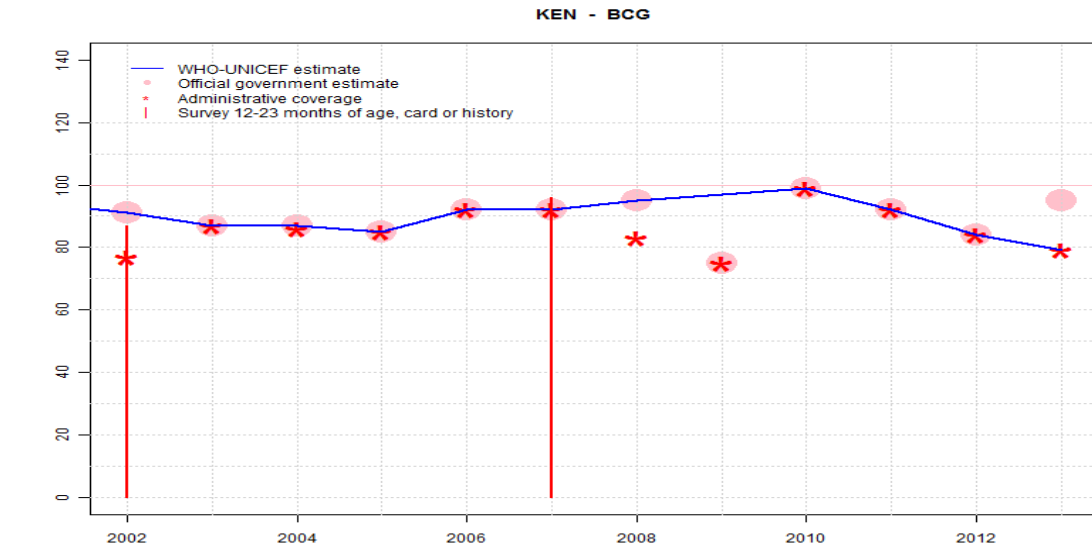


# Kenya - BCG



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	91	87	87	85	92	92	95	97	99	92	84	79
Estimate GoC	•	•••	•••	••	•••	•••	•••	•	•	••	••	••
Official	91	87	87	85	92	92	95	75	99	92	84	95
Administrative	77	87	86	85	92	92	83	75	99	92	84	79
Survey	87	NA	NA	NA	NA	96	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

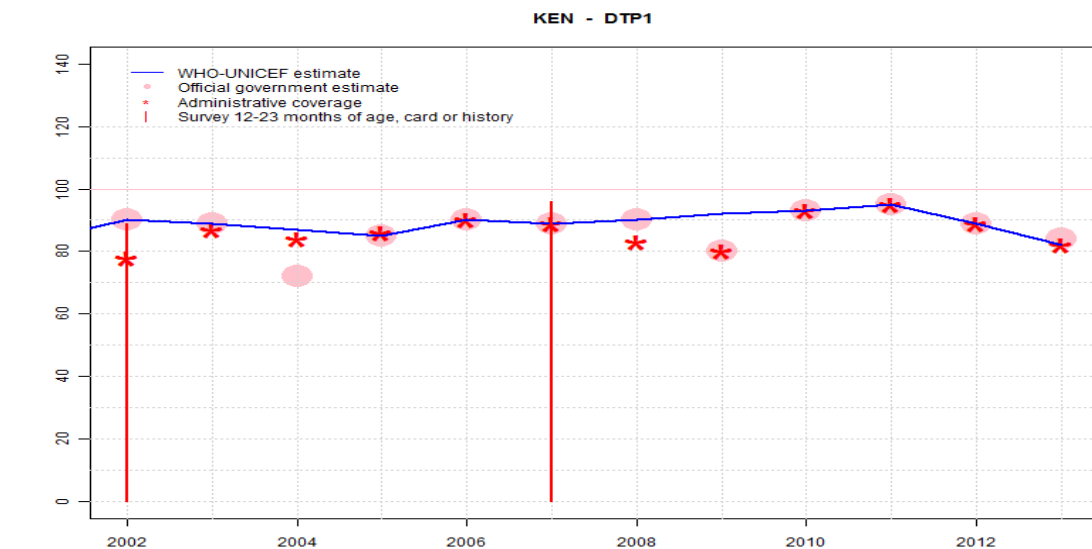
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. GoC=R+ D+
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. Drop in coverage likely due to vaccine shortage (24 days) GoC=R+ S+ D+
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population. Reported data excluded. Decline in reported coverage from 95 percent to 75 percent with increase to 99 percent. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. Revised denominator. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. Two-month vaccine shortage reported. GoC=R+ D+
- 2013: Estimate based on reported administrative data. Reported year to year change in number of births between 2012 and 2013 is significantly higher than in previous years. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=R+ D+

