

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

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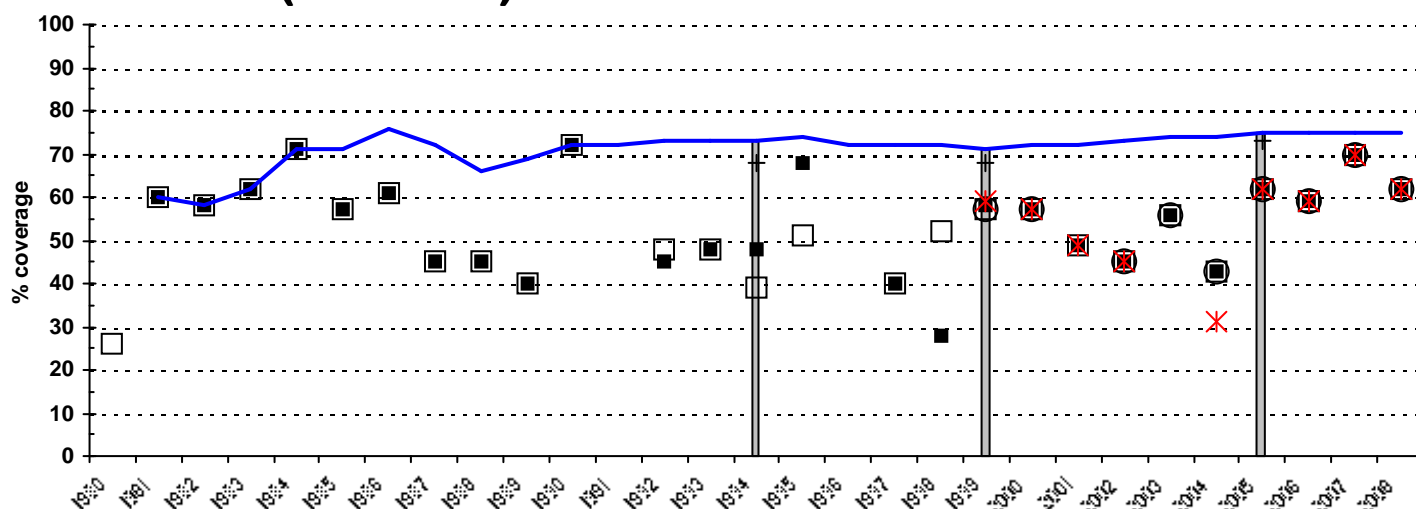
***Haiti***

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**July, 2009**

# Haiti

## BCG (1980-2008)



### Description of trend

Surveys report a consistent level of coverage between 1994 and 2005. Trend follows the level established by survey data. Prior to 1990 reported coverage is calibrated to the level of survey. Most likely the lower estimates established by officially reported data are underestimated due to missing data. In 2002 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system.

### 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		26					
1981	60	60	60				
1982	58	58	58				
1983	62	62	62				
1984	71	71	71				
1985	71	57	57				
1986	76	61	61				
1987	72	45	45				
1988	66	45	45				
1989	69	40	40				
1990	72	72	72				
1991	72						
1992	73	48	45				
1993	73	48	48				
1994	73	39	48			73	68
1995	74	51	68				
1996	72						
1997	72	40	40				
1998	72	52	28				
1999	71	57	58	57	59	71	68
2000	72	57	57	57	57		
2001	72	49	49		49		
2002	73	45	45	45	45		
2003	74	56	56	56			
2004	74	43	43	43	31		
2005	75	62	62	62	62	75	73
2006	75	59	59	59	59		
2007	75	70	70	70	70		
2008	75	62	62	62	62		

