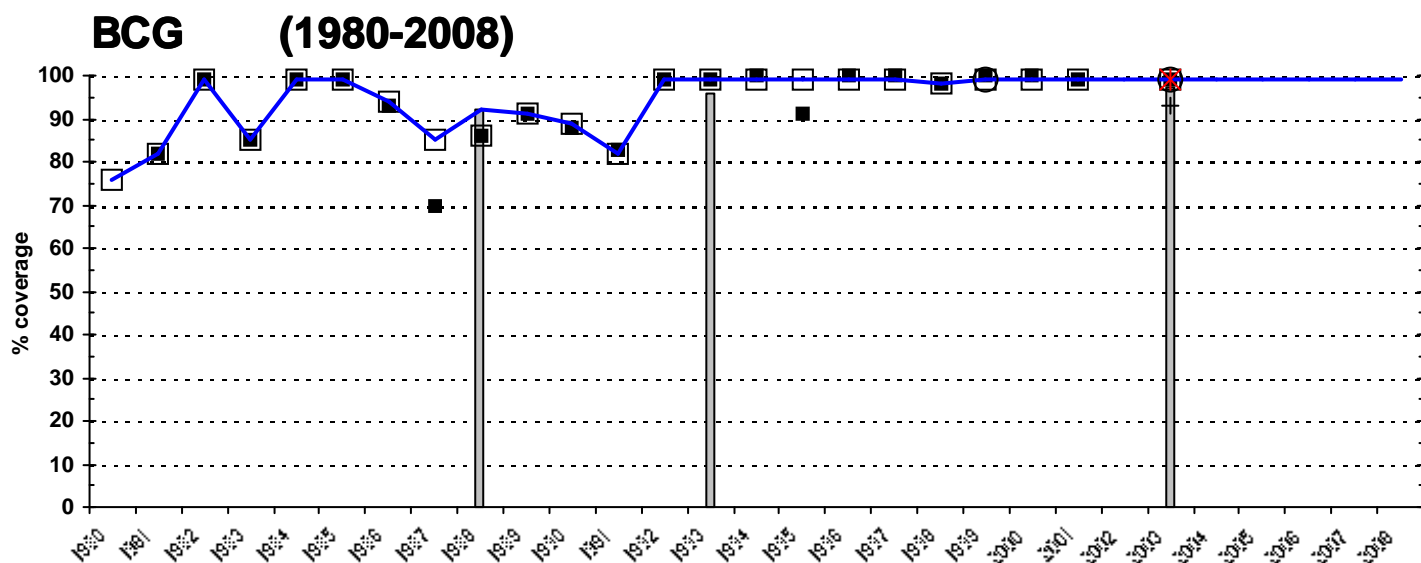


**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Ecuador

July, 2009

Ecuador



Description of trend

During the 1980s Ecuador relied on irregularly produced domestic BCG which lead to fluctuating coverage (between 82% and 99%). Survey (DHS 1989) support the high coverage levels. Between 1990 and 1999 BCG was imported with domestic production recommencing in 2000. Coverage stabilized around 99% after 1992. WHO & UNICEF recommend a high level quality survey to confirm levels of coverage.

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	76	76					
1981	82	82	82				
1982	99	99	99				
1983	85	85	85				
1984	99	99	99				
1985	99	99	99				
1986	94	94	93				
1987	85	85	70				
1988	92	86	86			92	
1989	91	91	91				
1990	89	89	88				
1991	82	82	83				
1992	99	99	99				
1993	99	99	99			96	
1994	99	99	100				
1995	99	99	91				
1996	99	99	100				
1997	99	99	100				
1998	98	98	98				
1999	99	99	100	99	101		
2000	99	99	100	113	113		
2001	99	99	99	121	121		
2002	99	117	117	117	117		
2003	99	99	99	99	99	97	93
2004	99	113	113	113	113		
2005	99	113	113	113	113		
2006	99	116	116	116	116		
2007	99	116	116	116	116		
2008	99	118	118	118	118		

