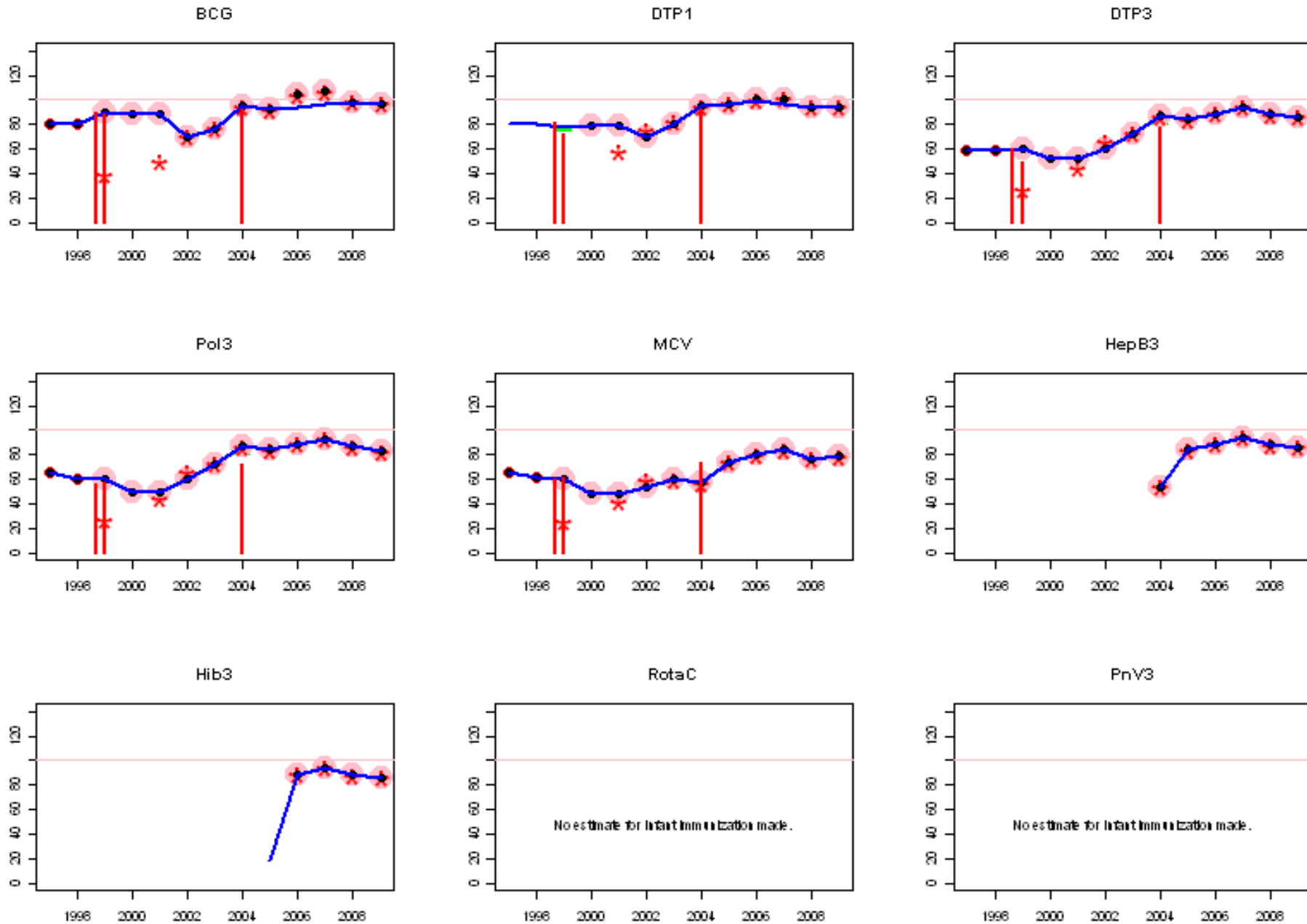
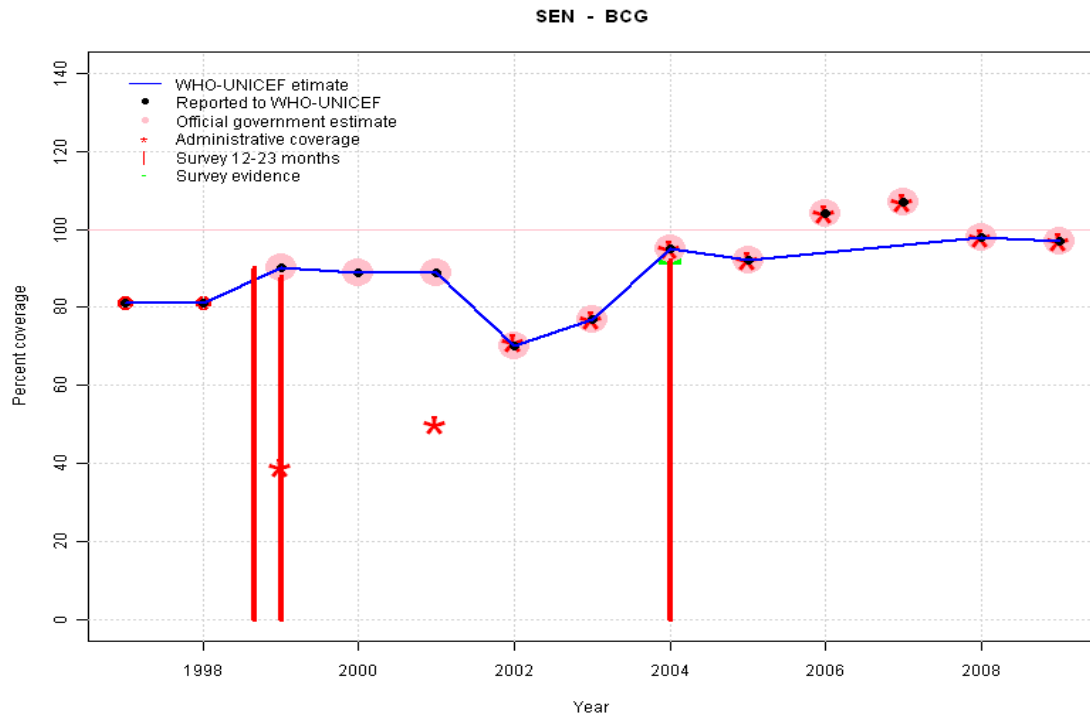


