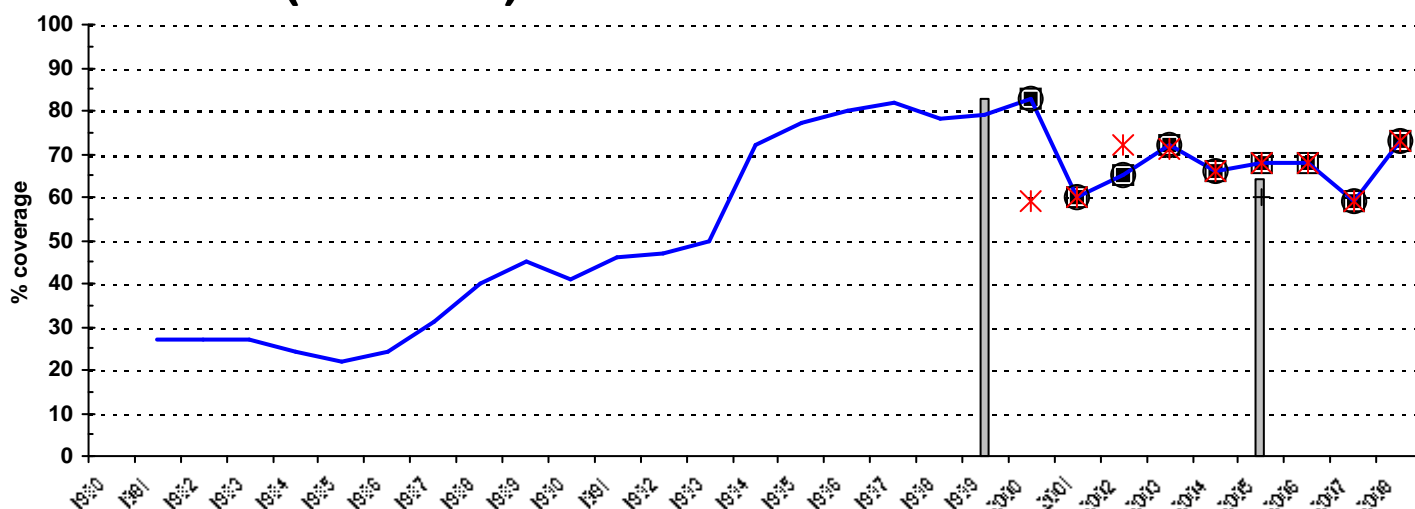
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Lao People's Democratic Republic

DTP1 (1980-2008)



Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001 and have received national reports reflecting DTP1 coverage from 2001 onward. The DTP1 estimates from 2000-2004 are based on these reports. For years prior to 2000 the estimates are derived from the WHO/UNICEF estimates of DTP3 and the relationship between the levels of DTP3 coverage and the dropout between DTP1 and DTP3. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004. While a recent census suggests a significant decline in births current estimates of births vary between 114 442, 154 400, 195 306 with PDR Laos. The UN Population Division's current estimate of births is 204 000. Given the uncertainty in the size of the target population we have provisionally used the estimate of 195 306 births as reported by the Ministry of Health but note that coverage could be significantly higher. 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 system registration books.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981	27						
1982	27						
1983	27						
1984	24						
1985	22						
1986	24						
1987	31						
1988	40						
1989	45						
1990	41						
1991	46						
1992	47						
1993	50						
1994	72						
1995	77						
1996	80						
1997	82						
1998	78						
1999	79					83	
2000	83	83	83	83	59		
2001	60	60	60	60	60		
2002	65	65	65	65	72		
2003	72	72	72	72	71		
2004	66	66	66	66	66		
2005	68	68	68		68	64	60
2006	68	68	68		68		
2007	59	59	59	59	59		
2008	73	73	73	73	73		

