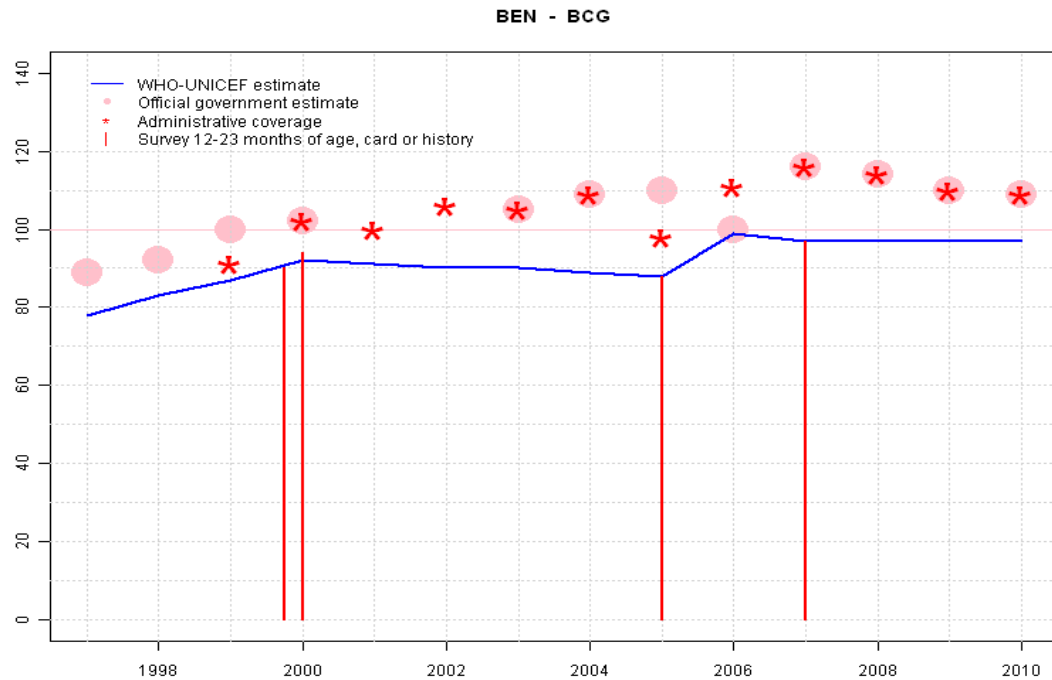


Benin - BCG



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	78	83	87	92	91	90	90	89	88	99	97	97	97	97
Official	89	92	100	102	NA	NA	105	109	110	100	116	114	110	109
Administrative	NA	NA	91	102	100	106	105	109	98	111	116	114	110	109
Survey	NA	NA	NA	*	NA	NA	NA	NA	88	NA	97	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

1999: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

2000: Estimate based on survey results to maintain consistency with other vaccines. Reported data of 102 percent greater than 100 percent.

2001: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on interpolation between 2000 and 2005. Reported data of 106 percent greater than 100 percent. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on interpolation between 2000 and 2005. Reported data of 105 percent greater than 100 percent. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on interpolation between 2000 and 2005. Reported data of 109 percent greater than 100 percent. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2005: No accepted reported data. Reported data of 100 percent estimated by interpolation between 2001 and 2006 does not support trend in reported data. 88 percent survey results Reported data of 110 percent greater than 100 percent.

2006: Reported data calibrated to 2005 and 2007 levels. Current estimate of 99 percent changed from previous revision value of 94 percent.