Senegal: WHO and UNICEF estimates of immunization coverage, 1997 - 2009



Senegal - BCG



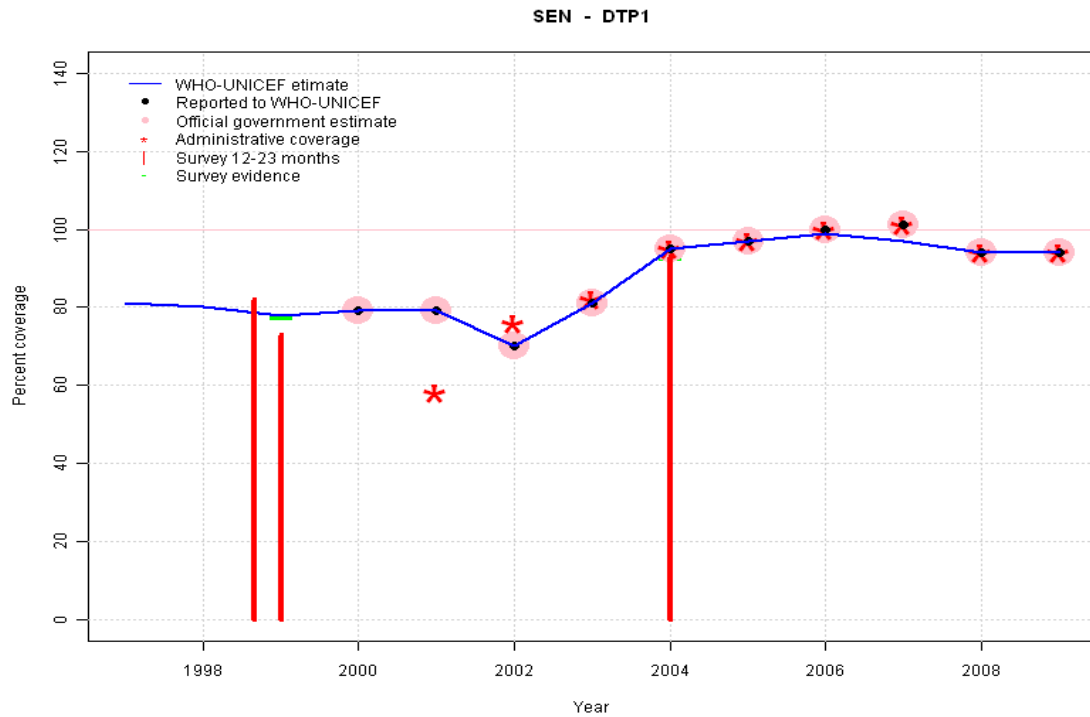
Description:

- 1997: Legacy estimate.
- 1998: Estimate based on reported data.
- 1999: Estimate based on reported data (90 percent) confirmed by survey (89 percent). 2 surveys, results = 90, 88, mean = 89 percent.
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data (95 percent) confirmed by survey (92 percent).
- 2005: Estimate based on reported data.
- 2006: Estimate based on trend in reported data. Missing or ignored reported value estimated by interpolation between reported values of 92 percent in 2005 and 98 percent in 2008. 2006 reported data (104 percent) ignored; greater than 100 percent.
- 2007: Estimate based on trend in reported data. Missing or ignored reported value estimated by interpolation between reported values of 92 percent in 2005 and 98 percent in 2008. 2007 reported data (107 percent) ignored; greater than 100 percent.
- 2008: Estimate based on reported data.
- 2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	81	81	90	89	89	70	77	95	92	94	96	98	97
Reported	81	81	90	89	89	70	77	95	92	104	107	98	97
Official	NA	NA	90	89	89	70	77	95	92	104	107	98	97
Administrative	NA	NA	39	NA	50	71	77	95	92	104	107	98	97
Survey	NA	NA	89	NA	NA	NA	NA	92	NA	NA	NA	NA	NA