# Kenya - DTP1



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	90	89	87	85	90	89	90	92	93	95	89	82
Estimate GoC	•	•••	••	••	•••	•••	•••	••	••	••	••	••
Official	90	89	72	85	90	89	90	80	93	95	89	84
Administrative	78	87	84	86	90	89	83	80	93	95	89	82
Survey	89	NA	NA	NA	NA	96	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

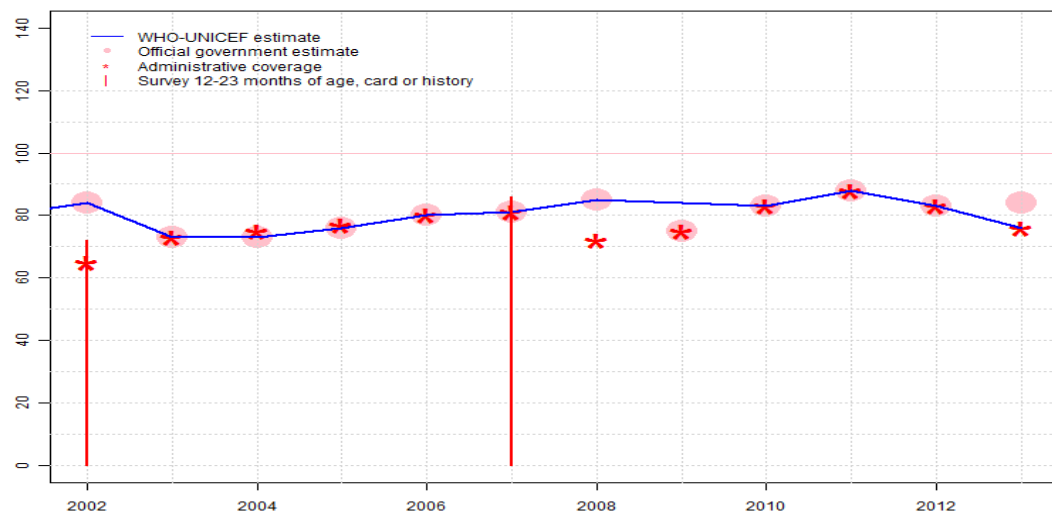
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on coverage reported by national government supported by survey. Survey evidence of 89 percent based on 1 survey(s). Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on interpolation between coverage reported by national government. Reported data excluded. Decline in reported coverage from 89 percent to 72 percent with increase to 85 percent. GoC=S+ D+
- 2005: Estimate based on coverage reported by national government. GoC=R+ D+
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. Drop in coverage likely due to vaccine shortage (25 days) GoC=R+ S+ D+
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population GoC=S+ D+
- 2010: Estimate based on coverage reported by national government. Revised denominator. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. One-month vaccine shortage reported. GoC=R+ D+
- 2013: Estimate based on reported administrative data. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=R+ D+

# Kenya - DTP3

KEN - DTP3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	84	73	73	76	80	81	85	84	83	88	83	76
Estimate GoC	•	•••	•••	••	••	•••	•	••	••	••	••	••
Official	84	73	73	76	80	81	85	75	83	88	83	84
Administrative	65	73	75	77	80	81	72	75	83	88	83	76
Survey	72	NA	NA	NA	NA	86	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