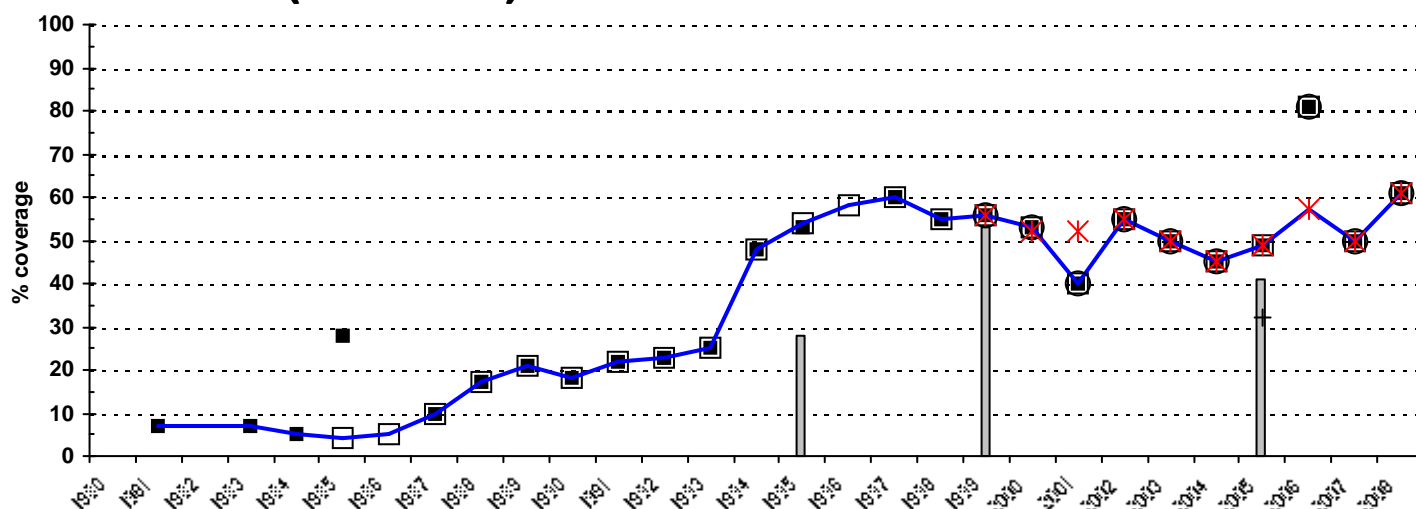
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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Lao People's Democratic Republic

DTP3 (1980-2008)



Description of trend

Prior to 1991 the programme was limited to selected parts of the country. Beginning in 1991, programme coverage expanded to the entire country. According to officially reported data coverage is below 10 % in the early 1980s and slightly rises to 26 % in 1993. In 1994 Lao PDR received substantial financial support from UNICEF which allowed expanded access to remote villages. Officially reported data suggest a further increase to a level of over 60%, although survey data report a coverage rate of 28% in 1995 (MICS 1996). The 1994 estimate was confirmed by a MOH/UNICEF/WHO/JICA review. The MICS 2000 (card only validation) supports officially reported data. While a recent census suggests a significant decline in births current estimates of births vary between 114 442, 154 400, 195 306 with PDR Laos. The UN Population Division's current estimate of births is 204 000. Given the uncertainty in the size of the target population we have provisionally used the estimate of 19 births as reported by the Ministry of Health but note that coverage could be significantly higher. 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.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981	7		7				
1982	7						
1983	7		7				
1984	5		5				
1985	4	4	28				
1986	5	5					
1987	10	10	10				
1988	17	17	17				
1989	21	21	21				
1990	18	18	18				
1991	22	22	22				
1992	23	23	23				
1993	25	25	25				
1994	48	48	48				
1995	54	54	53			28	
1996	58	58					
1997	60	60	60				
1998	55	55	55				
1999	56	56	56	56	56	53	
2000	53	53	53	53	52		
2001	40	40	40	40	52		
2002	55	55	55	55	55		
2003	50	50	50	50	50		
2004	45	45	45	45	45		
2005	49	49	49		49	41	32
2006	57	81	81	81	57		
2007	50	50	50	50	50		
2008	61	61	61	61	61		