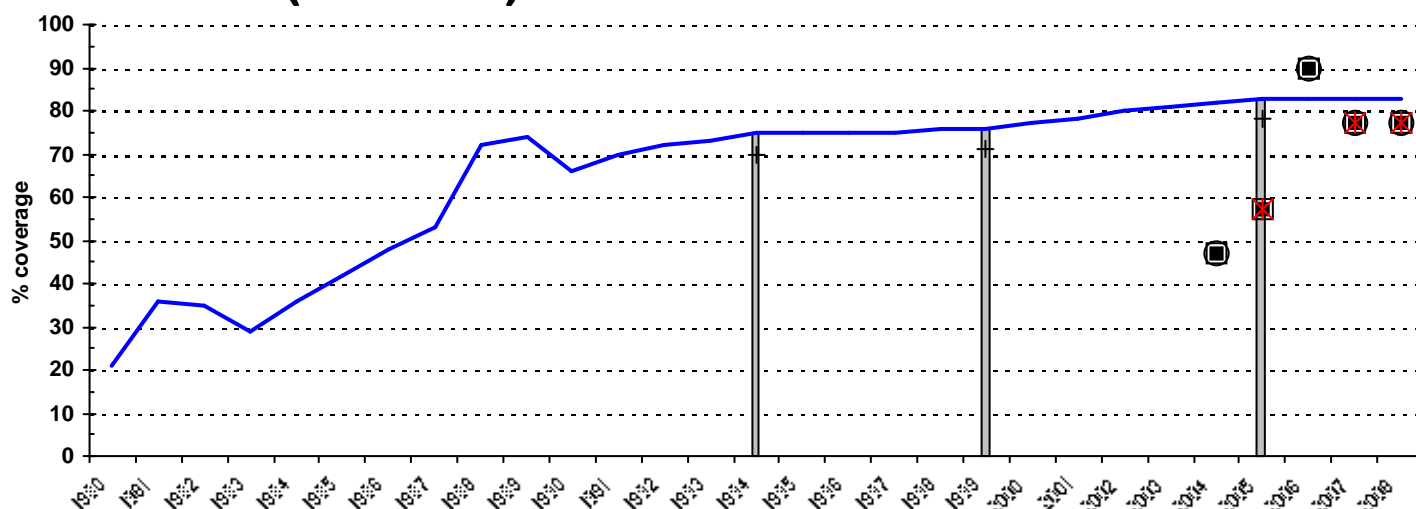
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*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.

# Haiti

## DTP1 (1980-2008)



### Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001. From 1991 onward estimates are based on survey results. For 1980 to 1990 estimates were derived from the WHO/UNICEF estimates of DTP3 and the relationship between the levels of DTP3 coverage and the coverage of DTP1. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004.

### Data presented in chart

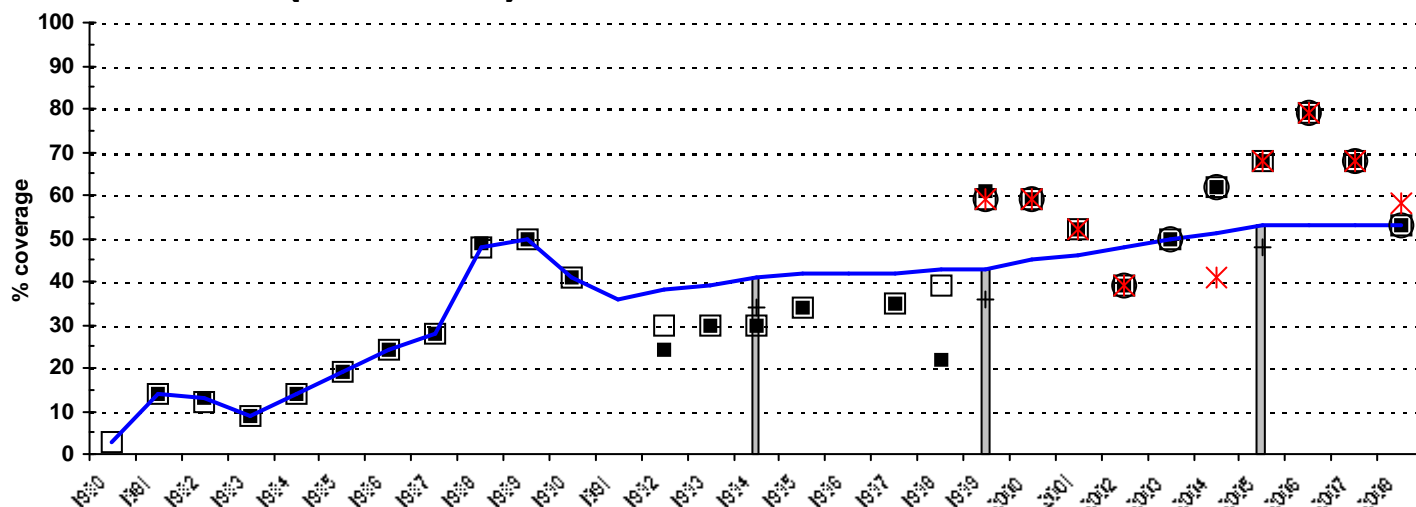
Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	21						
1981	36						
1982	35						
1983	29						
1984	36						
1985	42						
1986	48						
1987	53						
1988	72						
1989	74						
1990	66						
1991	70						
1992	72						
1993	73						
1994	75					75	70
1995	75						
1996	75						
1997	75						
1998	76						
1999	76					76	71
2000	77						
2001	78						
2002	80						
2003	81						
2004	82	47	47	47			
2005	83	57	57		57	83	78
2006	83	90	90	90			
2007	83	77	77	77	77		
2008	83	77	77	77	77		

\*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.