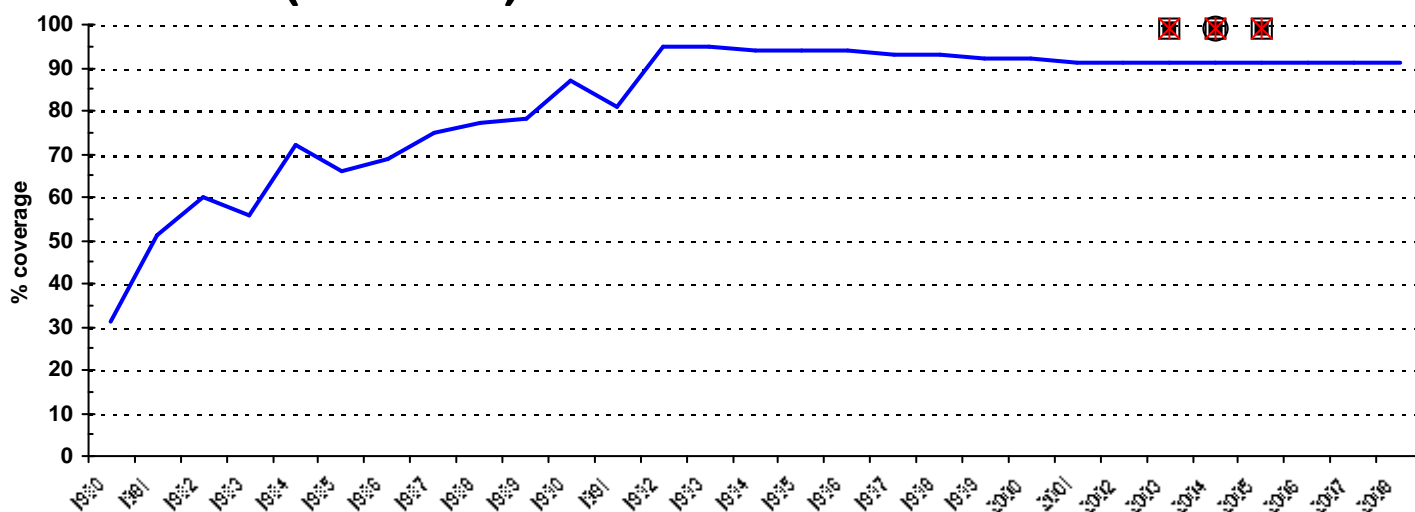
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ecuador

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. Estimates are derived from the WHO/UNICEF estimates of DTP3 and the relationship between the levels of DTP3 coverage and the drop-out between DTP1 and DTP3. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004. WHO & UNICEF recommend a high level quality survey to confirm levels of coverage.

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	31						
1981	51						
1982	60						
1983	56						
1984	72						
1985	66						
1986	69						
1987	75						
1988	77						
1989	78						
1990	87						
1991	81						
1992	95						
1993	95						
1994	94						
1995	94						
1996	94						
1997	93						
1998	93						
1999	92						
2000	92	105	105	105	105		
2001	91	105	105		105		
2002	91	102	102	102	102		
2003	91	99	99		99		
2004	91	99	99	99	99		
2005	91	99	99		99		
2006	91	105	105	105	105		
2007	91	107	107	107	107		
2008	91	107	107	107	107		

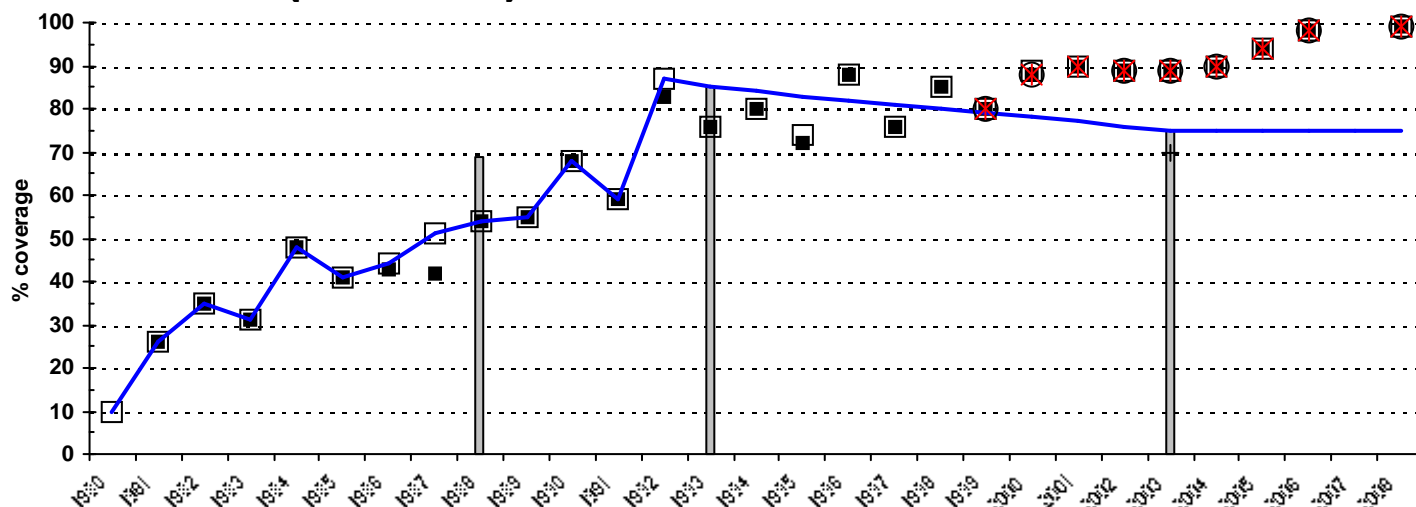
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Ecuador