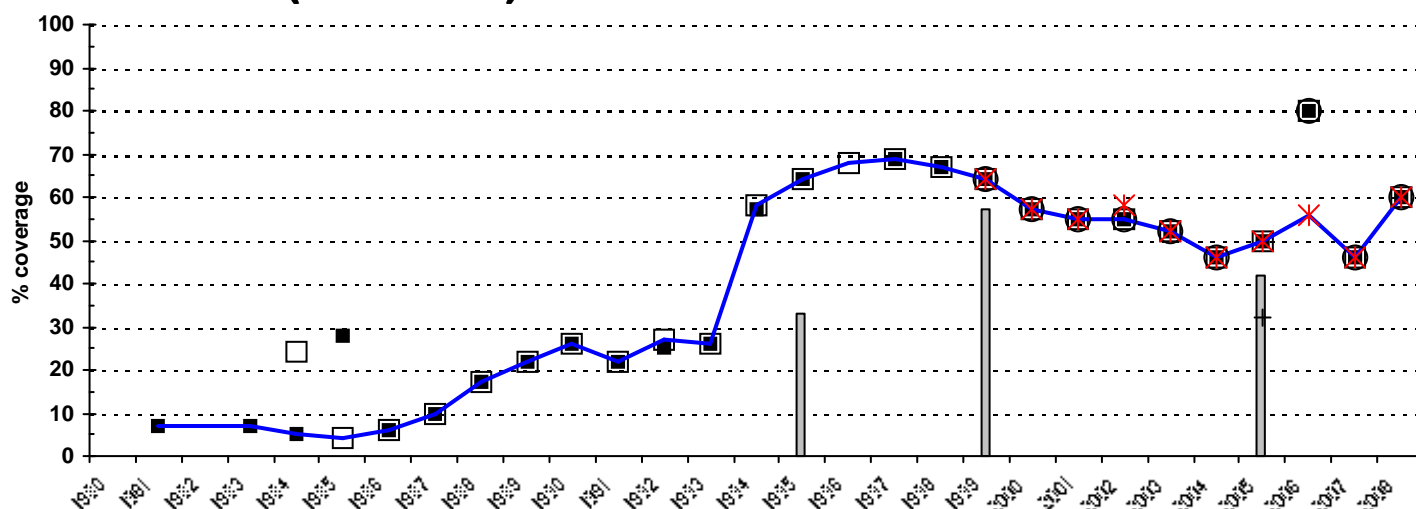
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

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Lao People's Democratic Republic

Pol3 (1980-2008)



Description of trend

Prior to 1991 the programme was limited to selected parts of the country. Beginning in 1991, programme coverage expanded to the entire country. According to officially reported data coverage is below 10 % in the early 1980s and slightly rises to 26 % in 1993. In 1994 Lao PDR received substantial financial support from UNICEF which allowed expanded access to remote villages. Officially reported data suggest a further increase level of over 60%, although survey data reports a coverage rate of 33 % in 1995 (MICS 1996). The 1994 estimate was confirmed by a MOH/UNICEF/WHO/JICA review. The MICS 2000 (card only validation) supports officially reported data. While a recent census suggests a significant decline in births current estimates of births vary between 114 442, 154 400, 195 306 with PDR Laos. The UN Population Division's current estimate of births is 204 000. Given the uncertainty in the size of the target population we have provisionally used the estimate of 195 births as reported by the Ministry of Health but note that coverage could be significantly higher. 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.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981	7		7				
1982	7						
1983	7		7				
1984	5	24	5				
1985	4	4	28				
1986	6	6	6				
1987	10	10	10				
1988	17	17	17				
1989	22	22	22				
1990	26	26	26				
1991	22	22	22				
1992	27	27	25				
1993	26	26	26				
1994	58	58	57				
1995	64	64	64			33	
1996	68	68					
1997	69	69	69				
1998	67	67	67				
1999	64	64	64	64	64	57	
2000	57	57	57	57	57		
2001	55	55	55	55	55		
2002	55	55	55	55	58		
2003	52	52	52	52	52		
2004	46	46	46	46	46		
2005	50	50	50		50	42	32
2006	56	80	80	80	56		
2007	46	46	46	46	46		
2008	60	60	60	60	60		