## DTP3 (1980-2008)



### Description of trend

Trend follows officially reported data in the 1980s. Estimates from 1994 onward are established by survey data. In 2002 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system.

### 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	3	3					
1981	14	14	14				
1982	13	12	13				
1983	9	9	9				
1984	14	14	14				
1985	19	19	19				
1986	24	24	24				
1987	28	28	28				
1988	48	48	49				
1989	50	50	50				
1990	41	41	41				
1991	36						
1992	38	30	24				
1993	39	30	30				
1994	41	30	30			41	34
1995	42	34	34				
1996	42						
1997	42	35	35				
1998	43	39	22				
1999	43	59	61	59	59	43	36
2000	45	59	59	59	59		
2001	46	52	52		52		
2002	48	39	39	39	39		
2003	50	50	50	50			
2004	51	62	62	62	41		
2005	53	68	68		68	53	48
2006	53	79	79	79			
2007	53	68	68	68	68		
2008	53	53	53	53	58		

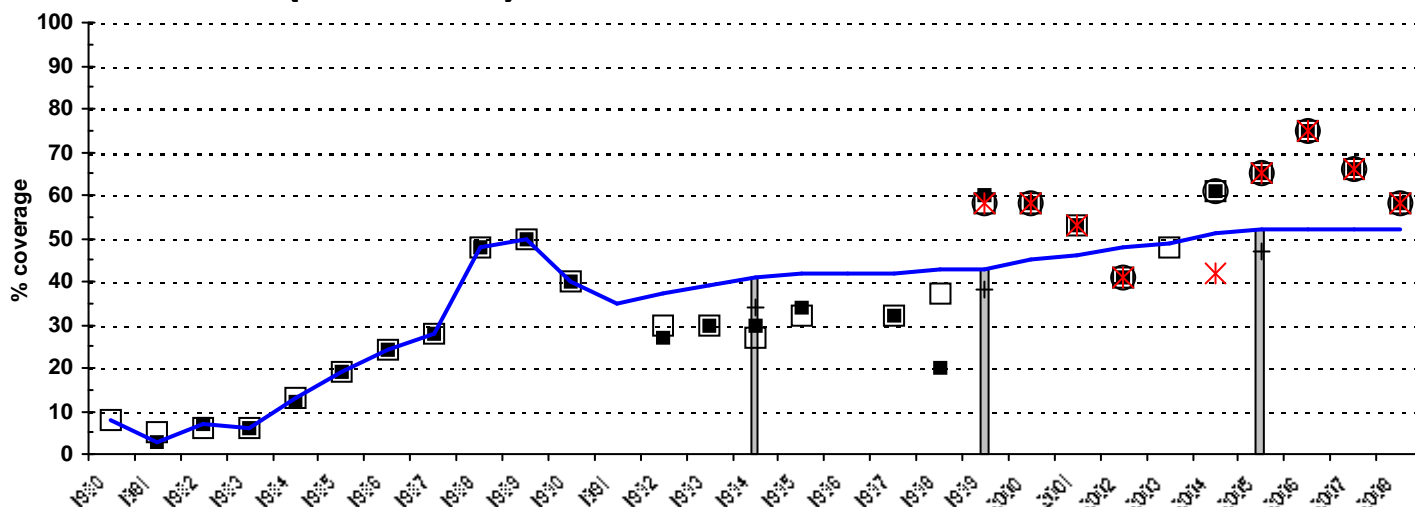
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*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.

# Haiti

## Pol3 (1980-2008)



### Description of trend

Trend follows officially reported data in the 1980s. Estimates from 1994 onward are based on survey data. The WHO reported points in 1988- included vaccinations given during campaigns which resulted in higher coverage rates. In 2002 a data quality audit was conducted for the Vac Fund and the results suggest inadequacies in the routine reporting system.