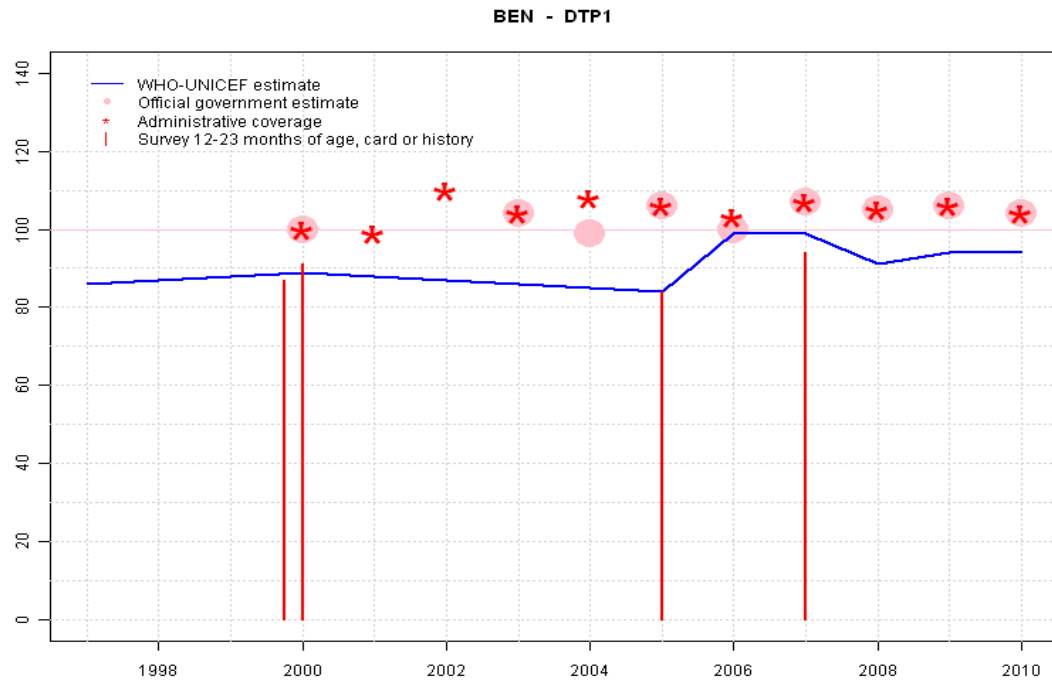
2007: Estimate based on survey results to maintain consistency with other vaccines. Reported data of 116 percent greater than 100 percent. Current estimate of 97 percent changed from previous revision value of 99 percent.

2008: Estimate based on extrapolation from 2007 value of 97 percent. Reported data of 114 percent greater than 100 percent. Current estimate of 97 percent changed from previous revision value of 99 percent.

2009: Estimate based on extrapolation from 2007 value of 97 percent. Reported data of 110 percent greater than 100 percent. Current estimate of 97 percent changed from previous revision value of 99 percent.

2010: Estimate based on extrapolation from 2007 value of 97 percent. Reported data of 109 percent greater than 100 percent.

Benin - DTP1



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	86	87	88	89	88	87	86	85	84	99	99	91	94	94
Official	NA	NA	NA	100	NA	NA	104	99	106	100	107	105	106	104
Administrative	NA	NA	NA	100	99	110	104	108	106	103	107	105	106	104
Survey	NA	NA	NA	*	NA	NA	NA	NA	84	NA	94	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

1999: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

2000: Estimate is based on survey results for all antigens.

2001: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on interpolation between 2000 and 2005. Reported data of 110 percent greater than 100 percent. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on interpolation between 2000 and 2005. Reported data of 104 percent greater than 100 percent. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2005: No accepted reported data. Reported data of 100 percent estimated by interpolation between 2004 and 2006 does not support trend in reported data. 84 percent survey results Reported data of 106 percent greater than 100 percent.

2006: Reported data calibrated to 2005 and 2007 levels. Current estimate of 99 percent changed from previous revision value of 92 percent.

2007: No accepted reported data. Reported data of 100 percent estimated by extrapolating from 2006 supports trend in reported data. 94 percent survey results Reported data of 107 percent greater than 100 percent.

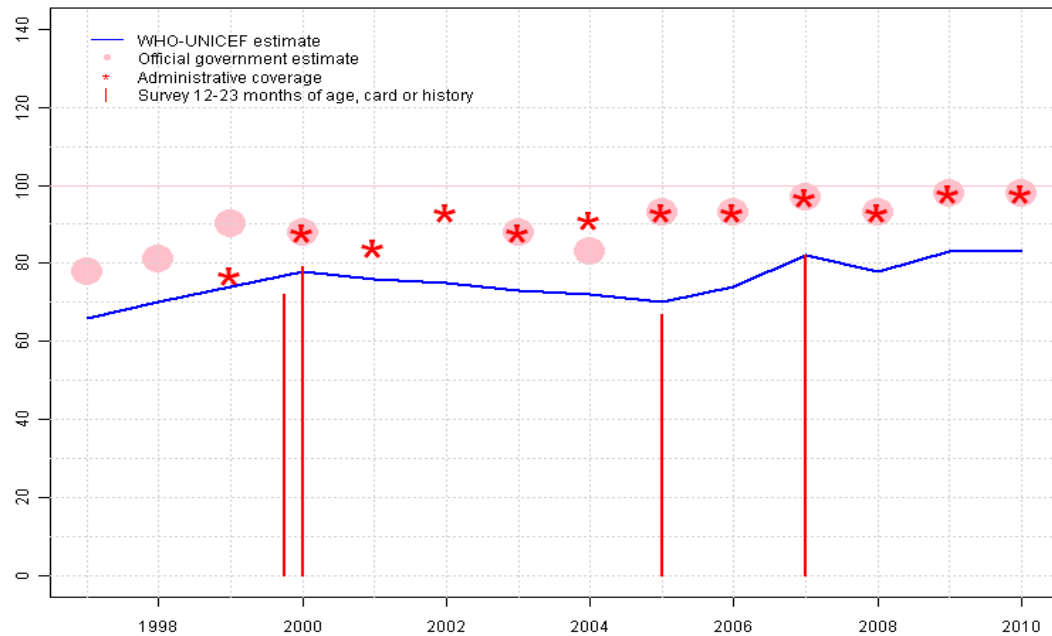
2008: No DTP1 data. Estimate based on DTP3 coverage of 78. Reported data of 105 percent greater than 100 percent. Current estimate of 91 percent changed from previous revision value of 99 percent.

