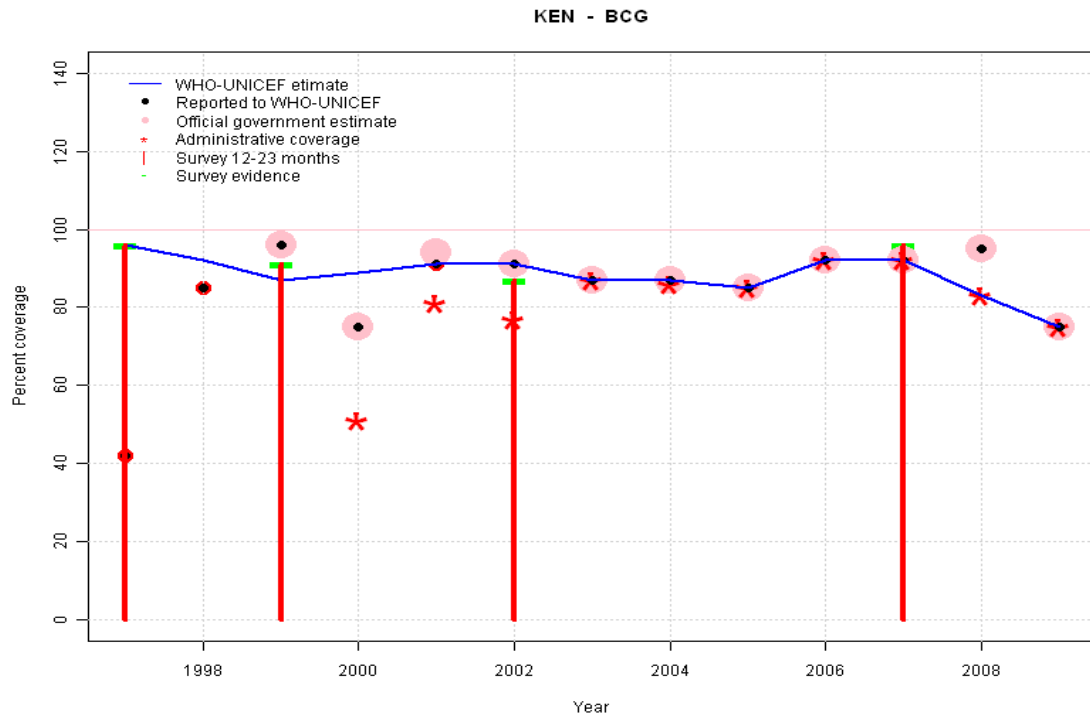


Kenya - BCG



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	96	92	87	89	91	91	87	87	85	92	92	83	75
Reported	42	85	96	75	91	91	87	87	85	92	92	95	75
Official	NA	NA	96	75	94	91	87	87	85	92	92	95	75
Administrative	NA	NA	NA	51	81	77	87	86	85	92	92	83	75
Survey	96	NA	91	NA	NA	87	NA	NA	NA	NA	96	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Estimate based on interpolated value between reported data. Survey (91 percent) confirms trend in reported data. 1999 reported data (96 percent) inconsistent with data from other years.

2000: Estimate based on trend in reported data. Missing or ignored reported value estimated by interpolation between reported values of 85 percent in 1998 and 91 percent in 2001. 2000 reported data (75 percent) inconsistent with data from other years.

2001: Estimate based on reported data.

2002: Estimate based on reported data (91 percent) confirmed by survey (87 percent).

2003: Estimate based on reported data.

2004: Estimate based on reported data.

2005: Estimate based on reported data.

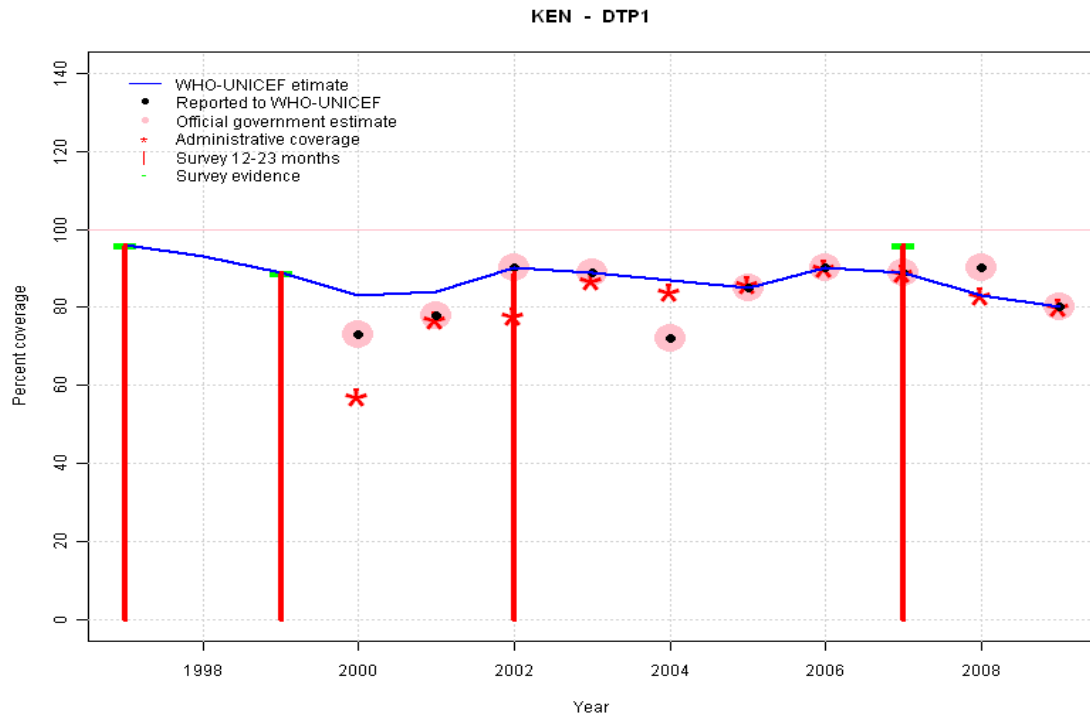
2006: Estimate based on reported data.

