

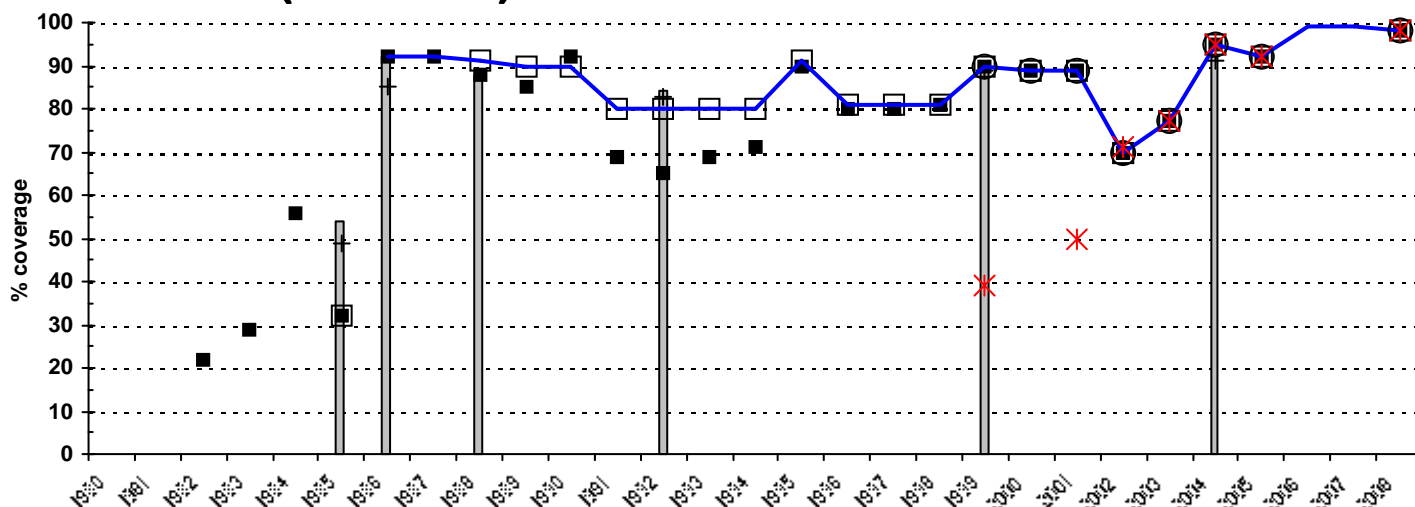
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Senegal

July, 2009

Senegal

BCG (1980-2008)



Description of trend

Prior to 1986 EPI was implemented in only three regions of the country. Estimated immunization coverage levels are based on reported data, supported by survey results.

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			22				
1983			29				
1984			56				
1985		32	32			54	49
1986	92		92			92	85
1987	92		92				
1988	91	91	88			88	
1989	90	90	85				
1990	90	90	92				
1991	80	80	69				
1992	80	80	65			84	83
1993	80	80	69				
1994	80	80	71				
1995	91	91	90				
1996	81	81	80				
1997	81	81	80				
1998	81	81	81				
1999	90	90	90	90	39	90	89
2000	89	89	89	89			
2001	89	89	89	89	50		
2002	70	70	70	70	71		
2003	77	77	77	77	77		
2004	95	95	95	95	95	92	91
2005	92	92	92	92	92		
2006	99	104	104	104	104		
2007	99	107	107	107	107		
2008	98	98	98	98	98		