2009: No DTP1 data. Estimate based on DTP3 coverage of 83. Reported data of 106 percent greater than 100 percent. Current estimate of 94 percent changed from previous revision value of 99 percent.

2010: No DTP1 data. Estimate based on DTP3 coverage of 83. Reported data of 104 percent greater than 100 percent.

Benin - DTP3

BEN - DTP3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	66	70	74	78	76	75	73	72	70	74	82	78	83	83
Official	78	81	90	88	NA	NA	88	83	93	93	97	93	98	98
Administrative	NA	NA	77	88	84	93	88	91	93	93	97	93	98	98
Survey	NA	NA	NA	*	NA	NA	NA	NA	67	NA	82	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

1999: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

2000: Estimate is based on survey results for all antigens. Survey results of 72 percent modified for recall bias to 76 percent based on 1st dose card or history coverage of 87 percent, 1st dose card only coverage of 71 percent and 3d dose card only coverage of 62 percent.

2001: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2005: Estimate based on survey results. 70 percent survey results does not support reported data of 93 percent. Survey results of 67 percent modified for recall bias to 70 percent based on 1st dose card or history coverage of 84 percent, 1st dose card only coverage of 62 percent and 3d dose card only coverage of 52 percent.

2006: Reported data calibrated to 2005 and 2007 levels.

2007: Estimate based on survey results. 82 percent survey results does not support reported data of 97 percent. Survey results of 82 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 71 percent and 3d dose card only coverage of 62 percent.

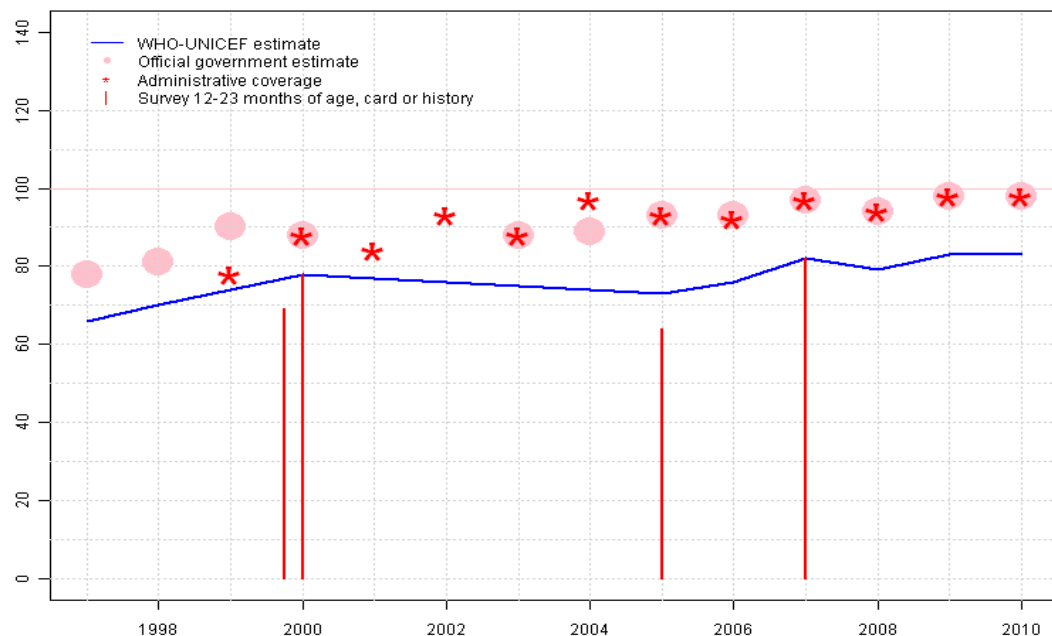
2008: Reported data 93 percent calibrated to 2007 levels.

2009: Reported data 98 percent calibrated to 2007 levels.

2010: Reported data 98 percent calibrated to 2007 levels.