Senegal - DTP1

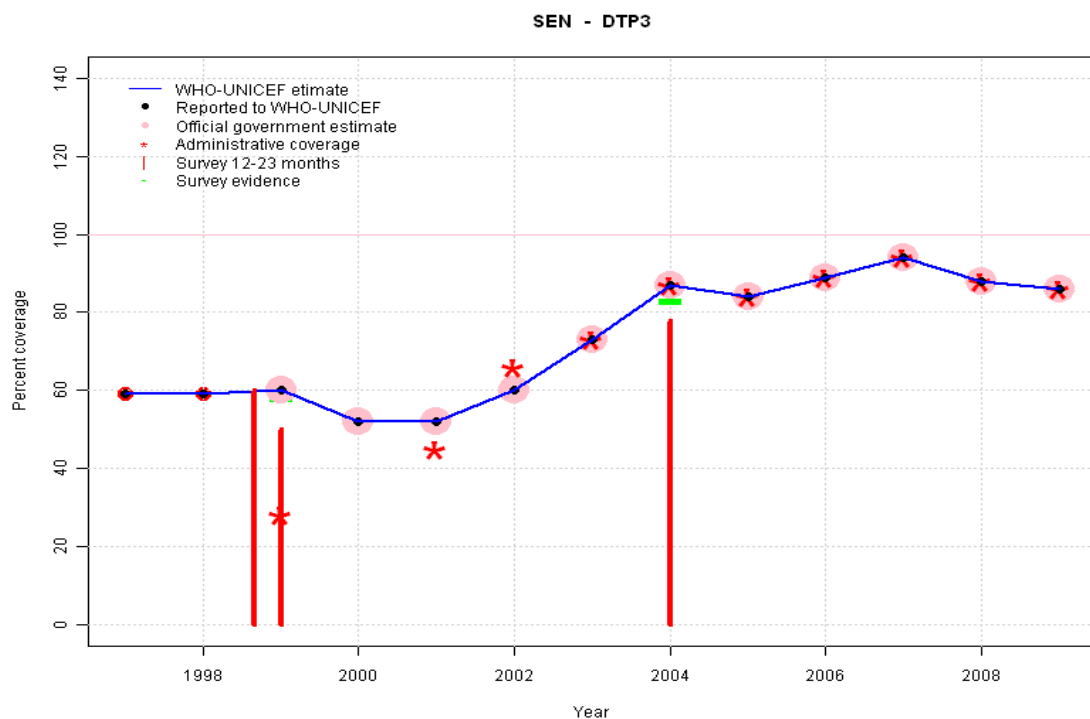
Description:



- 1997: Legacy estimate.
- 1998: Estimate interpolated between 1997 and 1999 estimates.
- 1999: Estimate is based on survey results.
- 2000: Estimate is based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data (95 percent) confirmed by survey (93 percent).
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on trend in reported data. Missing or ignored reported value estimated by interpolation between reported values of 100 percent in 2006 and 94 percent in 2008. 2007 reported data (101 percent) ignored; greater than 100 percent.
- 2008: Estimate based on reported data.
- 2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	81	80	78	79	79	70	81	95	97	99	97	94	94
Reported	NA	NA	NA	79	79	70	81	95	97	100	101	94	94
Official	NA	NA	NA	79	79	70	81	95	97	100	101	94	94
Administrative	NA	NA	NA	NA	58	76	82	95	97	100	101	94	94
Survey	NA	NA	78	NA	NA	NA	NA	93	NA	NA	NA	NA	NA

Senegal - DTP3



Description:

1997: Legacy estimate.

1998: Estimate based on reported data.

1999: Estimate based on reported data (60 percent) confirmed by survey (58 percent). 2 surveys, results = 60, 56, mean = 58 percent. Survey results (60 percent) adjusted for recall bias to 60 percent based on first dose card or history coverage (82 percent) and documented drop-out between first (71 percent) and third (52 percent) doses. Survey results (50 percent) adjusted for recall bias to 56 percent based on first dose card or history coverage (73 percent) and documented drop-out between first (55 percent) and third (42 percent) doses.

2000: Estimate based on reported data.

2001: Estimate based on reported data.

2002: Estimate based on reported data.

2003: Estimate based on reported data.

2004: Estimate based on reported data (87 percent) confirmed by survey (83 percent). Survey results (78 percent) adjusted for recall bias to 83 percent based on first dose card or history coverage (93 percent) and documented drop-out between first (68 percent) and third (61 percent) doses.

2005: Estimate based on reported data.

2006: Estimate based on reported data.