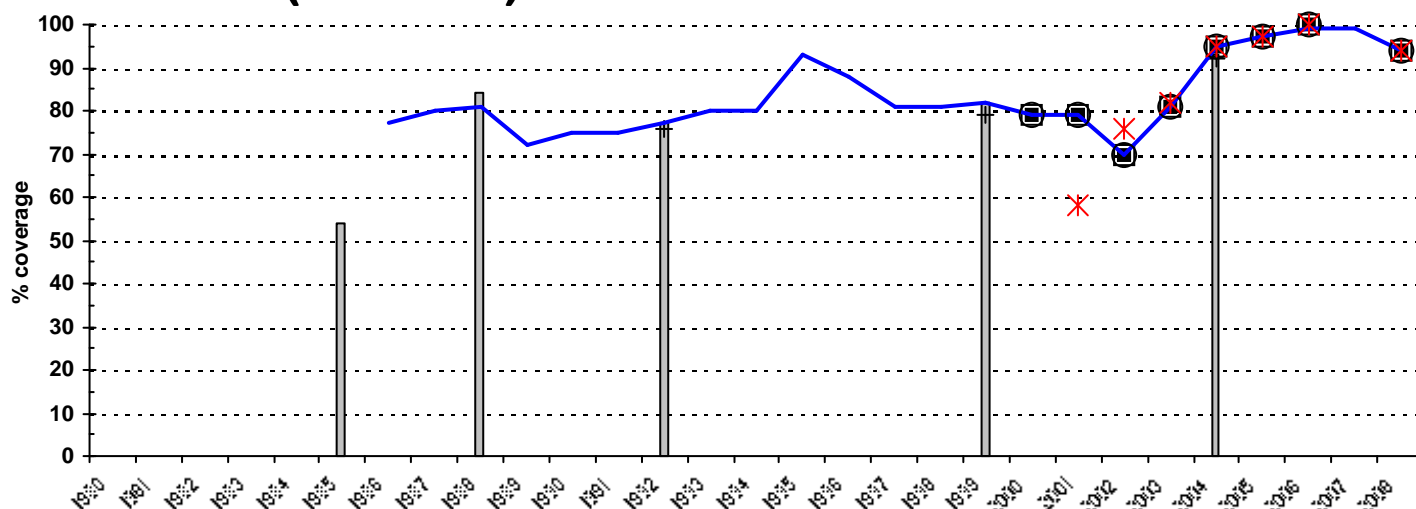
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Senegal

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 onward are based on these reports supported by survey. 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 drop-out between DTF and DTP3. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2000.

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						54	
1986	77						
1987	80						
1988	81					84	
1989	72						
1990	75						
1991	75						
1992	77					77	76
1993	80						
1994	80						
1995	93						
1996	88						
1997	81						
1998	81						
1999	82						
2000	79	79	79	79		82	79
2001	79	79	79	79	58		
2002	70	70	70	70	76		
2003	81	81	81	81	82		
2004	95	95	95	95	95	93	92
2005	97	97	97	97	97		
2006	99	100	100	100	100		
2007	99	101	101	101	101		
2008	94	94	94	94	94		

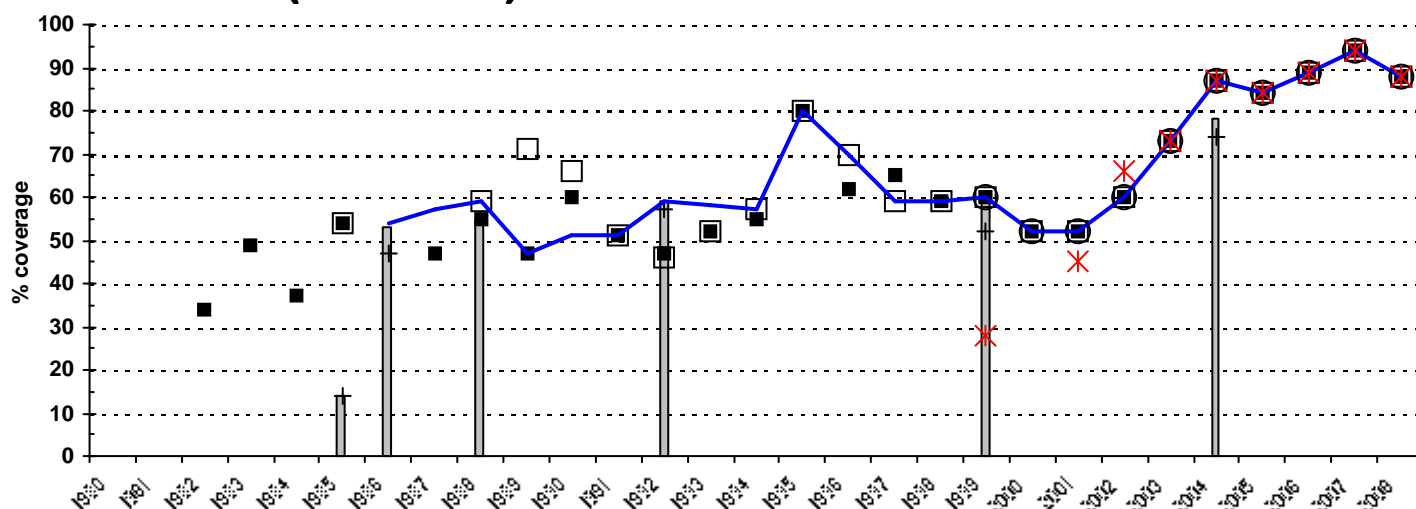
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Senegal

DTP3 (1980-2008)



Description of trend

Prior to 1986 EPI was implemented in only three regions of the country. Estimated immunization coverage levels are based on reported data, supported by survey results.