Benin - Pol3

BEN - Pol3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	66	70	74	78	77	76	75	74	73	76	82	79	83	83
Official	78	81	90	88	NA	NA	88	89	93	93	97	94	98	98
Administrative	NA	NA	78	88	84	93	88	97	93	92	97	94	98	98
Survey	NA	NA	NA	*	NA	NA	NA	NA	64	NA	82	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

1999: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

2000: Estimate is based on survey results for all antigens. Survey results of 69 percent modified for recall bias to 78 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 72 percent and 3d dose card only coverage of 62 percent.

2001: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2005: Estimate based on survey results. 73 percent survey results does not support reported data of 93 percent. Survey results of 64 percent modified for recall bias to 73 percent based on 1st dose card or history coverage of 89 percent, 1st dose card only coverage of 63 percent and 3d dose card only coverage of 52 percent.

2006: Reported data calibrated to 2005 and 2007 levels.

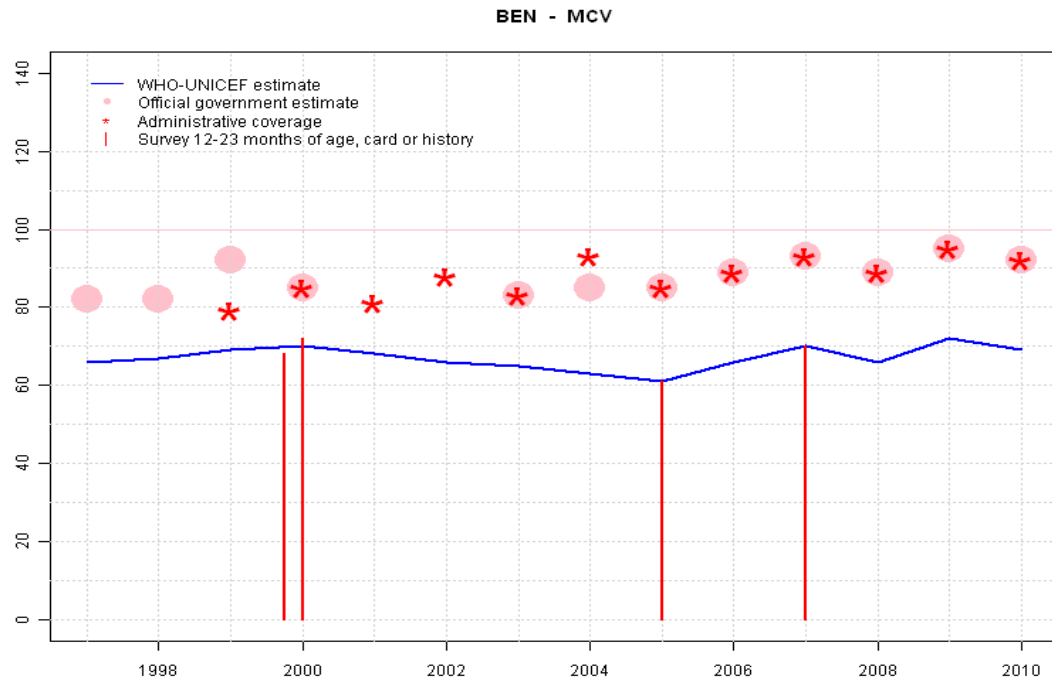
2007: Estimate based on survey results. 82 percent survey results does not support reported data of 97 percent. Survey results of 82 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 70 percent and 3d dose card only coverage of 62 percent.

2008: Reported data 94 percent calibrated to 2007 levels.

2009: Reported data 98 percent calibrated to 2007 levels.

2010: Reported data 98 percent calibrated to 2007 levels.

Benin - MCV



Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

1999: Estimate based on interpolation between 1997 and 2000. Fluctuation in reported data suggest poor quality administrative recording and reporting.

2000: Estimate is based on survey results for all antigens.

2001: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on interpolation between 2000 and 2005. Fluctuations in reported data suggest poor quality administrative recording and reporting.

2005: Estimate based on survey results. 61 percent survey results does not support reported data of 85 percent.

2006: Reported data calibrated to 2005 and 2007 levels.

2007: Estimate based on survey results. 70 percent survey results does not support reported data of 93 percent.

2008: Reported data 89 percent calibrated to 2007 levels.