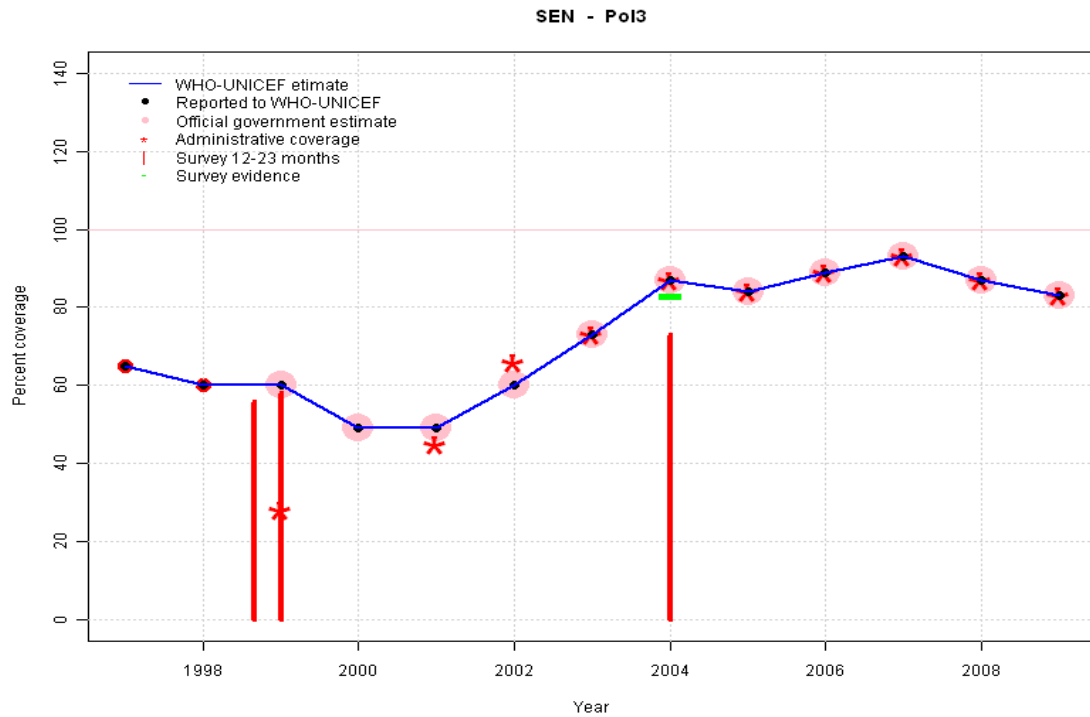
2007: Estimate based on reported data.

2008: Estimate based on reported data.

2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	59	59	60	52	52	60	73	87	84	89	94	88	86
Reported	59	59	60	52	52	60	73	87	84	89	94	88	86
Official	NA	NA	60	52	52	60	73	87	84	89	94	88	86
Administrative	NA	NA	28	NA	45	66	73	87	84	89	94	88	86
Survey	NA	NA	58	NA	NA	NA	NA	83	NA	NA	NA	NA	NA

Senegal - Pol3



Description:

1997: Legacy estimate.

1998: Estimate based on reported data.

1999: Estimate based on reported data (60 percent) confirmed by survey (62 percent). 2 surveys, results = 58, 65, mean = 62 percent. Survey results (56 percent) adjusted for recall bias to 58 percent based on first dose card or history coverage (76 percent) and documented drop-out between first (66 percent) and third (50 percent) doses. Survey results (58 percent) adjusted for recall bias to 65 percent based on first dose card or history coverage (86 percent) and documented drop-out between first (57 percent) and third (43 percent) doses.

2000: Estimate based on reported data.

2001: Estimate based on reported data.

2002: Estimate based on reported data.

2003: Estimate based on reported data.

2004: Estimate based on reported data (87 percent) confirmed by survey (83 percent). Survey results (73 percent) adjusted for recall bias to 83 percent based on first dose card or history coverage (94 percent) and documented drop-out between first (69 percent) and third (61 percent) doses.

2005: Estimate based on reported data.

2006: Estimate based on reported data.

2007: Estimate based on reported data.

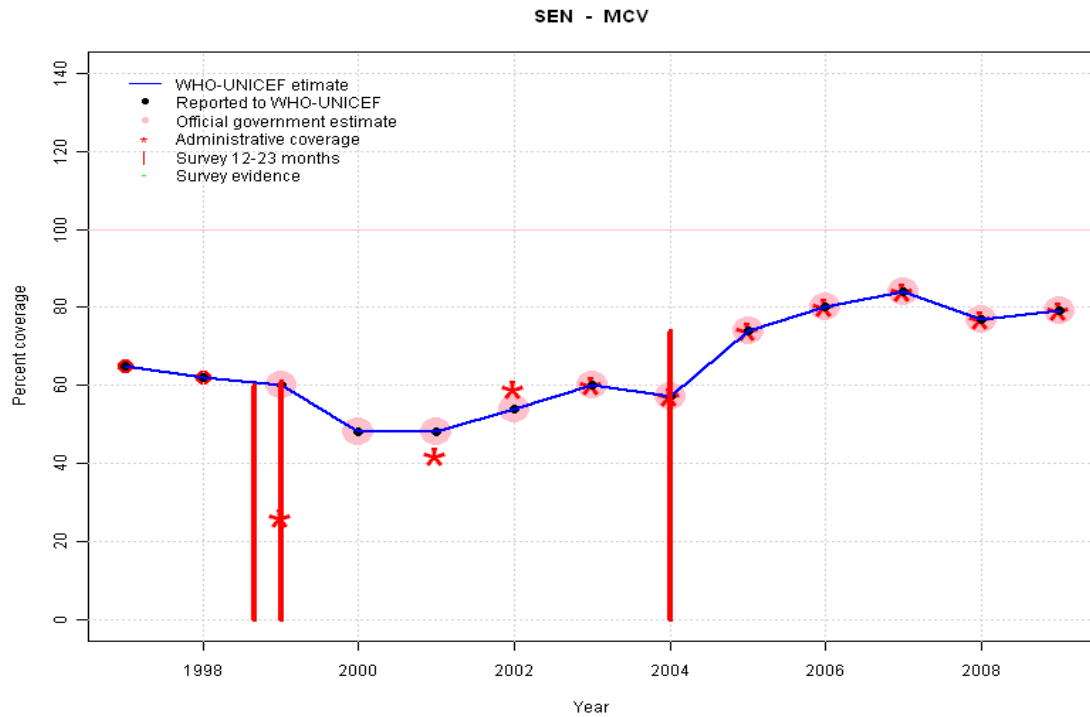
2008: Estimate based on reported data.