2007: Estimate based on reported data (92 percent) confirmed by survey (96 percent).

2008: Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved. Drop in coverage likely due to vaccine shortage (24 days)

2009: Estimate follows reported data. 2009 reported data (75 percent) inconsistent with data from other years.

Kenya - DTP1



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	96	93	89	83	84	90	89	87	85	90	89	83	80
Reported	NA	NA	NA	73	78	90	89	72	85	90	89	90	80
Official	NA	NA	NA	73	78	90	89	72	85	90	89	90	80
Administrative	NA	NA	NA	57	77	78	87	84	86	90	89	83	80
Survey	96	NA	89	NA	NA	89	NA	NA	NA	NA	96	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Estimate based on survey results. Reported data (73 percent) not consistent with survey results (89 percent).

2000: Reported data (73 percent) calibrated to 1999 and 2002 levels.

2001: Reported data (78 percent) calibrated to 1999 and 2002 levels.

2002: Estimate based on reported data (90 percent) confirmed by survey (89 percent).

2003: Estimate based on reported data.

2004: Estimate based on trend in reported data. Missing or ignored reported value estimated by interpolation between reported values of 89 percent in 2003 and 85 percent in 2005. 2004 reported data (72 percent) inconsistent with data from other years.

2005: Estimate based on reported data.

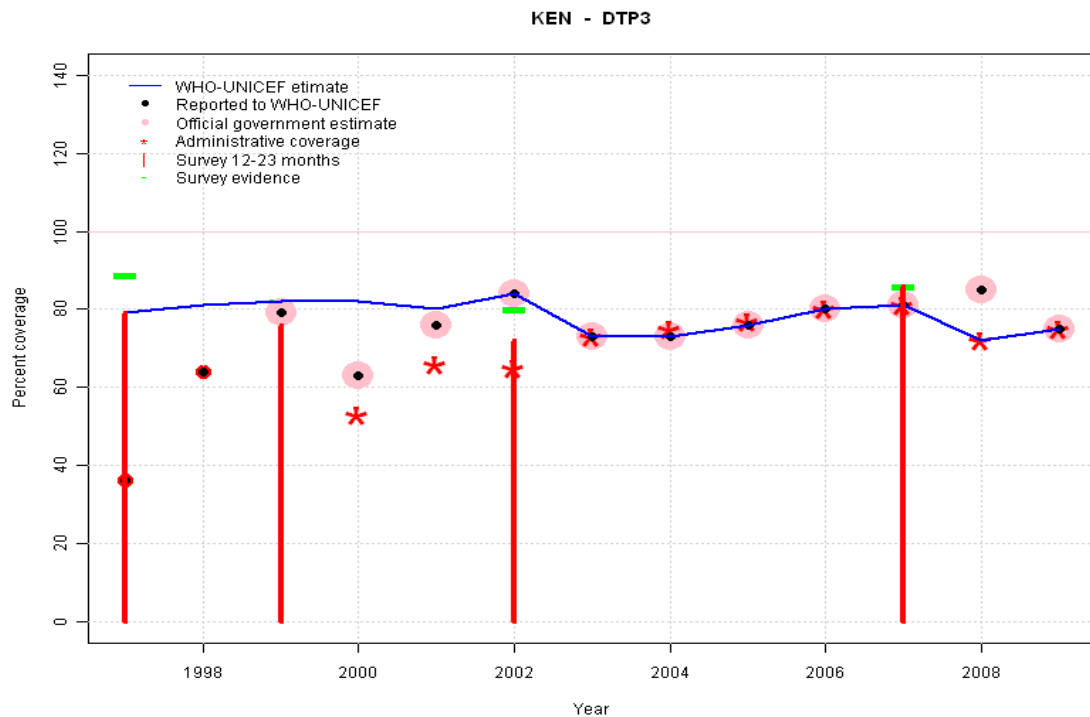
2006: Estimate based on reported data.

2007: Estimate based on reported data (89 percent) confirmed by survey (96 percent).

2008: Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved. Drop in coverage likely due to vaccine shortage (25 days)

2009: Estimate follows reported data.