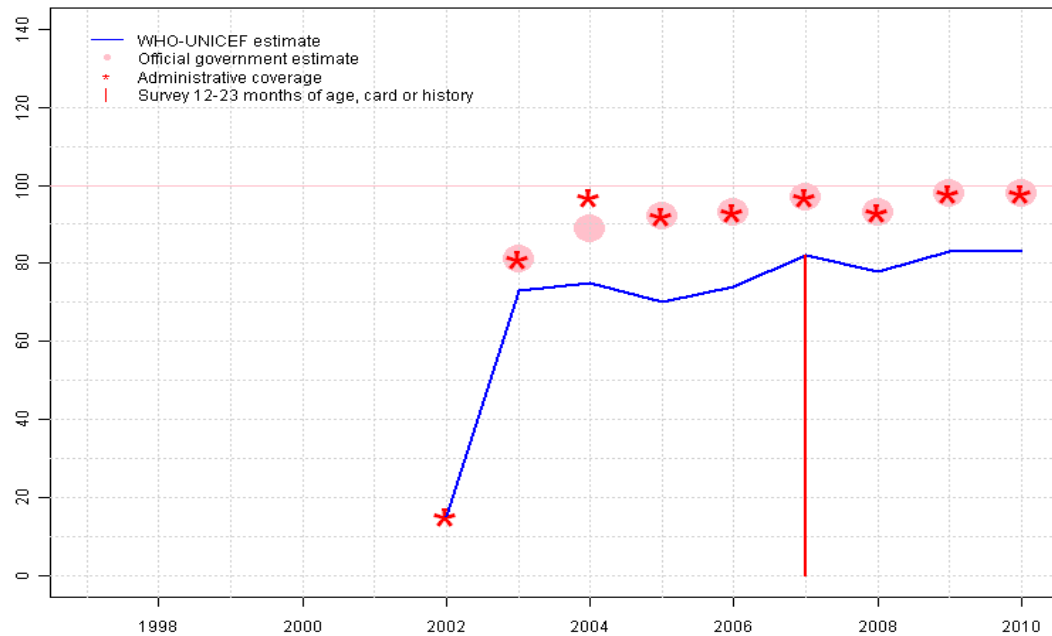
2009: Reported data 95 percent calibrated to 2007 levels.

2010: Reported data 92 percent calibrated to 2007 levels.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	66	67	69	70	68	66	65	63	61	66	70	66	72	69
Official	82	82	92	85	NA	NA	83	85	85	89	93	89	95	92
Administrative	NA	NA	79	85	81	88	83	93	85	89	93	89	95	92
Survey	NA	NA	NA	*	NA	NA	NA	NA	61	NA	70	NA	NA	NA

Benin - HepB3

BEN - HepB3



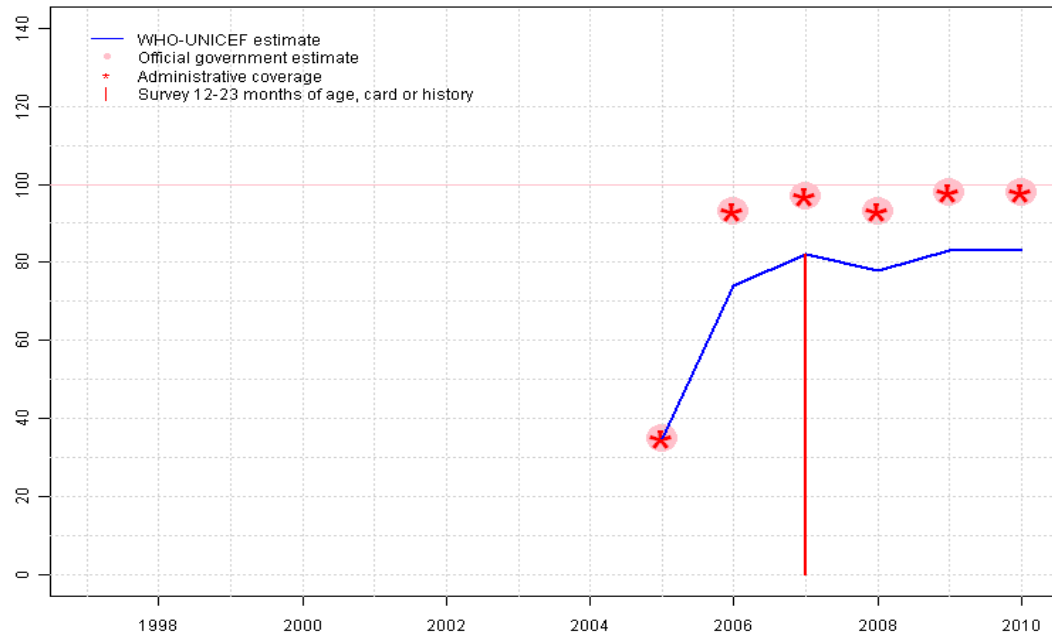
Description:

- 2002: HepB introduced in 2002 .
- 2003: Reported data calibrated to 2002 and 2005 levels.
- 2004: Reported data calibrated to 2002 and 2005 levels.
- 2005: DTP-HepatitisB-Hib pentavalent vaccine introduced in 2005. Estimate based on estimated DTP3 coverage.
- 2006: Reported data calibrated to 2005 and 2007 levels.
- 2007: Estimate based on survey results. 82 percent survey results does not support reported data of 97 percent. Survey results of 82 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 71 percent and 3d dose card only coverage of 62 percent.
- 2008: Reported data 93 percent calibrated to 2007 levels.
- 2009: Reported data 98 percent calibrated to 2007 levels.
- 2010: Reported data 98 percent calibrated to 2007 levels.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	15	73	75	70	74	82	78	83	83
Official	NA	NA	NA	NA	NA	NA	81	89	92	93	97	93	98	98
Administrative	NA	NA	NA	NA	NA	15	81	97	92	93	97	93	98	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82	NA	NA	NA

Benin - Hib3

BEN - Hib3

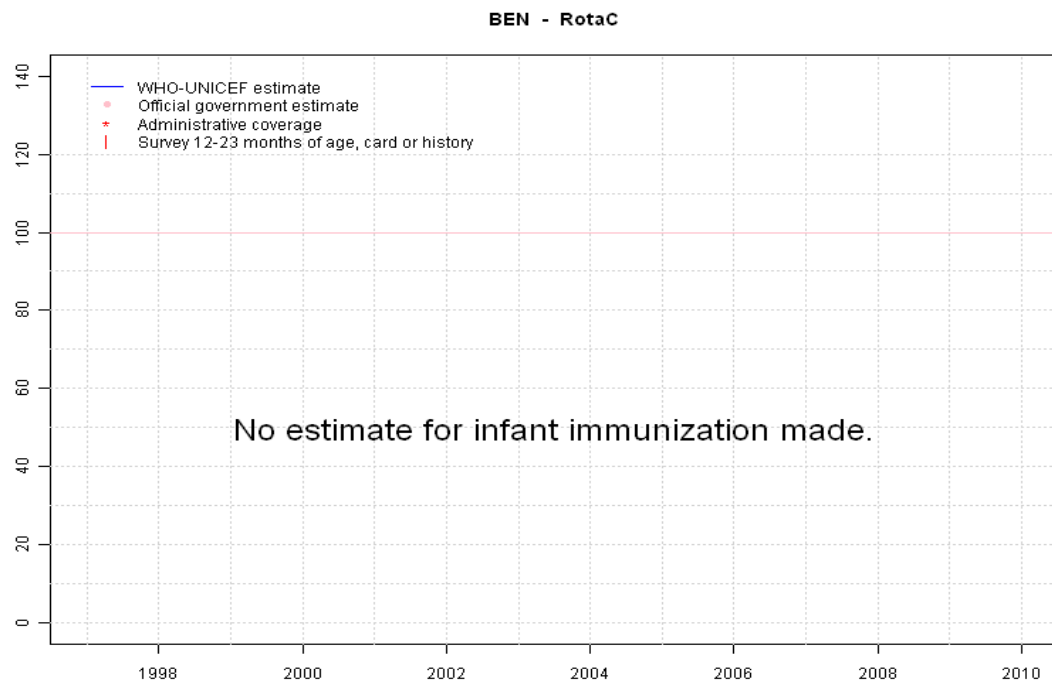


Description:

- 2005: DTP-Hepatitis-Hib vaccine introduced in 2005. Hib introduced in 2005. Vaccine presentation is DTP-HepB-Hib.
- 2006: Estimate based on estimated DTP3 coverage.
- 2007: Estimate based on survey results. 82 percent survey results does not support reported data of 97 percent. Survey results of 82 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 94 percent, 1st dose card only coverage of 71 percent and 3d dose card only coverage of 62 percent.
- 2008: Reported data calibrated to 2007 and 2009 levels.
- 2009: Estimate based on estimated DTP3 coverage.
- 2010: Reported data 98 percent calibrated to 2009 levels.