2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	65	60	60	49	49	60	73	87	84	89	93	87	83
Reported	65	60	60	49	49	60	73	87	84	89	93	87	83
Official	NA	NA	60	49	49	60	73	87	84	89	93	87	83
Administrative	NA	NA	28	NA	45	66	73	87	84	89	93	87	83
Survey	NA	NA	62	NA	NA	NA	NA	83	NA	NA	NA	NA	NA

Senegal - MCV

Description:



1997: Legacy estimate.

1998: Estimate based on reported data.

1999: Estimate based on reported data (60 percent) confirmed by survey (61 percent). 2 surveys, results = 60, 61, mean = 61 percent.

2000: Estimate based on reported data.

2001: Estimate based on reported data.

2002: Estimate based on reported data.

2003: Estimate based on reported data.

2004: Estimate based on reported data. Survey results of 74 percent ignored by working group. DHS survey results most likely reflect late immunization of children to compensate for vaccine shortage in 2004.

2005: Estimate based on reported data.

2006: Estimate based on reported data.

2007: Estimate based on reported data.

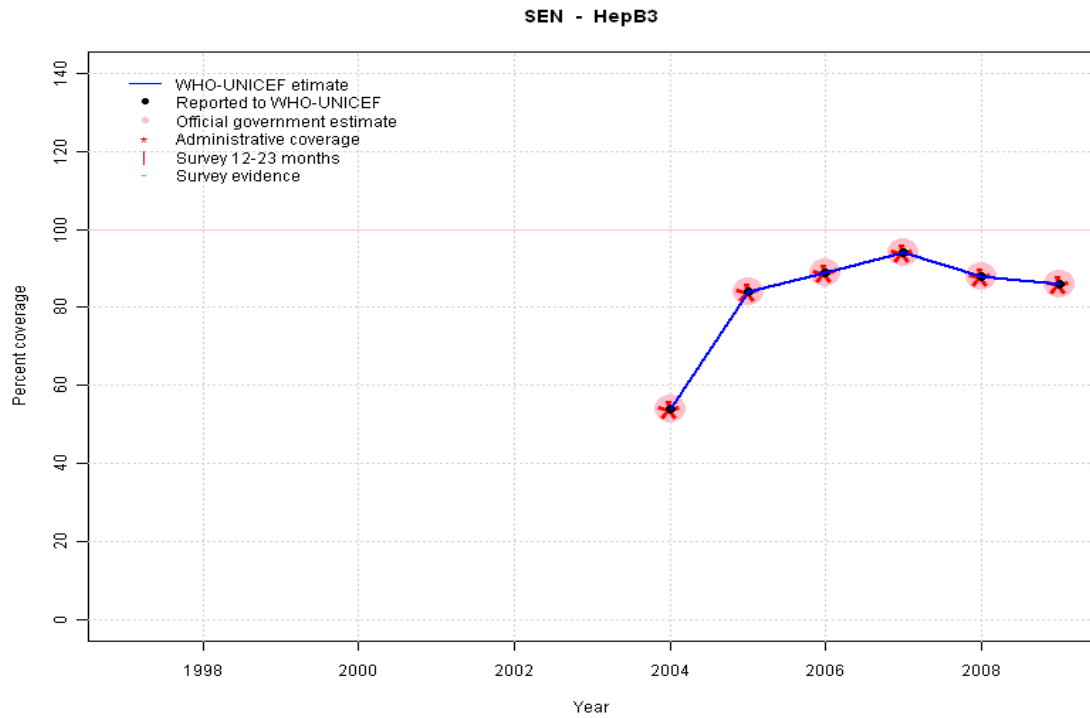
2008: Estimate based on reported data.

2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	65	62	60	48	48	54	60	57	74	80	84	77	79
Reported	65	62	60	48	48	54	60	57	74	80	84	77	79
Official	NA	NA	60	48	48	54	60	57	74	80	84	77	79
Administrative	NA	NA	26	NA	42	59	60	57	74	80	84	77	79
Survey	NA	NA	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Senegal - HepB3

Description:



2004: Estimate based on reported data. HepB introduced in 2004 Vaccine presentation is DTP-HepB-Hib.

2005: Estimate based on reported data.

2006: Estimate based on reported data.