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			34				
1983			49				
1984			37				
1985		54	54				
1986	54					14	14
1987	57		47			53	47
1988	59	59	55			55	
1989	47	71	47				
1990	51	66	60				
1991	51	51	51				
1992	59	46	47			59	57
1993	58	52	52				
1994	57	57	55				
1995	80	80	80				
1996	70	70	62				
1997	59	59	65				
1998	59	59	59				
1999	60	60	60	60	28	60	52
2000	52	52	52	52			
2001	52	52	52	52	45		
2002	60	60	60	60	66		
2003	73	73	73	73	73		
2004	87	87	87	87	87	78	74
2005	84	84	84	84	84		
2006	89	89	89	89	89		
2007	94	94	94	94	94		
2008	88	88	88	88	88		

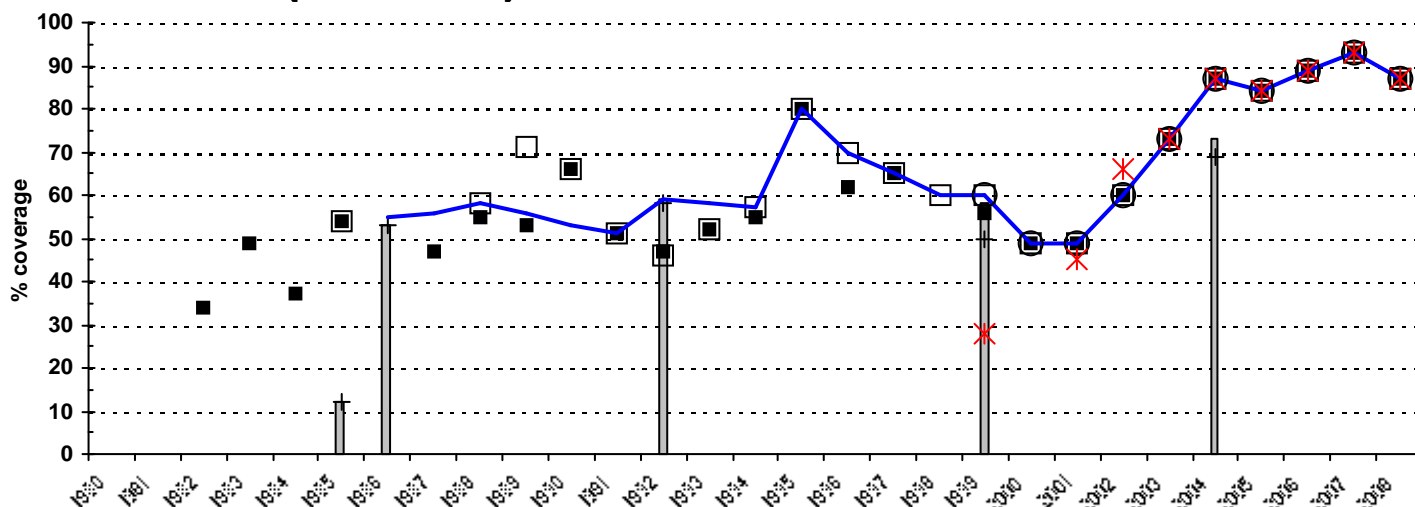
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Senegal

Pol3 (1980-2008)



Description of trend

Prior to 1986 EPI was implemented in only three regions of the country. Estimated immunization coverage levels are based on reported data, supported by survey results.