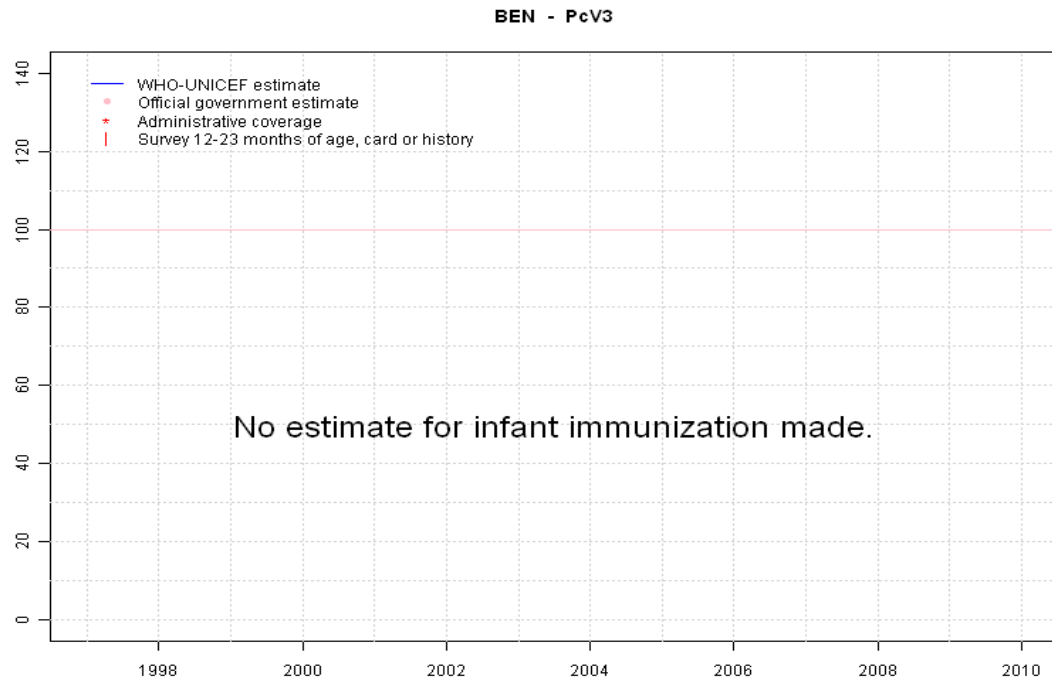
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	35	74	82	78	83	83
Official	NA	NA	NA	NA	NA	NA	NA	NA	35	93	97	93	98	98
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	35	93	97	93	98	98
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82	NA	NA	NA

Benin - RotaC



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	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	NA
Administrative	NA	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	NA

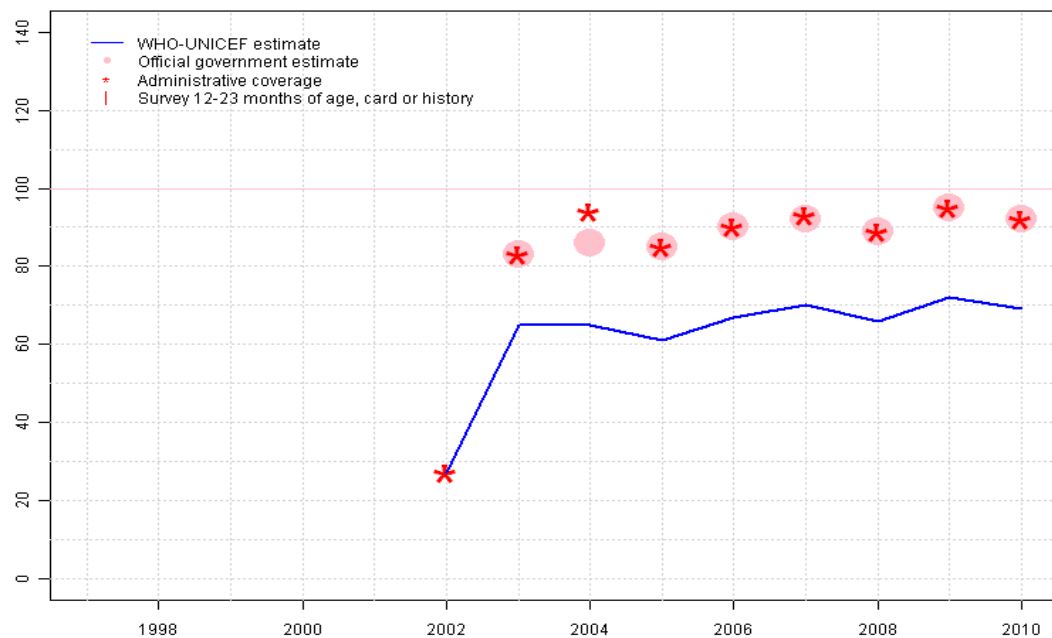
Benin - PcV3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	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	NA
Administrative	NA	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	NA

Benin - YFV

BEN - YFV



Description:

- 2002: Yellow fever vaccine recommended as routine infant vaccine. YFV introduced in 2002
- 2003: YFV estimate follows the MCV estimate levels.
- 2004: Reported data calibrated to 2003 and 2005 levels. Current estimate of 65 percent changed from previous revision value of 63 percent.
- 2005: YFV estimate follows the MCV estimate levels.
- 2006: Reported data calibrated to 2005 and 2007 levels. Current estimate of 67 percent changed from previous revision value of 66 percent.
- 2007: YFV estimate follows the MCV estimate levels.
- 2008: YFV estimate follows the MCV estimate levels.
- 2009: Reported data 95 percent calibrated to 2008 levels.
- 2010: Reported data 92 percent calibrated to 2008 levels.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	27	65	65	61	67	70	66	72	69
Official	NA	NA	NA	NA	NA	NA	83	86	85	90	92	89	95	92
Administrative	NA	NA	NA	NA	NA	27	83	94	85	90	93	89	95	92
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Benin - survey details