Kenya - DTP3

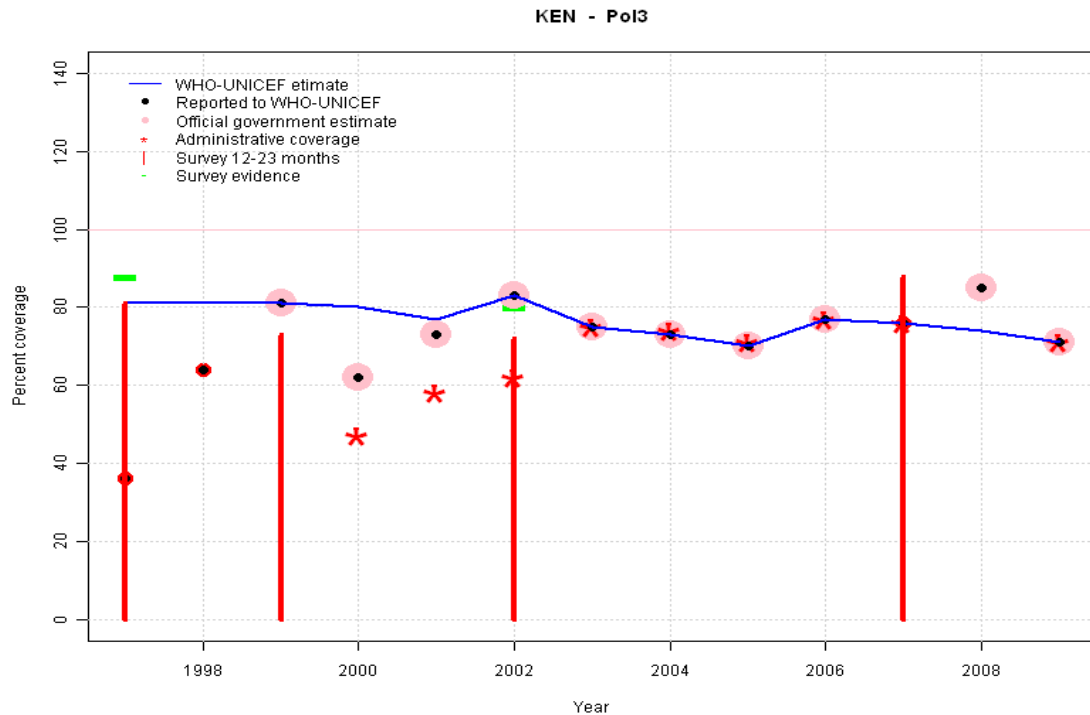


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	79	81	82	82	80	84	73	73	76	80	81	72	75
Reported	36	64	79	63	76	84	73	73	76	80	81	85	75
Official	NA	NA	79	63	76	84	73	73	76	80	81	85	75
Administrative	NA	NA	NA	53	66	65	73	75	77	80	81	72	75
Survey	89	NA	82	NA	NA	80	NA	NA	NA	NA	86	NA	NA

Description:

- 1997: Legacy estimate. Survey results (79 percent) adjusted for recall bias to 89 percent based on first dose card or history coverage (96 percent) and documented drop-out between first (55 percent) and third (51 percent) doses.
- 1998: Estimate based on working group decision to interpolated between 1997 and 1999. Estimates based on interpolation between survey results. Fluctuation and nationally reported data suggests poor recording and reporting.
- 1999: Estimate based on survey results. Reported data (68 percent) not consistent with survey results (82 percent). Survey results (76 percent) adjusted for recall bias to 82 percent based on first dose card or history coverage (89 percent) and documented drop-out between first (63 percent) and third (58 percent) doses. 1999 reported data (79 percent) inconsistent with data from other years.
- 2000: Reported data (72 percent) calibrated to 1999 and 2002 levels. Missing or ignored reported value estimated by interpolation between reported values of 64 percent in 1998 and 76 percent in 2001. 2000 reported data (63 percent) inconsistent with data from other years.
- 2001: Reported data (76 percent) calibrated to 1999 and 2002 levels.
- 2002: Estimate based on reported data (84 percent) confirmed by survey (80 percent). Survey results (72 percent) adjusted for recall bias to 80 percent based on first dose card or history coverage (89 percent) and documented drop-out between first (59 percent) and third (53 percent) doses.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data (81 percent) confirmed by survey (86 percent).
- 2008: Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved. Drop in coverage likely due to vaccine shortage (25 days)
- 2009: Estimate follows reported data.