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			34				
1983			49				
1984			37				
1985		54	54			12	12
1986	55					53	53
1987	56		47				
1988	58	58	55				
1989	56	71	53				
1990	53	66	66				
1991	51	51	51				
1992	59	46	47			59	58
1993	58	52	52				
1994	57	57	55				
1995	80	80	80				
1996	70	70	62				
1997	65	65	65				
1998	60	60					
1999	60	60	56	60	28	58	50
2000	49	49	49	49			
2001	49	49	49	49	45		
2002	60	60	60	60	66		
2003	73	73	73	73	73		
2004	87	87	87	87	87	73	69
2005	84	84	84	84	84		
2006	89	89	89	89	89		
2007	93	93	93	93	93		
2008	87	87	87	87	87		

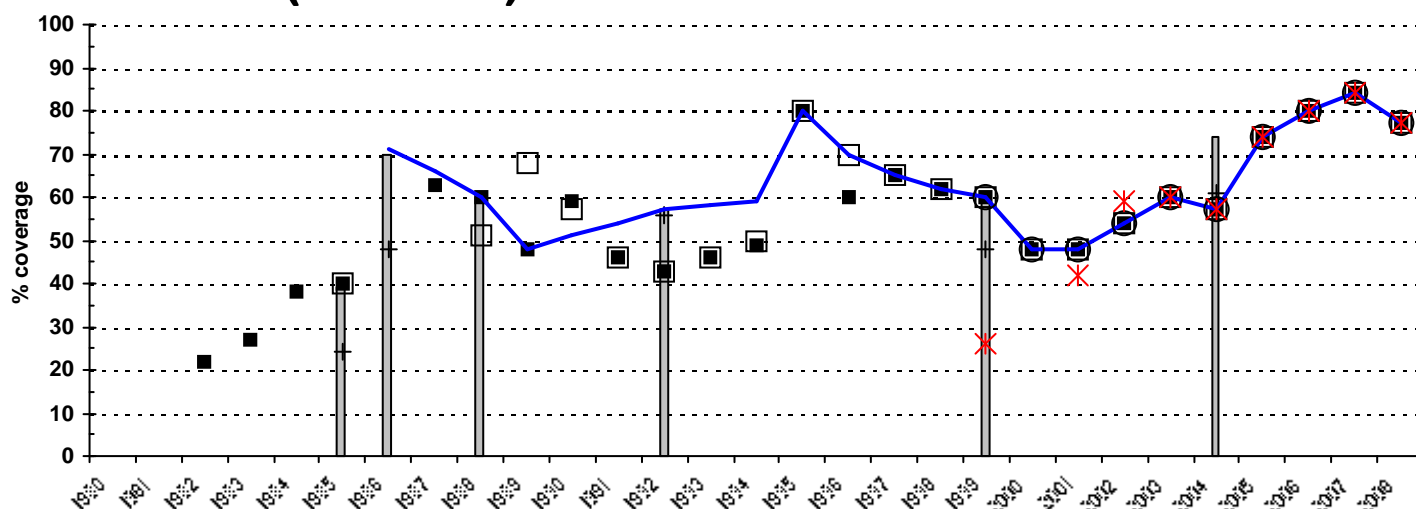
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Senegal

MCV (1980-2008)



Description of trend

Prior to 1986 EPI was implemented in only three regions of the country. Estimated immunization coverage levels are based on reported data, supported by survey results. During 2004 there was a national shortage of measles vaccine for three months. The 2004 DHS survey results (coverage by 24 months) most likely reflect late immunization of children to compensate for lack of vaccine.

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			22				
1983			27				
1984			38				
1985		40	40			39	24
1986	71					70	48
1987	66		63				
1988	60	51	60			60	
1989	48	68	48				
1990	51	57	59				
1991	54	46	46				
1992	57	43	43			57	56
1993	58	46	46				
1994	59	50	49				
1995	80	80	80				
1996	70	70	60				
1997	65	65	65				
1998	62	62	62				
1999	60	60	60	60	26	61	48
2000	48	48	48	48			
2001	48	48	48	48	42		
2002	54	54	54	54	59		
2003	60	60	60	60	60		
2004	57	57	57	57	57	74	61
2005	74	74	74	74	74		
2006	80	80	80	80	80		
2007	84	84	84	84	84		
2008	77	77	77	77	77		