DTP3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data between 1980-1992. Insufficient supply of vaccines led to fluctuating coverage. In addition, frequent labour disputes in the health sector have compromised the ability of the health system to deliver immunization services. 1996 corresponds to the only year of economic, labor, and political stability, in which the health and worker services operated regularly. Estimates from 1993 are based on survey results. WHO & UNICEF recommend a high level quality survey to confirm levels of coverage.

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	10	10					
1981	26	26	26				
1982	35	35	35				
1983	31	31	31				
1984	48	48	48				
1985	41	41	41				
1986	44	44	43				
1987	51	51	42				
1988	54	54	54			69	
1989	55	55	55				
1990	68	68	68				
1991	59	59	59				
1992	87	87	83				
1993	85	76	76			85	
1994	84	80	80				
1995	83	74	72				
1996	82	88	88				
1997	81	76	76				
1998	80	85	85				
1999	79	80	80	80	80		
2000	78	89	88	88	88		
2001	77	90	90		90		
2002	76	89	89	89	89		
2003	75	89	89	89	89	75	70
2004	75	90	90	90	90		
2005	75	94	94		94		
2006	75	98	98	98	98		
2007	75	102	102	102	102		
2008	75	99	99	99	99		

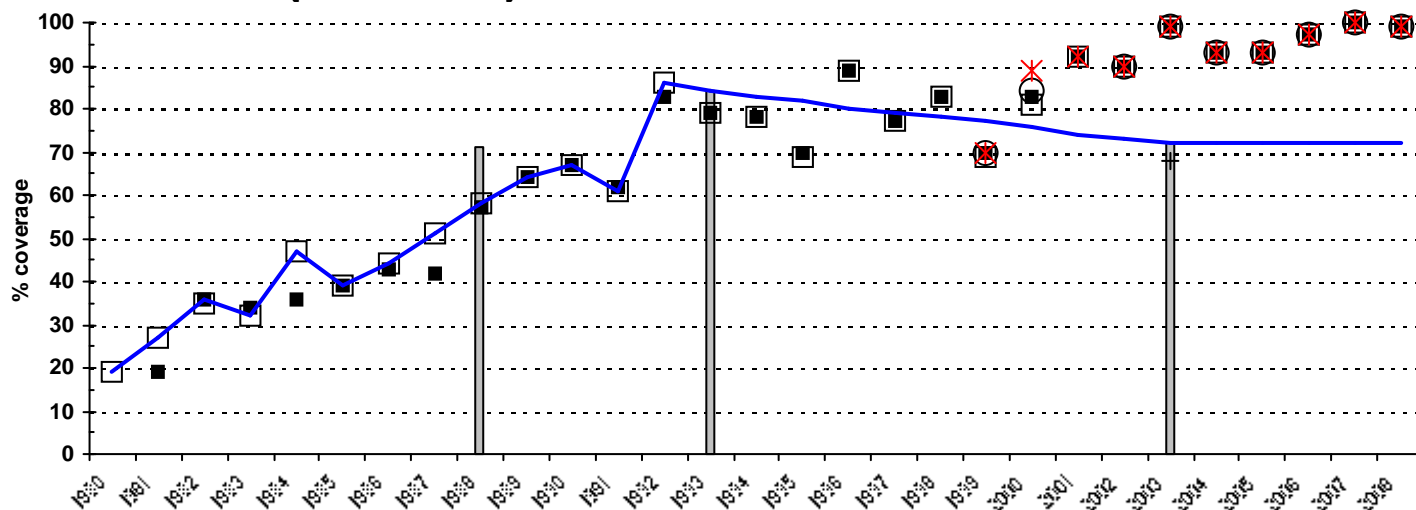
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ecuador

Pol3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data from 1980-1992. Insufficient supply of vaccines led to fluctuating coverage. In addition, frequent labour disputes in the health sector have compromised the ability of the health system to deliver immunization services. 1999 corresponds to the only year of economic, labor, and political stability, in which the health and worker services operated regularly without the strikes. Estimates from 1993 are based on survey results. WHO & UNICEF recommend a high level quality survey to confirm levels of coverage.