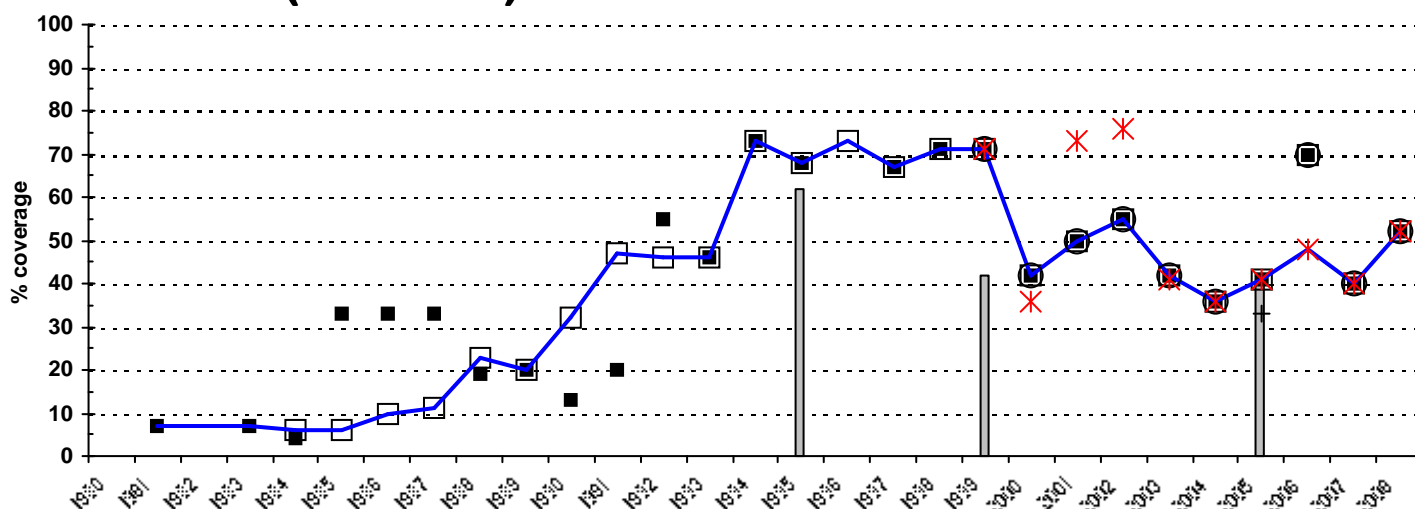
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Lao People's Democratic Republic

MCV (1980-2008)



Description of trend

Prior to 1991 the programme was limited to selected parts of the country. Beginning in 1991, programme coverage expanded to the entire country. Officially reported data suggest coverage rates below 10% in the early 1980s which steadily rise and reach a level of around 70% in the second half of the 1990s. In 1994 Lao PDR received substantial financial support from UNICEF which allowed expanded access to remote villages. Officially reported data suggest a further increase to a level of over 70%. Survey data for 1995 (MICS 1996), however, reports slightly lower coverage (62% in 1995). The MICS 2000 (card only validation) estimate and official data suggest a decline in the early 2000s. While a recent census suggests a significant decline in births current estimates of births vary between 114 442, 154 400, 195 306 with PDR Laos. The UN Population Division's current estimate of births is 204 000. Given the uncertainty in the size of the target population we have provisionally used the estimate of 195 306 births as reported by the Ministry of Health but note that coverage could be significantly higher. 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 system registration books.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981	7		7				
1982	7						
1983	7		7				
1984	6	6	4				
1985	6	6	33				
1986	10	10	33				
1987	11	11	33				
1988	23	23	19				
1989	20	20	20				
1990	32	32	13				
1991	47	47	20				
1992	46	46	55				
1993	46	46	46				
1994	73	73	73				
1995	68	68	68			62	
1996	73	73					
1997	67	67	67				
1998	71	71	71				
1999	71	71	71	71	71	42	
2000	42	42	42	42	36		
2001	50	50	50	50	73		
2002	55	55	55	55	76		
2003	42	42	42	42	41		
2004	36	36	36	36	36		
2005	41	41	41		41	40	33
2006	48	70	70	70	48		
2007	40	40	40	40	40		
2008	52	52	52	52	52		