### 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	8	8					
1981	3	5	3				
1982	7	6	7				
1983	6	6	6				
1984	13	13	12				
1985	19	19	19				
1986	24	24	24				
1987	28	28	28				
1988	48	48	48				
1989	50	50	50				
1990	40	40	40				
1991	35						
1992	37	30	27				
1993	39	30	30				
1994	41	27	30			41	34
1995	42	32	34				
1996	42						
1997	42	32	32				
1998	43	37	20				
1999	43	58	60	58	58	43	38
2000	45	58	58	58	58		
2001	46	53	53		53		
2002	48	41	41	41	41		
2003	49	48					
2004	51	61	61	61	42		
2005	52	65	65	65	65	52	47
2006	52	75	75	75	75		
2007	52	66	66	66	66		
2008	52	58	58	58	58		

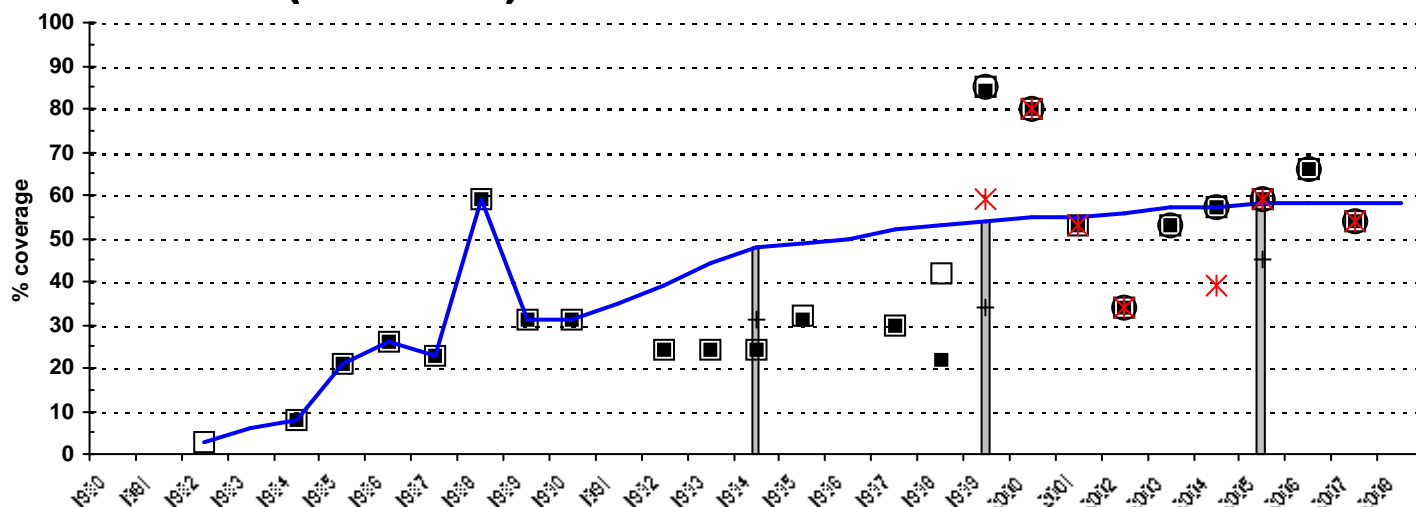
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*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.

# Haiti

## MCV (1980-2008)



### Description of trend

Trend follows officially reported data in the 1980s. From 1994 onward estimates are based on survey data. The WHO reported points in 1988-1990 included vaccinations given during campaigns which resulted in higher coverage rates. In 2002 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system. Reported coverage data are not available for 2008 due to a measles immunization campaign and a change in recommend age of measles vaccine administration from 9 months of age to a combination measles and rubella (MR) vaccine at 9 months of age.

### 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	3	3					
1983	6						
1984	8	8	8				
1985	21	21	21				
1986	26	26	26				
1987	23	23	23				
1988	59	59	59				
1989	31	31	31				
1990	31	31	31				
1991	35						
1992	39	24	24				
1993	44	24	24				
1994	48	24	24			48	31
1995	49	32	31				
1996	50						
1997	52	30	30				
1998	53	42	22				
1999	54	85	84	85	59	54	34
2000	55	80	80	80	80		
2001	55	53	53		53		
2002	56	34	34	34	34		
2003	57	53	53	53			
2004	57	57	57	57	39		
2005	58	59	59	59	59	58	45
2006	58	66	66	66			
2007	58	54	54	54	54		
2008	58						

\*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.