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	19	19					
1981	27	27	19				
1982	36	35	36				
1983	32	32	34				
1984	47	47	36				
1985	39	39	39				
1986	44	44	43				
1987	51	51	42				
1988	58	58	57			71	
1989	64	64	64				
1990	67	67	67				
1991	61	61	62				
1992	86	86	83				
1993	84	79	79			84	
1994	83	78	78				
1995	82	69	70				
1996	80	89	89				
1997	79	77	77				
1998	78	83	83				
1999	77	69	70	70	70		
2000	76	81	83	84	89		
2001	74	92	92		92		
2002	73	90	90	90	90		
2003	72	99	99	99	99	72	68
2004	72	93	93	93	93		
2005	72	93	93	93	93		
2006	72	97	97	97	97		
2007	72	100	100	100	100		
2008	72	99	99	99	99		

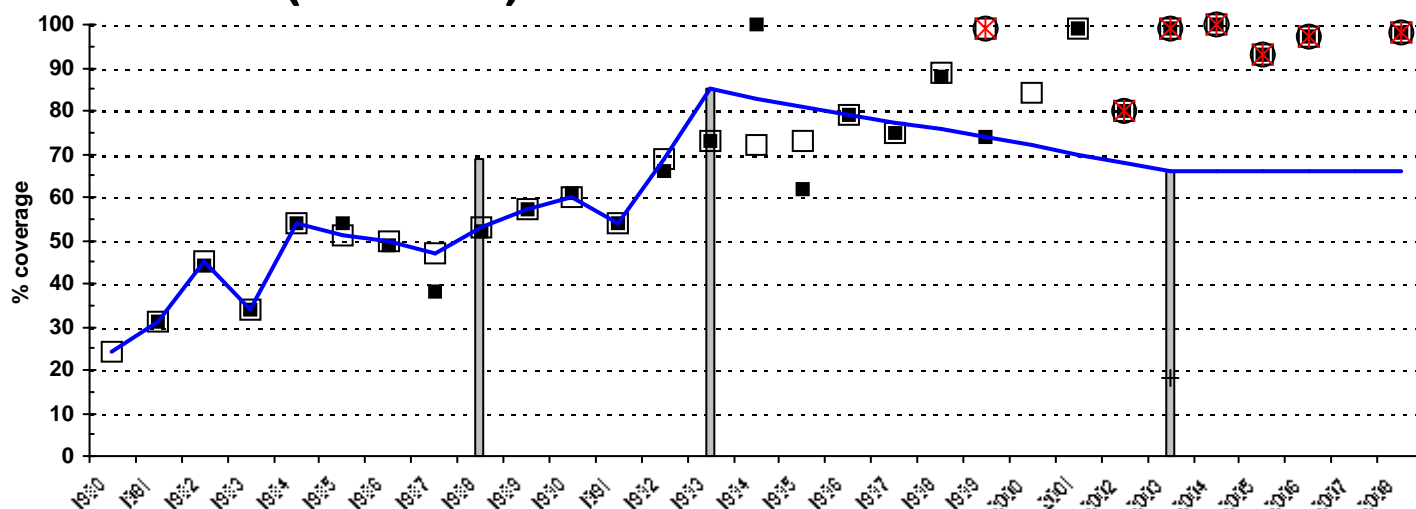
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ecuador

MCV (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data. Low levels of coverage can be attributed to vaccine shortages. Coverage has been extended through campaigns in 1994 and 1998. The 1998 Vaccine Law has improved financing of vaccine supply. WHO & UNICEF recommend a high level quality survey to confirm levels of coverage.