Kenya - Pol3

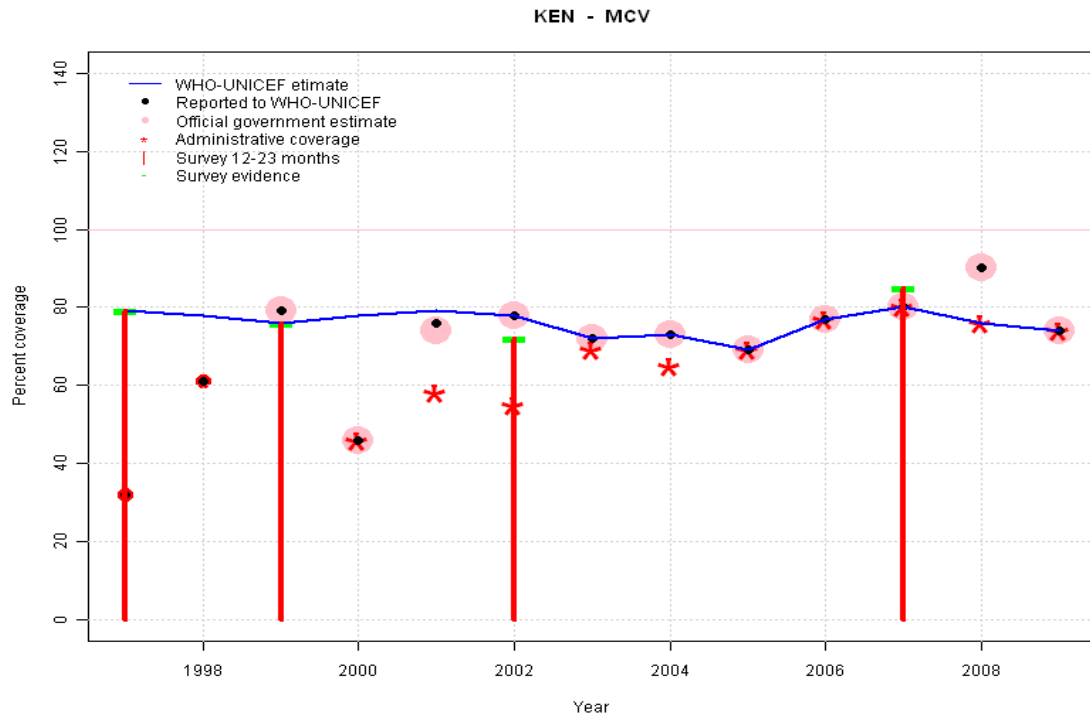


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	81	81	81	80	77	83	75	73	70	77	76	74	71
Reported	36	64	81	62	73	83	75	73	70	77	76	85	71
Official	NA	NA	81	62	73	83	75	73	70	77	NA	85	71
Administrative	NA	NA	NA	47	58	62	75	74	71	77	76	NA	71
Survey	88	NA	81	NA	NA	80	NA	NA	NA	NA	NA	NA	NA

Description:

- 1997: Legacy estimate. Survey results (81 percent) adjusted for recall bias to 88 percent based on first dose card or history coverage (95 percent) and documented drop-out between first (55 percent) and third (51 percent) doses.
- 1998: Estimate based on working group decision to interpolated between 1997 and 1999. Estimates based on interpolation between survey results. Fluctuation and nationally reported data suggests poor recording and reporting.
- 1999: Estimate based on survey results. Reported data (67 percent) not consistent with survey results (81 percent). Survey results (73 percent) adjusted for recall bias to 81 percent based on first dose card or history coverage (87 percent) and documented drop-out between first (62 percent) and third (58 percent) doses. 1999 reported data (81 percent) inconsistent with data from other years.
- 2000: Reported data (70 percent) calibrated to 1999 and 2002 levels. Missing or ignored reported value estimated by interpolation between reported values of 64 percent in 1998 and 73 percent in 2001. 2000 reported data (62 percent) inconsistent with data from other years.
- 2001: Reported data (73 percent) calibrated to 1999 and 2002 levels.
- 2002: Estimate based on reported data (83 percent) confirmed by survey (80 percent). Survey results (72 percent) adjusted for recall bias to 80 percent based on first dose card or history coverage (91 percent) and documented drop-out between first (59 percent) and third (52 percent) doses.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data. Survey results of 88 percent ignored by working group. Survey results likely include campaign doses.
- 2008: Estimate interpolated between 2007 and 2009 estimates. 2008 reported data (85 percent) ignored by working group. Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved.
- 2009: Estimate follows reported data. 2009 reported data (71 percent) inconsistent with data from other years.

Kenya - MCV



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	79	78	76	78	79	78	72	73	69	77	80	76	74
Reported	32	61	79	46	76	78	72	73	69	77	80	90	74
Official	NA	NA	79	46	74	78	72	73	69	77	80	90	74
Administrative	NA	NA	NA	46	58	55	69	65	69	77	80	76	74
Survey	79	NA	76	NA	NA	72	NA	NA	NA	NA	85	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Estimate follows survey result. 1999 reported data (79 percent) inconsistent with data from other years.

2000: Reported data (71 percent) calibrated to 1999 and 2002 levels. Missing or ignored reported value estimated by interpolation between reported values of 61 percent in 1998 and 76 percent in 2001. 2000 reported data (46 percent) inconsistent with data from other years.

2001: Reported data (76 percent) calibrated to 1999 and 2002 levels.

2002: Estimate based on reported data (78 percent) confirmed by survey (72 percent).

2003: Estimate based on reported data.

2004: Estimate based on reported data.

2005: Estimate based on reported data.