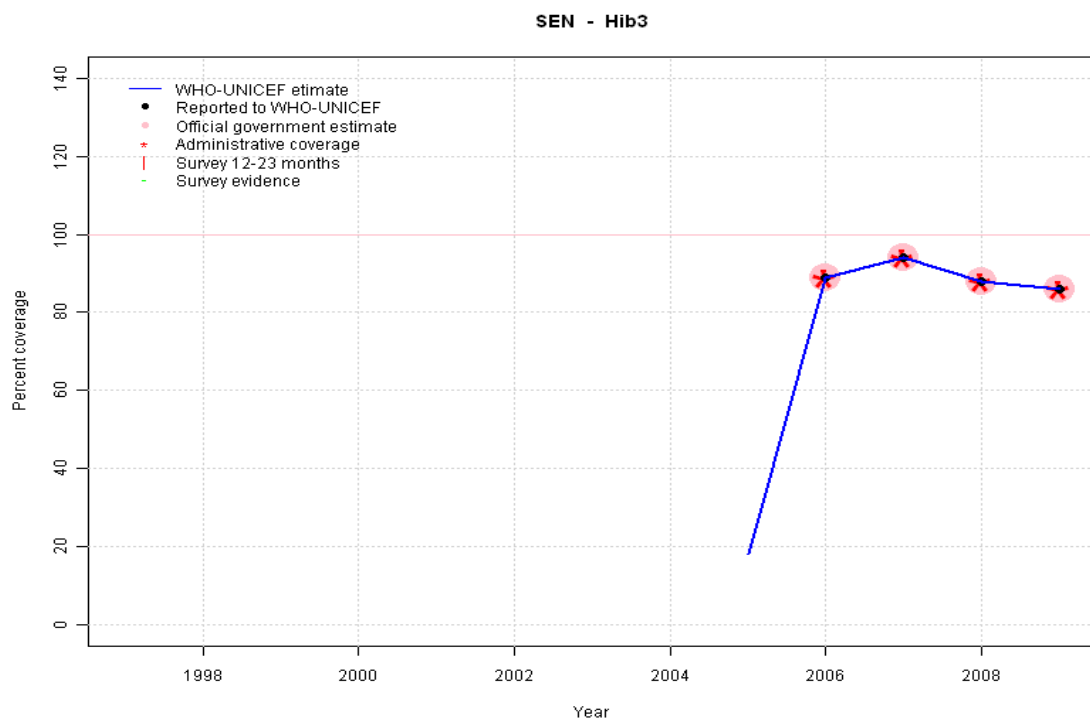
2007: Estimate based on reported data.

2008: Estimate based on reported data.

2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	54	84	89	94	88	86
Reported	NA	NA	NA	NA	NA	NA	NA	54	84	89	94	88	86
Official	NA	NA	NA	NA	NA	NA	NA	54	84	89	94	88	86
Administrative	NA	NA	NA	NA	NA	NA	NA	54	84	89	94	88	86
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Senegal - Hib3



Description:

2005: Estimate assigned by working group. DTP-HepB-Hib pentavalent vaccine introduced in July 2005. Coverage of 67 percent was reached in 25 percent of the country Hib introduced in 2005 Vaccine presentation is DTP-HepB-Hib.

2006: Estimate based on reported data.

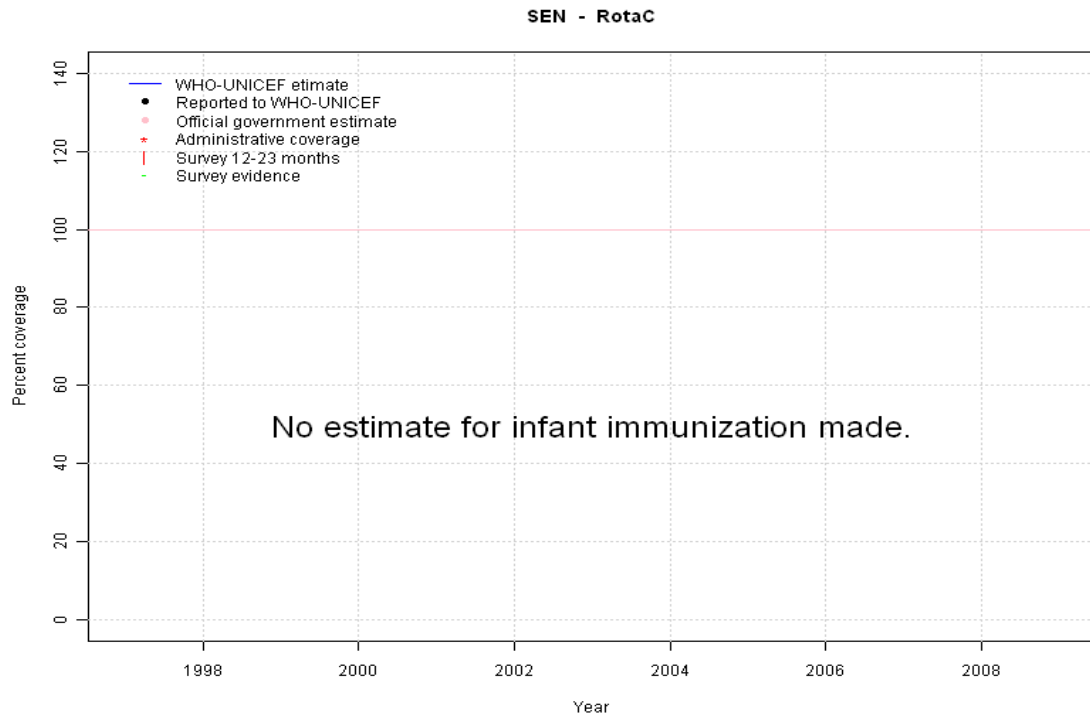
2007: Estimate based on reported data.

2008: Estimate based on reported data.

2009: Estimate based on reported data.