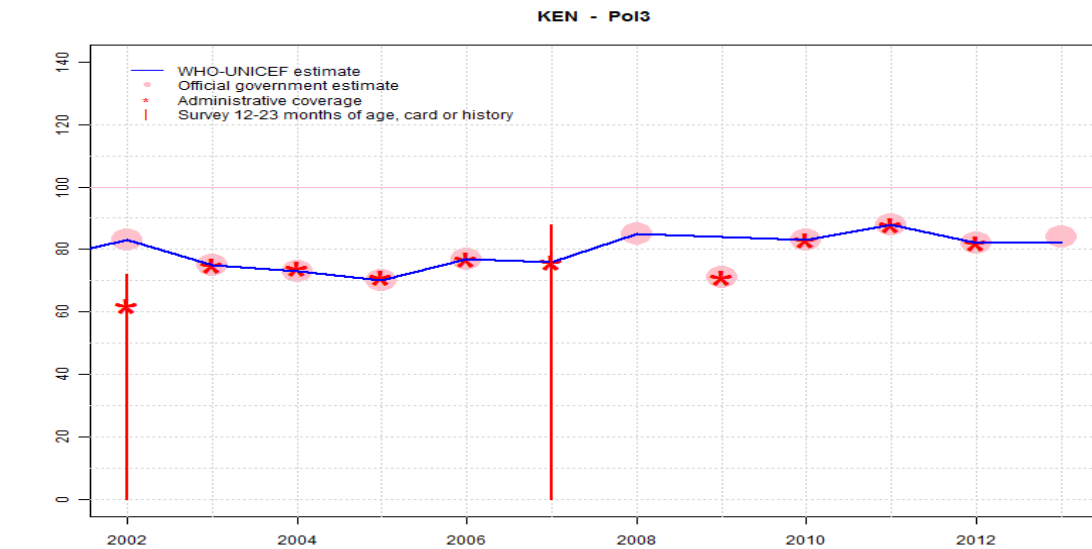
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on coverage reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). National Demographic and Health Survey 2003 card or history results of 72 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 89 percent, 1st dose card only coverage of 59 percent and 3d dose card only coverage of 53 percent. Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. GoC=R+ D+
- 2006: Estimate based on coverage reported by national government. GoC=R+ D+
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). Kenya Demographic and Health Survey 2008-09 card or history results of 86 percent modified for recall bias to 91 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 70 percent and 3d dose card only coverage of 66 percent. GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. Drop in coverage likely due to vaccine shortage (25 days) Estimate challenged by: D-
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population GoC=S+ D+
- 2010: Estimate based on coverage reported by national government. Revised denominator. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. One-month vaccine shortage reported. GoC=R+ D+
- 2013: Estimate based on reported administrative data. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=R+ D+

# Kenya - Pol3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	83	75	73	70	77	76	85	84	83	88	82	82
Estimate GoC	•	•••	•••	•	•	•	•	•	••	••	••	•
Official	83	75	73	70	77	NA	85	71	83	88	82	84
Administrative	62	75	74	71	77	76	NA	71	83	88	82	NA
Survey	72	NA	NA	NA	NA	88	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