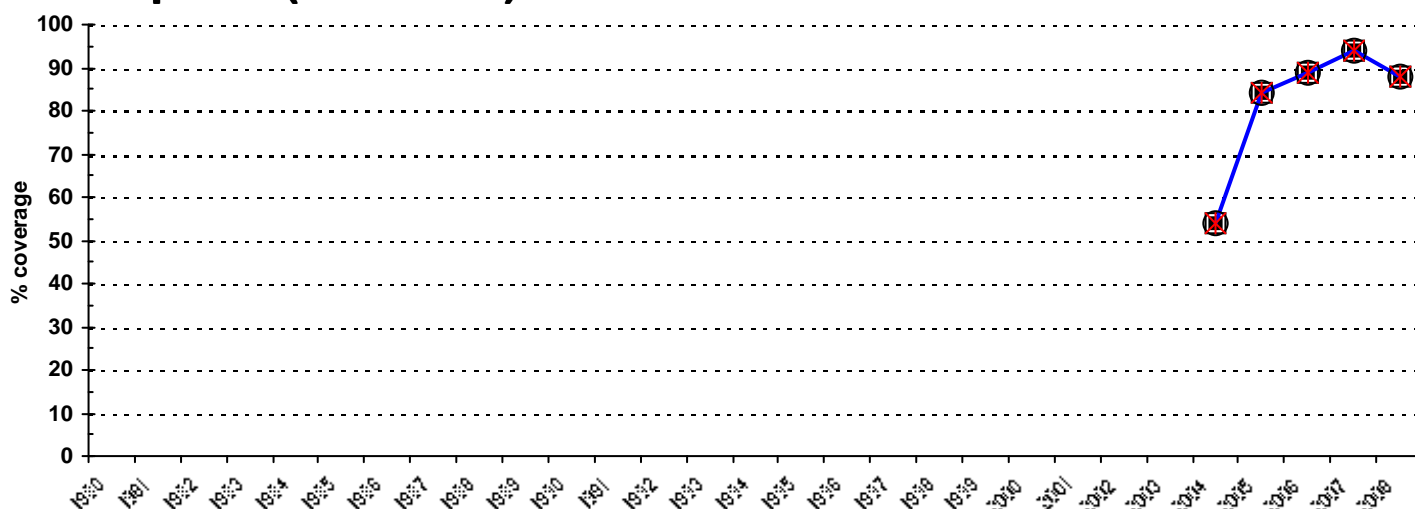
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Senegal

HepB3 (1980-2008)



Description of trend

Hepatitis B introduced in 2004. Estimated immunization coverage levels are based on reported data.

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							
2004	54	54	54	54	54		
2005	84	84	84	84	84		
2006	89	89	89	89	89		
2007	94	94	94	94	94		
2008	88	88	88	88	88		

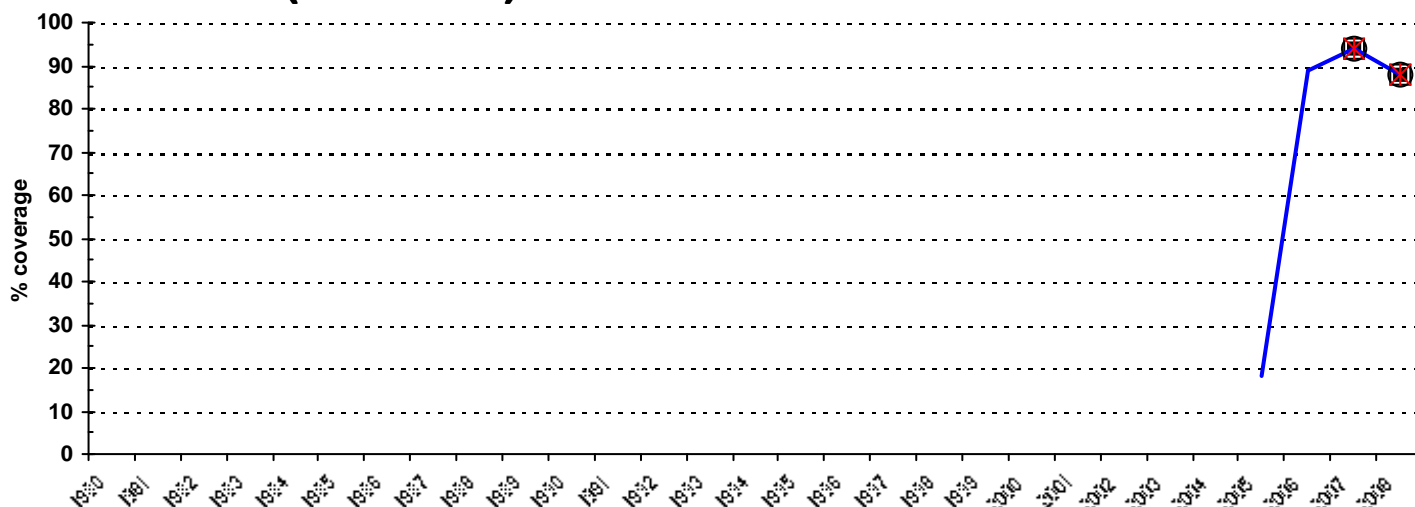
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Senegal