# Haiti

## Details Survey Data

### Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
<b>2005 Enquête Mortalité, Morbidité et Utilisation des Services (EMMUS-IV), Haiti 2005-2006</b>								
BCG	Card or History	74.9		12-23 m	1135	72.9	2006	
BCG	C or H <12 month	73.2		12-23 m	1135	72.9	2006	
DTP1	Card or History	83		12-23 m	1135	72.9	2006	
DTP1	C or H <12 month	77.9		12-23 m	1135	72.9	2006	
DTP3	Card or History	53		12-23 m	1135	72.9	2006	
DTP3	C or H <12 month	47.9		12-23 m	1135	72.9	2006	
Pol3	Card or History	51.5		12-23 m	1135	72.9	2006	
Pol3	C or H <12 month	47		12-23 m	1135	72.9	2006	
MCV	Card or History	57.7		12-23 m	1135	72.9	2006	
MCV	C or H <12 month	45.3		12-23 m	1135	72.9	2006	

### 1999 Enquête Mortalité, Morbidité et Utilisation des Services (EMMUS-III), Haiti 2000, 2001

BCG	Card or History	71		12-23 m	1225	66.3	2000	
BCG	C or H <12 month	67.6		12-23 m	1225	66.3	2000	
DTP1	Card or History	76		12-23 m	1225	66.3	2000	
DTP1	C or H <12 month	71		12-23 m	1225	66.3	2000	
DTP3	Card or History	42.9		12-23 m	1225	66.3	2000	
DTP3	C or H <12 month	36.2		12-23 m	1225	66.3	2000	
Pol3	Card or History	42.9		12-23 m	1225	66.3	2000	
Pol3	C or H <12 month	37.5		12-23 m	1225	66.3	2000	
MCV	Card or History	53.9		12-23 m	1225	66.3	2000	
MCV	C or H <12 month	34.3		12-23 m	1225	66.3	2000	

### 1994 Enquête Mortalité, Morbidité et Utilisation des Services (EMMUS-II) Haiti 1994/95, 1995

BCG	Card or History	73.4		12-23 m	667	46.8	1994/95	
BCG	C or H <12 month	67.5		12-23 m	667	46.8	1994/95	
BCG	C or H <12 month	67.7		24-35 m	617	46.5	1994/95	
BCG	C or H <12 month	56.5		36-47 m	666	42.1	1994/95	
BCG	C or H <12 month	61.1		48-59 m	633	38.3	1994/95	
DTP1	Card or History	74.7		12-23 m	667	46.8	1994/95	
DTP1	C or H <12 month	70.2		12-23 m	667	46.8	1994/95	
DTP1	C or H <12 month	59.7		24-35 m	617	46.5	1994/95	
DTP1	C or H <12 month	49.8		36-47 m	666	42.1	1994/95	
DTP1	C or H <12 month	51.9		48-59 m	633	38.3	1994/95	
DTP3	Card or History	41.4		12-23 m	667	46.8	1994/95	
DTP3	C or H <12 month	33.5		12-23 m	667	46.8	1994/95	
DTP3	C or H <12 month	27.1		24-35 m	617	46.5	1994/95	
DTP3	C or H <12 month	19.9		36-47 m	666	42.1	1994/95	
DTP3	C or H <12 month	23.5		48-59 m	633	38.3	1994/95	
Pol3	Card or History	41.4		12-23 m	667	46.8	1994/95	
Pol3	C or H <12 month	33.8		12-23 m	667	46.8	1994/95	
Pol3	C or H <12 month	28.1		24-35 m	617	46.5	1994/95	
Pol3	C or H <12 month	21		36-47 m	666	42.1	1994/95	
Pol3	C or H <12 month	24.7		48-59 m	633	38.3	1994/95	
MCV	Card or History	47.9		12-23 m	667	46.8	1994/95	
MCV	C or H <12 month	30.6		12-23 m	667	46.8	1994/95	
MCV	C or H <12 month	30		24-35 m	617	46.5	1994/95	
MCV	C or H <12 month	18.5		36-47 m	666	42.1	1994/95	
MCV	C or H <12 month	21.9		48-59 m	633	38.3	1994/95	

## Haiti

### 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.

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<sup>1</sup> 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.

## Haiti

<b>Year</b>	<b>PAB coverage estimate (%)</b>
1980	14
1981	19
1982	25
1983	28
1984	32
1985	36
1986	39
1987	43
1988	38
1989	39
1990	39
1991	40
1992	40
1993	40
1994	41
1995	41
1996	41
1997	41
1998	41
1999	41
2000	41
2001	42
2002	42
2003	42
2004	48
2005	37
2006	31
2007	43
2008	50