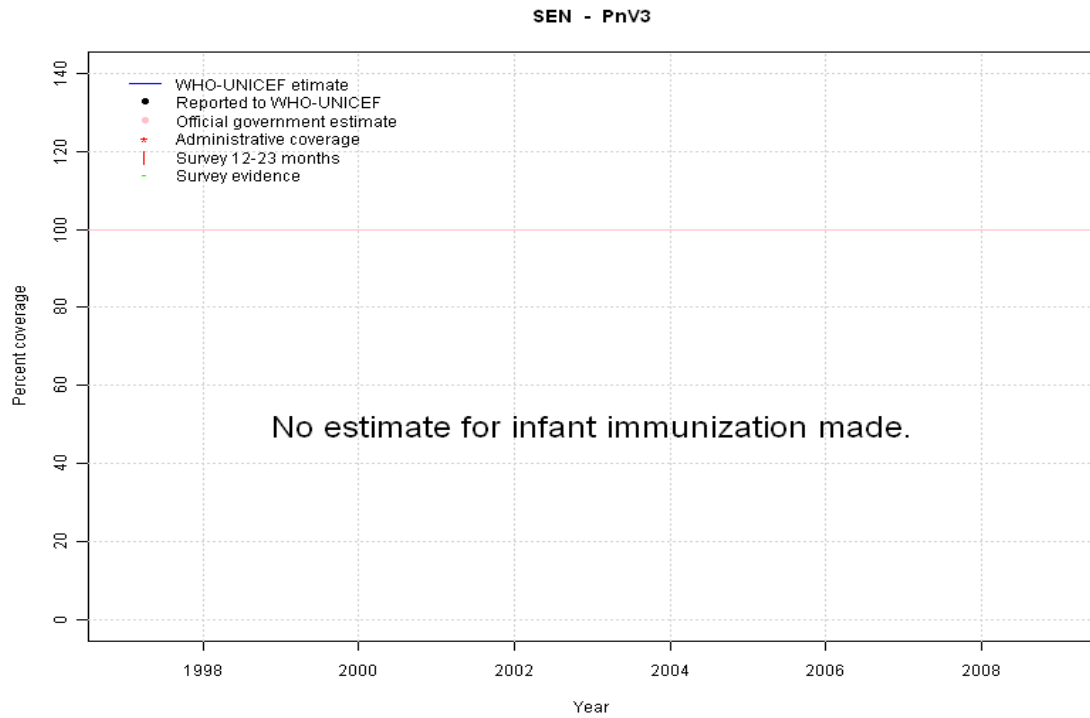
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	18	89	94	88	86
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	89	94	88	86
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	89	94	88	86
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	89	94	88	86
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Senegal - RotaC



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reported	NA	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	NA
Administrative	NA	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	NA

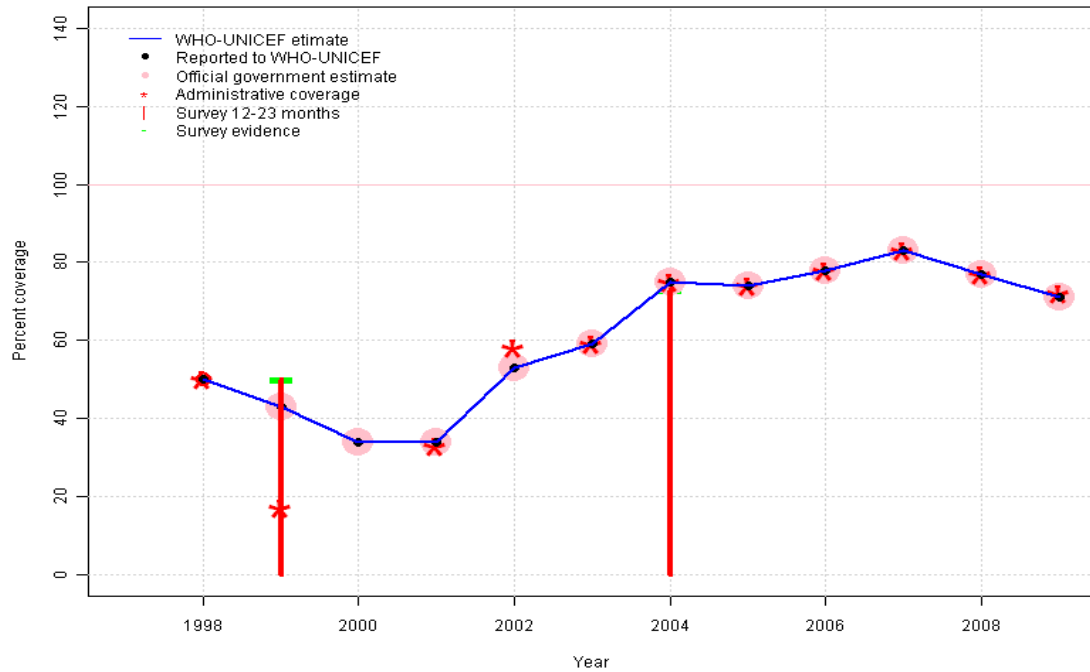
Senegal - PnV3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reported	NA	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	NA
Administrative	NA	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	NA

Senegal - YFV

SEN - YFV



Description:

- 1998: Estimate based on trend in reported data. YFV introduced in 1996 reporting started in 1998
- 1999: Estimate based on reported data (43 percent) confirmed by survey (50 percent).
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data (75 percent) confirmed by survey (73 percent).
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data.
- 2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	50	43	34	34	53	59	75	74	78	83	77	71
Reported	NA	50	43	34	34	53	59	75	74	78	83	77	71
Official	NA	NA	43	34	34	53	59	75	74	78	83	77	71
Administrative	NA	50	17	NA	33	58	59	75	74	78	83	77	72
Survey	NA	NA	50	NA	NA	NA	NA	73	NA	NA	NA	NA	NA