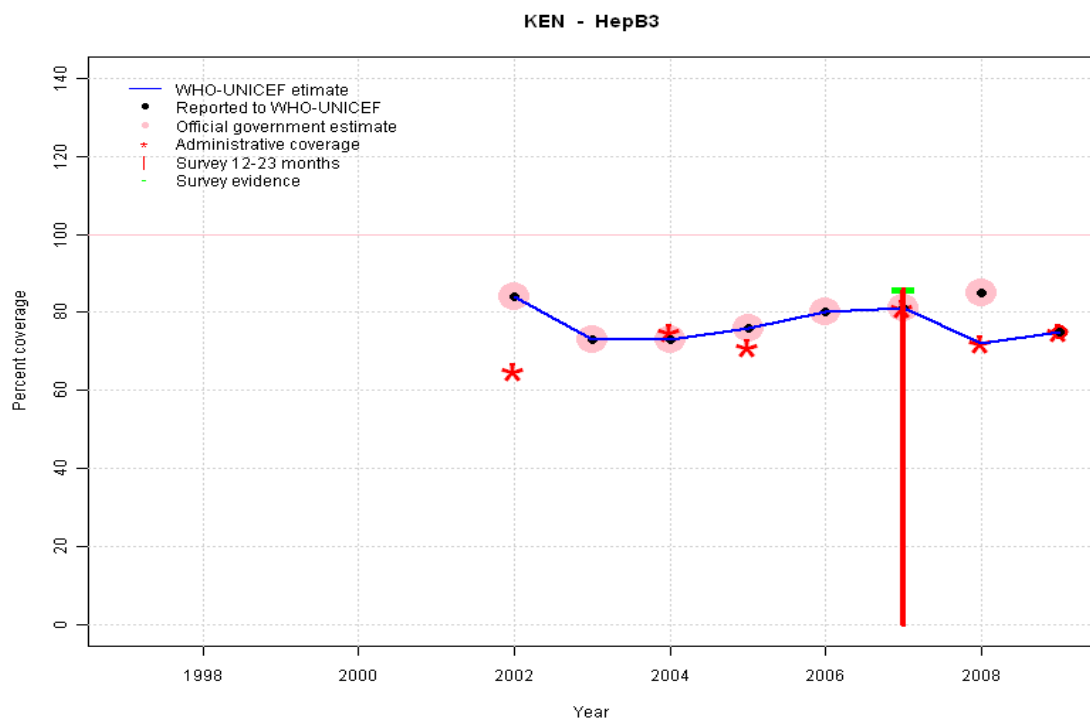
2006: Estimate based on reported data.

2007: Estimate based on reported data (80 percent) confirmed by survey (85 percent).

2008: Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved.

2009: Estimate follows reported data. 2009 reported data (74 percent) inconsistent with data from other years.

Kenya - HepB3

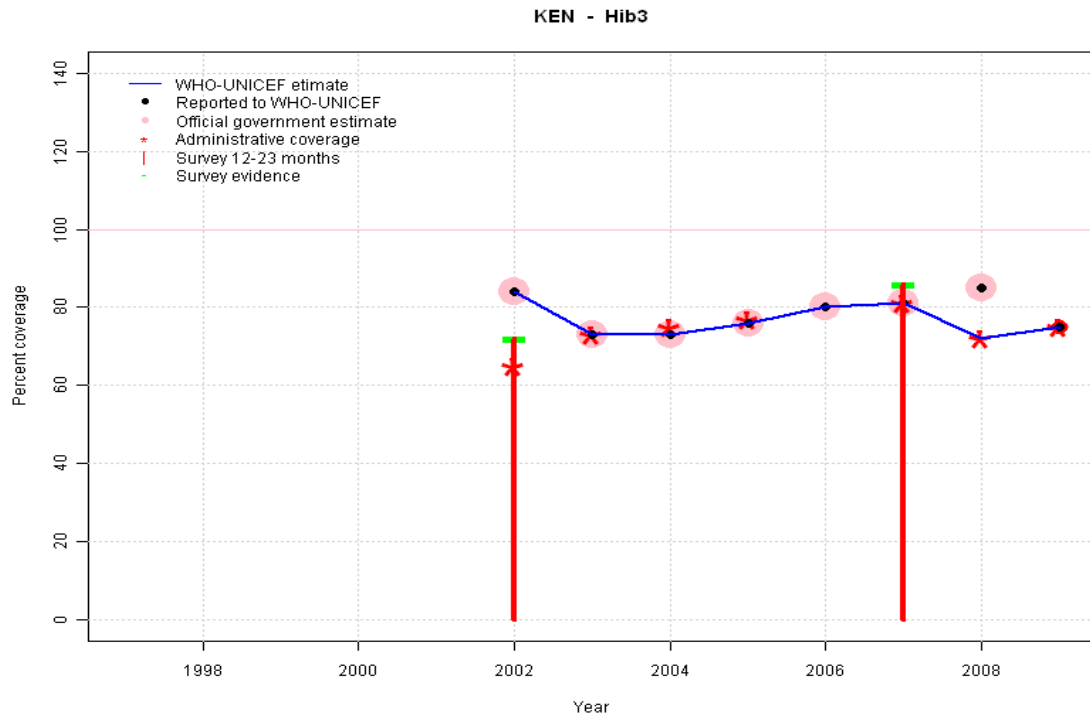


Description:

- 2002: Estimate based on trend in reported data. HepB introduced in 2001. Reporting started in 2002. Vaccine presentation is DTP-HepB-Hib.
- 2003: Estimate based on trend in reported data.
- 2004: Estimate based on trend in reported data.
- 2005: Estimate based on trend in reported data.
- 2006: Estimate based on trend in reported data.
- 2007: Estimate based on reported data (81 percent) confirmed by survey (86 percent).
- 2008: Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved. Drop in coverage likely due to vaccine shortage (25 days)
- 2009: Estimate follows reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	84	73	73	76	80	81	72	75
Reported	NA	NA	NA	NA	NA	84	73	73	76	80	81	85	75
Official	NA	NA	NA	NA	NA	84	73	73	76	80	81	85	NA
Administrative	NA	NA	NA	NA	NA	65	NA	75	71	NA	81	72	75
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	86	NA	NA

Kenya - Hib3

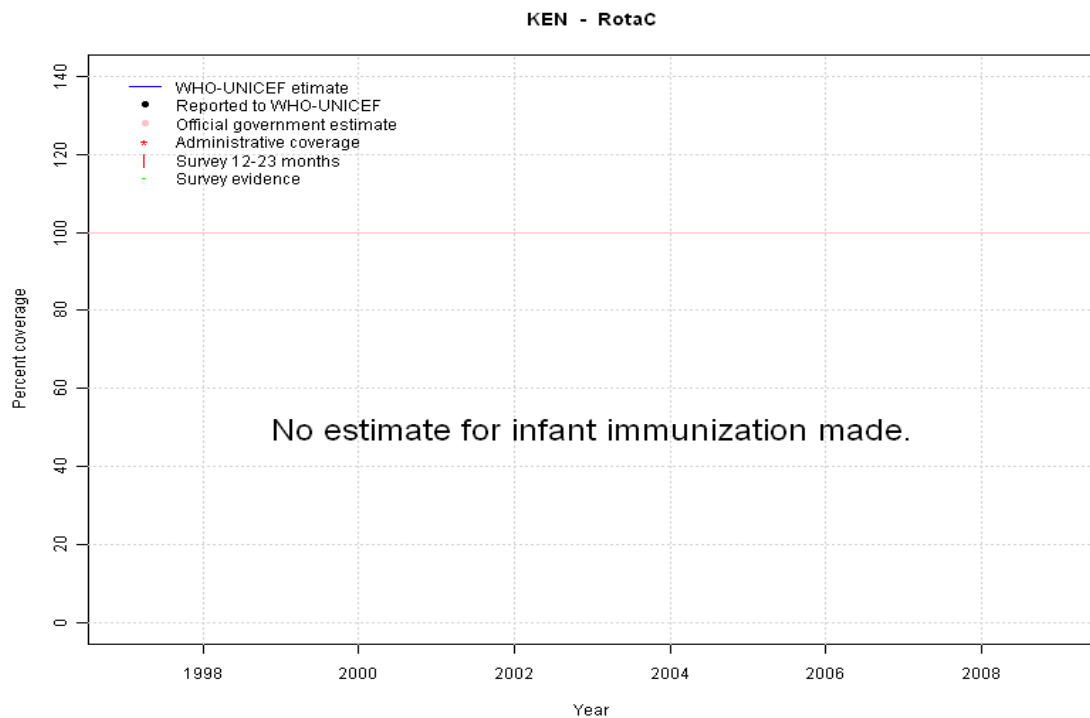


Description:

- 2002: Survey results not consistent with comparable survey data. Results not adjusted for recall bias. Hib introduced in 2001. Reporting started in 2002. Vaccine presentation is DTP-HepB-Hib.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data (81 percent) confirmed by survey (86 percent).
- 2008: Ministry of Health reports targets set in their 2005-2010 national comprehensive multi-year plan for immunization as their estimate of coverage levels achieved. Drop in coverage likely due to vaccine shortage (25 days)
- 2009: Estimate follows reported data.