Hib3 (1980-2008)



Description of trend

DTP-HepB-Hib Pentavalent vaccine introduced in July 2005; coverage of 67% reached in 25% of the country. Estimates of Hib3 coverage are based on reported data.

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							
2004							
2005	18						
2006	89						
2007	94	94	94	94	94		
2008	88	88	88	88	88		

*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.

Senegal

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2004 Enquête Démographique et de Santé, Sénégal 2005								
BCG	Card or History	91.7		12-23 m	2040	70	2005	
BCG	C or H <12 month	90.8		12-23 m	2040	70	2005	
DTP1	Card or History	93.2		12-23 m	2040	70	2005	
DTP1	C or H <12 month	92.5		12-23 m	2040	70	2005	
DTP3	Card or History	78.3		12-23 m	2040	70	2005	
DTP3	C or H <12 month	74.1		12-23 m	2040	70	2005	
Pol3	Card or History	72.9		12-23 m	2040	70	2005	
Pol3	C or H <12 month	68.9		12-23 m	2040	70	2005	
MCV	Card or History	73.5		12-23 m	2040	70	2005	
MCV	C or H <12 month	61.2		12-23 m	2040	70	2005	
1999 Rapport final revue externe PEV du Senegal, Jan 2000								
BCG	Card or History	89.9		12-23 m	2100	81.2	2000	
BCG	C or H <12 month	88.8		12-23 m	2100	81.2	2000	
DTP1	Card or History	81.8		12-23 m	2100	81.2	2000	
DTP1	C or H <12 month	78.8		12-23 m	2100	81.2	2000	
DTP3	Card or History	59.6		12-23 m	2100	81.2	2000	
DTP3	C or H <12 month	51.8		12-23 m	2100	81.2	2000	
Pol3	Card or History	56.5		12-23 m	2100	81.2	2000	
Pol3	C or H <12 month	48.8		12-23 m	2100	81.2	2000	
MCV	Card or History	59.7		12-23 m	2100	81.2	2000	
MCV	C or H <12 month	47.9		12-23 m	2100	81.2	2000	
1999 Sénégal, Enquête Sénégalaise sur les Indicateurs de Santé (ESIS) 1999, 2000								
BCG	Card or History	87.9		12-23 m	2137	59.3	1999	
BCG	C or H <12 month	82.2		12-23 m	2137	59.3	1999	
DTP1	Card or History	73.3		12-23 m	2137	59.3	1999	
DTP1	C or H <12 month	69.4		12-23 m	2137	59.3	1999	
DTP3	Card or History	50		12-23 m	2137	59.3	1999	
DTP3	C or H <12 month	42.7		12-23 m	2137	59.3	1999	
Pol3	Card or History	58.2		12-23 m	2137	59.3	1999	
Pol3	C or H <12 month	50		12-23 m	2137	59.3	1999	
MCV	Card or History	61.2		12-23 m	2137	59.3	1999	
MCV	C or H <12 month	46.5		12-23 m	2137	59.3	1999	
1992 Enquête Démographique et de Santé au Sénégal (EDS-II) 1992/93, 1994								
BCG	Card or History	83.6		12-23 m	959	64.6	1992/93	
BCG	C or H <12 month	79.9		12-23 m	959	64.6	1992/93	
BCG	C or H <12 month	83.2		24-35 m	975	52.5	1992/93	
BCG	C or H <12 month	81.4		36-47 m	1030	43.8	1992/93	Recalculated
BCG	C or H <12 month	76		48-59 m	1008	39	1992/93	Recalculated
DTP1	Card or History	76.9		12-23 m	959	64.6	1992/93	
DTP1	C or H <12 month	73.5		12-23 m	959	64.6	1992/93	
DTP1	C or H <12 month	76.1		24-35 m	975	52.5	1992/93	
DTP1	C or H <12 month	74.2		36-47 m	1030	43.8	1992/93	Recalculated
DTP1	C or H <12 month	66.8		48-59 m	1008	39	1992/93	Recalculated
DTP3	Card or History	58.8		12-23 m	959	64.6	1992/93	
DTP3	C or H <12 month	54.3		12-23 m	959	64.6	1992/93	
DTP3	C or H <12 month	57.3		24-35 m	975	52.5	1992/93	
DTP3	C or H <12 month	51.2		36-47 m	1030	43.8	1992/93	Recalculated