Senegal - survey details

2004 Enquête Démographique et de Santé, Sénégal 2005

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	91	12-23 m	2040	70
BCG	Card	66	12-23 m	2040	70
BCG	Card or History	92	12-23 m	2040	70
BCG	History	25	12-23 m	2040	70
DTP1	C or H <12 months	92	12-23 m	2040	70
DTP1	Card	68	12-23 m	2040	70
DTP1	Card or History	93	12-23 m	2040	70
DTP1	History	25	12-23 m	2040	70
DTP3	History	17	12-23 m	2040	70
DTP3	C or H <12 months	74	12-23 m	2040	70
DTP3	Card	61	12-23 m	2040	70
DTP3	Card or History	78	12-23 m	2040	70
MCV	Card or History	74	12-23 m	2040	70
MCV	Card	53	12-23 m	2040	70
MCV	C or H <12 months	61	12-23 m	2040	70
MCV	History	20	12-23 m	2040	70
Pol1	C or H <12 months	93	12-23 m	2040	70
Pol1	Card	69	12-23 m	2040	70
Pol1	Card or History	94	12-23 m	2040	70
Pol1	History	25	12-23 m	2040	70
Pol3	C or H <12 months	69	12-23 m	2040	70
Pol3	History	12	12-23 m	2040	70
Pol3	Card	61	12-23 m	2040	70
Pol3	Card or History	73	12-23 m	2040	70
YFV	History	19	12-23 m	2040	70
YFV	C or H <12 months	62	12-23 m	2040	70
YFV	Card	54	12-23 m	2040	70
YFV	Card or History	73	12-23 m	2040	70

1999 Rapport final revue externe PEV du Senegal, Jan 2000

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	88	12-23 m	2100	81
BCG	Card <12 months	87	12-23 m	2100	81
BCG	Card or History	90	12-23 m	2100	81

BCG	C or H <12 months	89	12-23 m	2100	81
DTP1	Card	71	12-23 m	2100	81
DTP1	C or H <12 months	79	12-23 m	2100	81
DTP1	Card or History	82	12-23 m	2100	81
DTP1	Card <12 months	68	12-23 m	2100	81
DTP3	C or H <12 months	52	12-23 m	2100	81
DTP3	Card	52	12-23 m	2100	81
DTP3	Card <12 months	45	12-23 m	2100	81
DTP3	Card or History	60	12-23 m	2100	81
MCV	C or H <12 months	48	12-23 m	2100	81
MCV	Card	53	12-23 m	2100	81
MCV	Card <12 months	42	12-23 m	2100	81
MCV	Card or History	60	12-23 m	2100	81
Pol1	C or H <12 months	73	12-23 m	2100	81
Pol1	Card or History	76	12-23 m	2100	81
Pol1	Card	66	12-23 m	2100	81
Pol1	Card <12 months	64	12-23 m	2100	81
Pol3	Card or History	56	12-23 m	2100	81
Pol3	C or H <12 months	49	12-23 m	2100	81
Pol3	Card	50	12-23 m	2100	81
Pol3	Card <12 months	43	12-23 m	2100	81
YFV	Card or History	50	12-23 m	2100	81
YFV	Card <12 months	34	12-23 m	2100	81
YFV	Card	43	12-23 m	2100	81

1999 Sénégal, Enquête Sénégalaise sur les Indicateurs de Santé (ESIS) 1999, 2000

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	88	12-23 m	2137	59
BCG	Card	59	12-23 m	2137	59
BCG	History	29	12-23 m	2137	59
BCG	C or H <12 months	82	12-23 m	2137	59
DTP1	C or H <12 months	69	12-23 m	2137	59
DTP1	Card	55	12-23 m	2137	59
DTP1	Card or History	73	12-23 m	2137	59
DTP1	History	18	12-23 m	2137	59
DTP3	C or H <12 months	43	12-23 m	2137	59
DTP3	Card	42	12-23 m	2137	59

Senegal - survey details

DTP3	Card or History	50	12-23 m	2137	59
DTP3	History	8	12-23 m	2137	59
MCV	Card	42	12-23 m	2137	59
MCV	Card or History	61	12-23 m	2137	59
MCV	History	20	12-23 m	2137	59
MCV	C or H <12 months	46	12-23 m	2137	59
Pol1	C or H <12 months	80	12-23 m	2137	59
Pol1	Card	57	12-23 m	2137	59

Pol1	Card or History	86	12-23 m	2137	59
Pol1	History	28	12-23 m	2137	59
Pol3	C or H <12 months	50	12-23 m	2137	59
Pol3	Card	43	12-23 m	2137	59
Pol3	Card or History	58	12-23 m	2137	59
Pol3	History	15	12-23 m	2137	59

Further information and estimates for 1980-1996 are available at:

http://www.childinfo.org/immunization_countryreports.html

http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html

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.

Year	PAB coverage estimate (%)
1997	53
1998	54
1999	58
2000	62
2001	64
2002	72
2003	77
2004	78
2005	80
2006	86
2007	85
2008	88
2009	88

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.