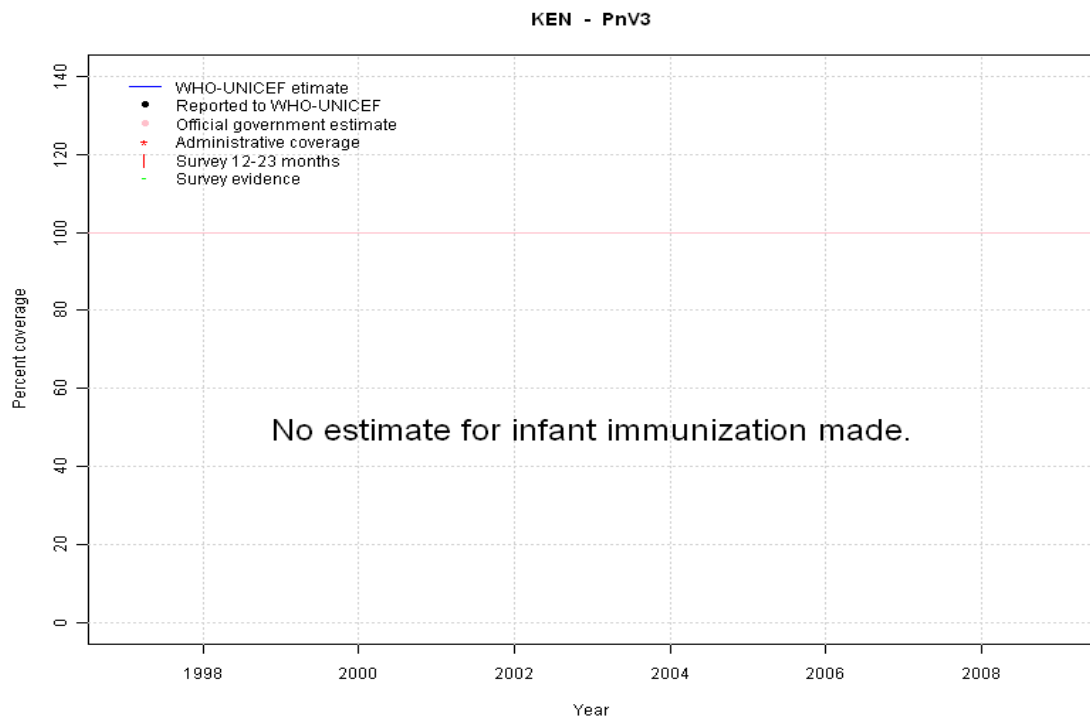
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	84	73	73	76	80	81	72	75
Reported	NA	NA	NA	NA	NA	84	73	73	76	80	81	85	75
Official	NA	NA	NA	NA	NA	84	73	73	76	80	81	85	NA
Administrative	NA	NA	NA	NA	NA	65	73	75	77	NA	81	72	75
Survey	NA	NA	NA	NA	NA	72	NA	NA	NA	NA	86	NA	NA

Kenya - RotaC



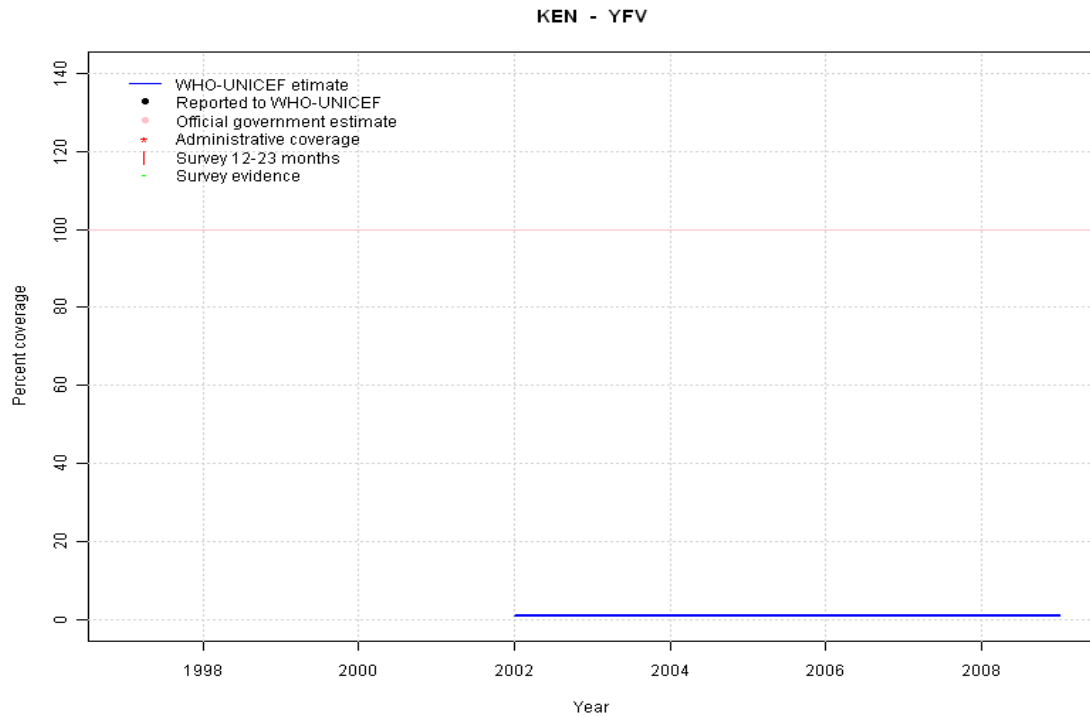
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA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

Kenya - 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

Kenya - YFV



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	1	1	1	1	1	1	1	1
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

Description:

- 2002: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2003: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2004: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2005: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2006: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2007: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2008: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.
- 2009: Estimate assigned by working group. Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort.