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	24	24					
1981	31	31	31				
1982	45	45	44				
1983	34	34	34				
1984	54	54	54				
1985	51	51	54				
1986	50	50	49				
1987	47	47	38				
1988	53	53	52			69	
1989	57	57	57				
1990	60	60	61				
1991	54	54	54				
1992	69	69	66				
1993	85	73	73			85	
1994	83	72	100				
1995	81	73	62				
1996	79	79	79				
1997	77	75	75				
1998	76	89	88				
1999	74	99	74	99	99		
2000	72	84					
2001	70	99	99		116		
2002	68	80	80	80	80		
2003	66	99	99	99	99	66	18
2004	66	100	100	100	100		
2005	66	93	93	93	93		
2006	66	97	97	97	97		
2007	66	103	103	103	103		
2008	66	98	98	98	98		

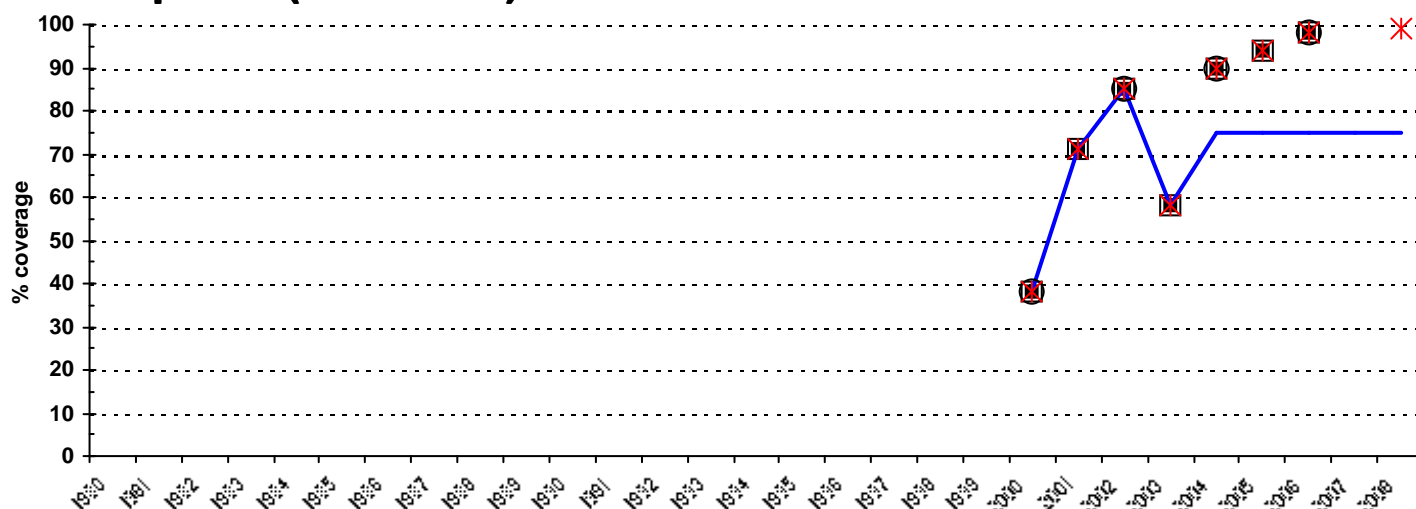
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ecuador

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine was introduced in 2000. Decline in 2003 associated with the replacement of monovalent hepatitis B vaccine with DTP-H HepB combination vaccine. Estimates from 2004 are based on estimates of DTP3 coverage. No survey data are available. WHO & UNICEF recommend a high level quality survey to confirm levels of coverage.

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	38	38	38	38	38		
2001	71	71	71	71	71		
2002	85	85	85	85	85		
2003	58	58	58	58	58		
2004	75	90	90	90	90		
2005	75	94	94	94	94		
2006	75	98	98	98	98		
2007	75	102	102	102	102		
2008	75	107	107	107	99		