2007 Revue externe 2008 du Programme Elargi de Vaccination

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	94	12-23 m	7105	77
BCG	Card or History	97	12-23 m	7105	77
DTP1	Card	71	12-23 m	7105	77
DTP1	Card or History	94	12-23 m	7105	77
DTP3	Card	62	12-23 m	7105	77
DTP3	Card or History	82	12-23 m	7105	77
HepB1	Card	71	12-23 m	7105	77
HepB1	Card or History	94	12-23 m	7105	77
HepB3	Card	62	12-23 m	7105	77
HepB3	Card or History	82	12-23 m	7105	77
Hib1	Card	71	12-23 m	7105	77
Hib1	Card or History	94	12-23 m	7105	77
Hib3	Card	62	12-23 m	7105	77
Hib3	Card or History	82	12-23 m	7105	77
MCV	Card	53	12-23 m	7105	77
MCV	Card or History	70	12-23 m	7105	77
Pol1	Card or History	93	12-23 m	7105	77
Pol1	Card	70	12-23 m	7105	77
Pol3	Card	62	12-23 m	7105	77
Pol3	Card or History	82	12-23 m	7105	77

2005 Enquête Démographique et de Santé au Bénin de 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	88	12-23 m	3005	66
BCG	C or H <12 months	88	12-23 m	3005	66
BCG	History	23	12-23 m	3005	66
BCG	Card	65	12-23 m	3005	66
DTP1	C or H <12 months	83	12-23 m	3005	66
DTP1	History	22	12-23 m	3005	66
DTP1	Card or History	84	12-23 m	3005	66
DTP1	Card	62	12-23 m	3005	66
DTP3	History	15	12-23 m	3005	66
DTP3	Card or History	67	12-23 m	3005	66
DTP3	Card	52	12-23 m	3005	66

DTP3	C or H <12 months	64	12-23 m	3005	66
MCV	Card	45	12-23 m	3005	66
MCV	Card or History	61	12-23 m	3005	66
MCV	C or H <12 months	51	12-23 m	3005	66
MCV	History	16	12-23 m	3005	66
Pol1	C or H <12 months	88	12-23 m	3005	66
Pol1	Card	63	12-23 m	3005	66
Pol1	Card or History	89	12-23 m	3005	66
Pol1	History	25	12-23 m	3005	66
Pol3	Card or History	64	12-23 m	3005	66
Pol3	C or H <12 months	62	12-23 m	3005	66
Pol3	Card	52	12-23 m	3005	66
Pol3	History	12	12-23 m	3005	66

2000 Benin, Revue Externe du Programme Elargi de Vaccination, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	94	12-23 m	2699	85
DTP1	Card or History	91	12-23 m	2699	85
DTP3	Card or History	79	12-23 m	2699	85
MCV	Card or History	72	12-23 m	2699	85
Pol1	Card or History	92	12-23 m	2699	85
Pol3	Card or History	78	12-23 m	2699	85

2000 Enquête Démographique et de Santé au Bénin 2001, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	89	12-23 m	932	73
BCG	Card	72	12-23 m	932	73
BCG	Card or History	90	12-23 m	932	73
BCG	History	18	12-23 m	932	73
DTP1	History	16	12-23 m	932	73
DTP1	C or H <12 months	86	12-23 m	932	73
DTP1	Card	71	12-23 m	932	73
DTP1	Card or History	87	12-23 m	932	73
DTP3	Card	62	12-23 m	932	73
DTP3	Card or History	72	12-23 m	932	73

Benin - survey details

DTP3	History	10	12-23 m	932	73
DTP3	C or H <12 months	68	12-23 m	932	73
MCV	History	10	12-23 m	932	73
MCV	C or H <12 months	56	12-23 m	932	73
MCV	Card or History	68	12-23 m	932	73
MCV	Card	58	12-23 m	932	73
Pol1	C or H <12 months	89	12-23 m	932	73
Pol1	Card	72	12-23 m	932	73

Pol1	Card or History	90	12-23 m	932	73
Pol1	History	18	12-23 m	932	73
Pol3	C or H <12 months	66	12-23 m	932	73
Pol3	Card	62	12-23 m	932	73
Pol3	History	8	12-23 m	932	73
Pol3	Card or History	69	12-23 m	932	73

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

Benin

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	82
1998	79
1999	89
2000	87
2001	81
2002	85
2003	84
2004	93
2005	95
2006	95
2007	93
2008	92
2009	92
2010	92

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.