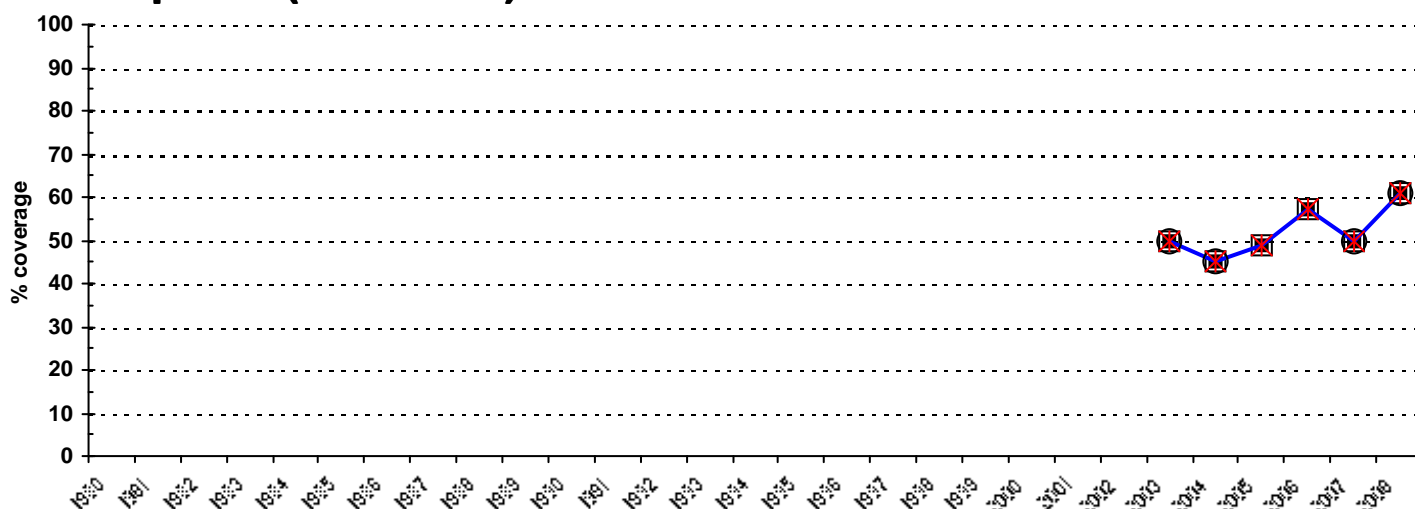
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Lao People's Democratic Republic

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine introduced in part of the country in 2001. Introduction nationally in 2004. While a recent census suggests a significant decline in births current estimates of births vary between 114 442, 154 400, 195 306 with PDR Laos. The UN Population Division's current estimate of births is 204 000. Given the uncertainty in the size of the target population we have provisionally used the estimate of 195 306 k as reported by the Ministry of Health but note that coverage could be significantly higher. 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.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003	50	50	50	50	50		
2004	45	45	45	45	45		
2005	49	49	49		49		
2006	57	57	57		57		
2007	50	50	50	50	50		
2008	61	61	61	61	61		

*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Lao People's Democratic Republic

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2005 Lao PDR Multiple Indicator Cluster Survey 2006 Final Report								
BCG	Card or History	63.7		12-23 m	828	48.9	2006	
BCG	C or H <12 month	61		12-23 m	828	48.9	2006	
DTP1	Card or History	64.1		12-23 m	828	48.9	2006	
DTP1	C or H <12 month	60.1		12-23 m	828	48.9	2006	
DTP3	Card or History	41.3		12-23 m	828	48.9	2006	
DTP3	C or H <12 month	31.8		12-23 m	828	48.9	2006	
Pol3	Card or History	42.3		12-23 m	828	48.9	2006	
Pol3	C or H <12 month	32.2		12-23 m	828	48.9	2006	
MCV	Card or History	40.2		12-23 m	828	48.9	2006	
MCV	C or H <12 month	33		12-23 m	828	48.9	2006	
PAB	n.a.	55.5		CBAW	1532		2006	

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

TT2pl	Card or History	41.7		Women 15-49			2000	Births last three years
BCG	Card	69.3		12-23 m	398	44	2000	Confirmation method assumed
DTP1	Card	83.2		12-23 m	398	44	2000	Confirmation method assumed
DTP3	Card	52.8		12-23 m	398	44	2000	Confirmation method assumed
Pol3	Card	57.1		12-23 m	398	44	2000	Confirmation method assumed
MCV	Card	41.8		12-23 m	398	44	2000	Confirmation method assumed
PAB	Card or History	45		Women 15-49			2000	

1995 Report on Multiple Indicator Cluster Survey (MICS 1996), 1997

BCG	Card or History	61.6		12-23 m	727		1996	
DTP1	Card or History			12-23 m	727		1996	
DTP3	Card or History	28.3		12-23 m	727		1996	
Pol3	Card or History	32.9		12-23 m	727		1996	
MCV	Card or History	61.5		12-23 m	727		1996	

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 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.

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.

Lao People's Democratic Republic

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	2
1986	4
1987	7
1988	7
1989	6
1990	12
1991	16
1992	22
1993	30
1994	40
1995	44
1996	43
1997	45
1998	46
1999	48
2000	58
2001	52
2002	53
2003	54
2004	51
2005	50
2006	52
2007	47
2008	47