Kenya - survey details

2007 Kenya Demographic and Health Survey 2009-09, Preliminary Report

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	96	12-23 m	1096	70
DTP1	Card or History	96	12-23 m	1096	70
DTP3	Card or History	86	12-23 m	1096	70
HepB1	Card or History	96	12-23 m	1096	70
HepB3	Card or History	86	12-23 m	1096	70
Hib1	Card or History	96	12-23 m	1096	70
Hib3	Card or History	86	12-23 m	1096	70
MCV	Card or History	85	12-23 m	1096	70
Pol1	Card or History	96	12-23 m	1096	70
Pol3	Card or History	88	12-23 m	1096	70

2002 National Demographic and Health Survey 2003

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	57	12-23 m	1131	60
BCG	Card or history	87	12-23 m	1131	60
BCG	History	30	12-23 m	1131	60
BCG	C or H <12 months	87	12-23 m	1131	60
DTP1	C or H <12 months	88	12-23 m	1131	60
DTP1	Card	59	12-23 m	1131	60
DTP1	Card or history	89	12-23 m	1131	60
DTP1	History	30	12-23 m	1131	60
DTP3	History	20	12-23 m	1131	60
DTP3	Card or history	72	12-23 m	1131	60
DTP3	C or H <12 months	70	12-23 m	1131	60
DTP3	Card	53	12-23 m	1131	60
Hib3	History	20	12-23 m	1131	60
Hib3	Card or history	72	12-23 m	1131	60
Hib3	Card	53	12-23 m	1131	60
Hib3	C or H <12 months	70	12-23 m	1131	60
MCV	Card or history	72	12-23 m	1131	60
MCV	C or H <12 months	63	12-23 m	1131	60
MCV	History	26	12-23 m	1131	60
MCV	Card	46	12-23 m	1131	60

Pol1	Card	59	12-23 m	1131	60
Pol1	Card or history	91	12-23 m	1131	60
Pol1	History	32	12-23 m	1131	60
Pol1	C or H <12 months	90	12-23 m	1131	60
Pol3	Card or history	72	12-23 m	1131	60
Pol3	C or H <12 months	70	12-23 m	1131	60
Pol3	Card	52	12-23 m	1131	60
Pol3	History	20	12-23 m	1131	60

1999 Kenya Multiple Indicator Cluster Survey 2000, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	History	28	12-23 m	1544	0
BCG	Card or History	91	12-23 m	1544	0
BCG	C or H <12 months	90	12-23 m	1544	0
BCG	Card	63	12-23 m	1544	0
DTP1	History	26	12-23 m	1544	0
DTP1	C or H <12 months	89	12-23 m	1544	0
DTP1	Card	63	12-23 m	1544	0
DTP1	Card or History	89	12-23 m	1544	0
DTP3	History	18	12-23 m	1544	0
DTP3	Card or History	76	12-23 m	1544	0
DTP3	Card	58	12-23 m	1544	0
DTP3	C or H <12 months	75	12-23 m	1544	0
MCV	History	25	12-23 m	1544	0
MCV	Card or History	76	12-23 m	1544	0
MCV	Card	51	12-23 m	1544	0
MCV	C or H <12 months	72	12-23 m	1544	0
Pol1	History	24	12-23 m	1544	0
Pol1	Card or History	87	12-23 m	1544	0
Pol1	Card	62	12-23 m	1544	0
Pol1	C or H <12 months	86	12-23 m	1544	0
Pol3	C or H <12 months	72	12-23 m	1544	0
Pol3	Card	58	12-23 m	1544	0
Pol3	Card or History	73	12-23 m	1544	0
Pol3	History	15	12-23 m	1544	0

1997 Kenya Demographic and Health Survey 1998,1999

Kenya - survey details

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen	MCV	History		12-23 m	1097	55
BCG	History	41	12-23 m	1097	55	MCV	Card	46	12-23 m	1097	55
BCG	Card	55	12-23 m	1097	55	MCV	Card <12 months	71	12-23 m	1097	55
BCG	Card <12 months	94	12-23 m	1097	55	MCV	Card or History	79	12-23 m	1097	55
BCG	Card or History	96	12-23 m	1097	55	Pol1	Card <12 months	94	12-23 m	1097	55
DTP1	History	41	12-23 m	1097	55	Pol1	Card or History	95	12-23 m	1097	55
DTP1	Card or History	96	12-23 m	1097	55	Pol1	History	40	12-23 m	1097	55
DTP1	Card	55	12-23 m	1097	55	Pol1	Card	55	12-23 m	1097	55
DTP1	Card <12 months	94	12-23 m	1097	55	Pol3	Card	51	12-23 m	1097	55
DTP3	History	28	12-23 m	1097	55	Pol3	Card <12 months	78	12-23 m	1097	55
DTP3	Card	51	12-23 m	1097	55	Pol3	Card or History	81	12-23 m	1097	55
DTP3	Card <12 months	76	12-23 m	1097	55	Pol3	History	30	12-23 m	1097	55
DTP3	Card or History	79	12-23 m	1097	55						

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

Kenya

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	61
1998	74
1999	68
2000	68
2001	69
2002	72
2003	73
2004	73
2005	73
2006	74
2007	74
2008	78
2009	78

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.