Senegal

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
DTP3	C or H <12 month	44.3		48-59 m	1008	39	1992/93	Recalculated
Pol3	Card or History	59.3		12-23 m	959	64.6	1992/93	
Pol3	C or H <12 month	55.1		12-23 m	959	64.6	1992/93	
Pol3	C or H <12 month	57.9		24-35 m	975	52.5	1992/93	
Pol3	C or H <12 month	51.8		36-47 m	1030	43.8	1992/93	Recalculated
Pol3	C or H <12 month	45.4		48-59 m	1008	39	1992/93	Recalculated
MCV	Card or History	57.2		12-23 m	959	64.6	1992/93	
MCV	C or H <12 month	44.6		12-23 m	959	64.6	1992/93	
MCV	C or H <12 month	51.2		24-35 m	975	52.5	1992/93	
MCV	C or H <12 month	56.3		36-47 m	1030	43.8	1992/93	Recalculated
MCV	C or H <12 month	43.5		48-59 m	1008	39	1992/93	Recalculated

1988 Senegal, Follow up Rapid Assessment, Universal Childhood Immunization (UCI) and Social Mobilization: Evaluation of Senegal's Immunization Programme, 1989

BCG	Card or History	88		12-23 m			1989	
DTP1	Card or History	84		12-23 m			1989	
DTP3	Card or History	55		12-23 m			1989	
Pol3	Card or History			12-23 m			1989	
MCV	Card or History	60		12-23 m			1989	

1986 Enquête de la Couverture Vaccinale au Senegal, Janvier 2000 - Draft

BCG	C or H <12 month	85		12-23 m	6216		1987	
DTP1	C or H <12 month			12-23 m	6216		1987	
DTP3	C or H <12 month	47		12-23 m	6216		1987	
Pol3	C or H <12 month	53		12-23 m	6216		1987	
MCV	C or H <12 month	48		12-23 m	6216		1987	

1986 Rapport d'Evaluation de la Couverture Vaccinale des Enfants de 12 a 23 mois en Republique du Senegal au 01-07-1987

BCG	Card or History	92		12-23 m	6216		1987	Confirmation method not clear
DTP1	Card or History			12-23 m	6216		1987	Confirmation method not clear
DTP3	Card or History	53		12-23 m	6216		1987	Confirmation method not clear
Pol3	Card or History	53		12-23 m	6216		1987	Confirmation method not clear
MCV	Card or History	70		12-23 m	6216		1987	Confirmation method not clear

1985 Demographic and Health Surveys Comparative Studies No. 1, Immunization, Boerma et al., Institute for Resource Development/Macro Systems, 1990

BCG	Card or History	54		12-23 m	791		1986	
BCG	C or H <12 month	49		12-23 m	791		1986	
DTP1	Card or History	54		12-23 m	791		1986	
DTP1	C or H <12 month			12-23 m	791		1986	
DTP3	Card or History	14		12-23 m	791		1986	
DTP3	C or H <12 month	14		12-23 m	791		1986	
Pol3	Card or History	12		12-23 m	791		1986	
Pol3	C or H <12 month	12		12-23 m	791		1986	
MCV	Card or History	39		12-23 m	791		1986	
MCV	C or H <12 month	24		12-23 m	791		1986	

Senegal

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.

Senegal

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	7
1986	14
1987	23
1988	31
1989	38
1990	45
1991	45
1992	41
1993	45
1994	47
1995	54
1996	55
1997	53
1998	54
1999	58
2000	62
2001	64
2002	72
2003	77
2004	78
2005	80
2006	86
2007	85
2008	88