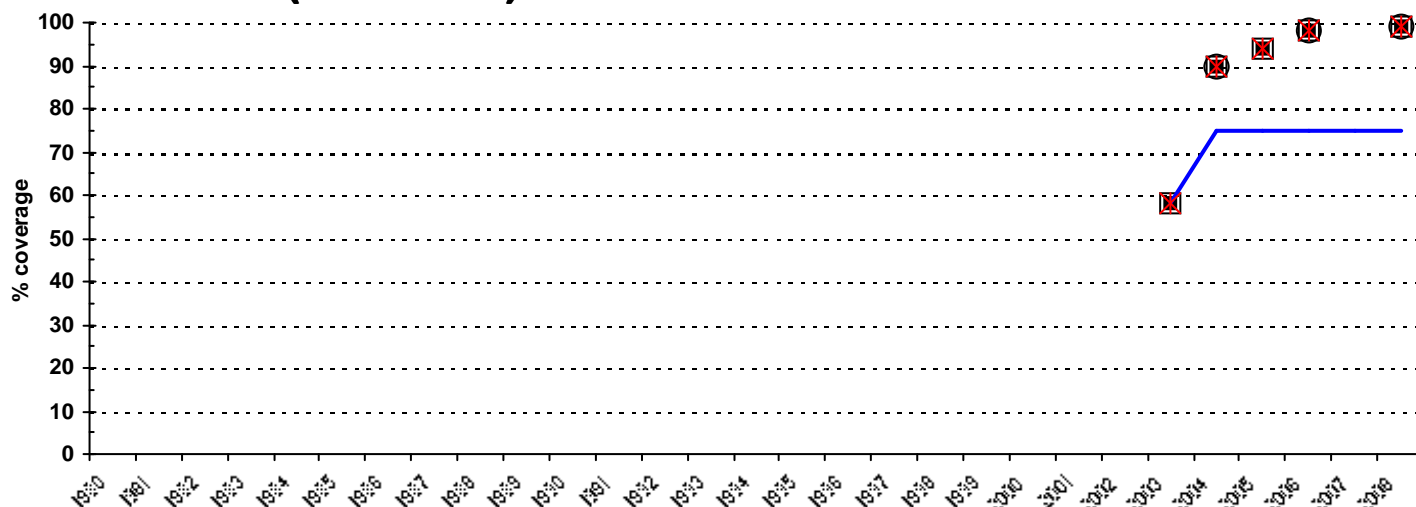
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ecuador

Hib3 (1980-2008)



Description of trend

DTP-Hib-HepB combination vaccine introduced in 2003. Estimated immunization coverage levels are based on reported data. Estimates from 2004 are based on estimates of DTP3 coverage. No survey data are available. WHO & UNICEF recommend a high level quality survey to cc levels of coverage.

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	58	58	58		58		
2004	75	90	90	90	90		
2005	75	94	94		94		
2006	75	98	98	98	98		
2007	75	102	102	102	102		
2008	75	99	99	99	99		

*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.

Ecuador

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2003 Encuesta Demográfica y de Salud Materna e Infantil (ENDEMAIN-2004)								
BCG	Card or History	96.7		12-23 m	788	71.5	2004	
BCG	C or H <12 month	92.9		12-23 m	788	71.5	2004	
DTP3	Card or History	74.6		12-23 m	788	71.5	2004	
DTP3	C or H <12 month	70		12-23 m	788	71.5	2004	
Pol3	Card or History	71.8		12-23 m	788	71.5	2004	
Pol3	C or H <12 month	67.9		12-23 m	788	71.5	2004	
MCV	Card or History	65.9		12-23 m	788	71.5	2004	
MCV	C or H <12 month	17.6		12-23 m	788	71.5	2004	
1993 Encuesta demográfica y de salud materna e infantil (ENDEMAIN-94), 1995								
BCG	Card or History	95.8		< 5 y	5543	50.6	1994	Children < 5 years
DTP1	Card or History			< 5 y	5543	50.6	1994	Children < 5 years
DTP3	Card or History	84.8		< 5 y	5543	50.6	1994	Children < 5 years
Pol3	Card or History	83.5		< 5 y	5543	50.6	1994	Children < 5 years
MCV	Card or History	84.7		< 5 y	5543	50.6	1994	Children < 5 years
1988 Encuesta demográfica y de salud materna e infantil (ENDEMAIN-89), 1990								
BCG	Card or History	92.1		12-23 m	889		1989	
DTP1	Card or History			12-23 m	889		1989	
DTP3	Card or History	68.9		12-23 m	889		1989	
Pol3	Card or History	70.6		12-23 m	889		1989	
MCV	Card or History	68.7		12-23 m	889		1989	

Ecuador

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.

Ecuador

Year	PAB coverage estimate (%)
1980	2
1981	4
1982	5
1983	7
1984	12
1985	14
1986	15
1987	16
1988	13
1989	9
1990	82
1991	30
1992	32
1993	30
1994	31
1995	33
1996	35
1997	37
1998	38
1999	40
2000	42
2001	57
2002	58
2003	60
2004	60
2005	65
2006	72
2007	72
2008	73