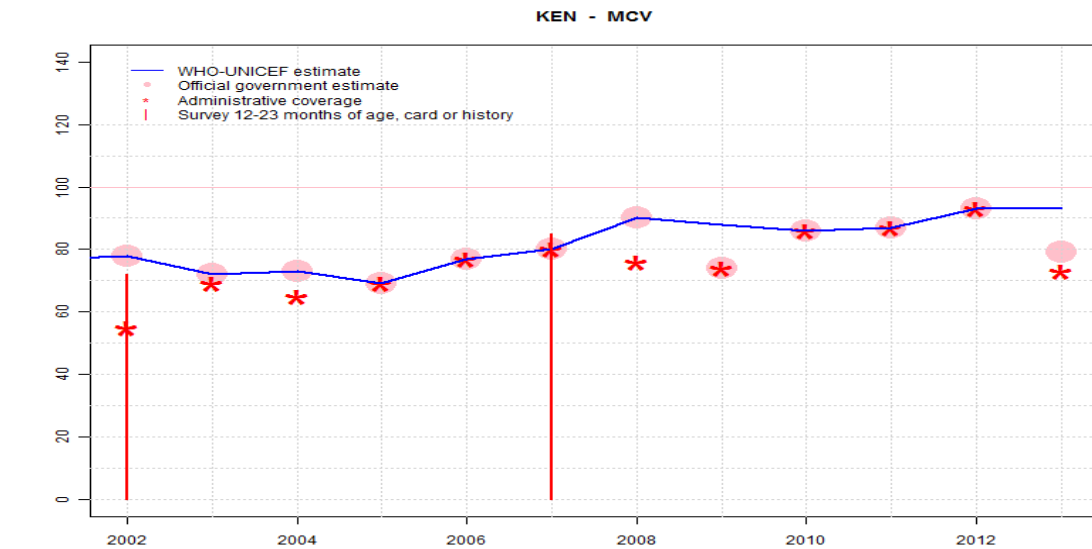
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on coverage reported by national government supported by survey. Survey evidence of 80 percent based on 1 survey(s). National Demographic and Health Survey 2003 card or history results of 72 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 91 percent, 1st dose card only coverage of 59 percent and 3d dose card only coverage of 52 percent. Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on reported data. Kenya Demographic and Health Survey 2008-09 results ignored by working group. Survey results likely include campaign doses. Kenya Demographic and Health Survey 2008-09 card or history results of 88 percent modified for recall bias to 92 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 70 percent and 3d dose card only coverage of 67 percent. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population. Reported data excluded. Decline in reported coverage from 85 percent to 71 percent with increase to 83 percent. Estimate challenged by: S-
- 2010: Estimate based on coverage reported by national government. Revised denominator. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=No accepted empirical data

# Kenya - MCV



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	78	72	73	69	77	80	90	88	86	87	93	93
Estimate GoC	•	•••	•••	••	•••	•••	•	••	••	••	••	•
Official	78	72	73	69	77	80	90	74	86	87	93	79
Administrative	55	69	65	69	77	80	76	74	86	87	93	73
Survey	72	NA	NA	NA	NA	85	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

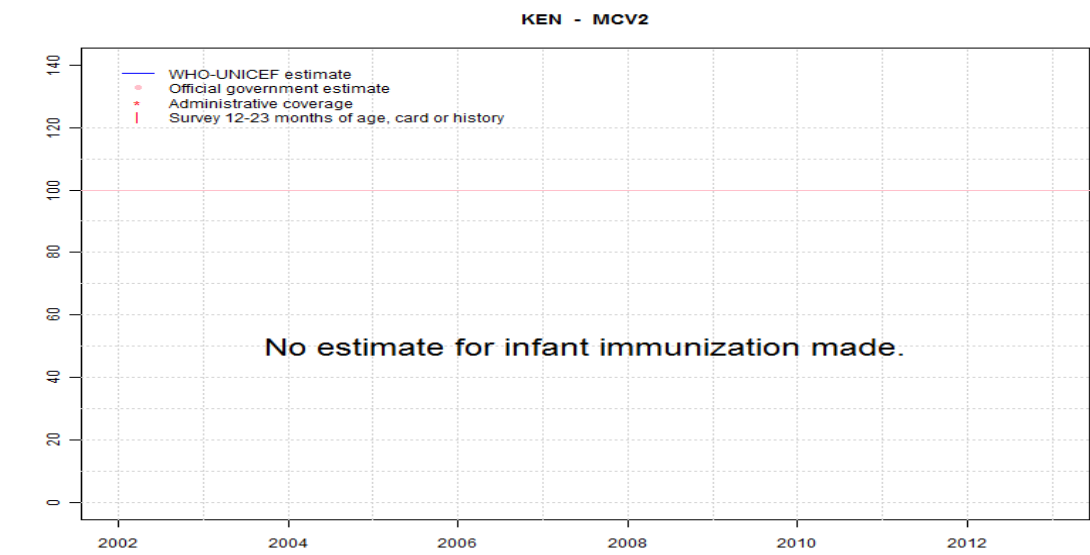
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on coverage reported by national government supported by survey. Survey evidence of 72 percent based on 1 survey(s). Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. GoC=R+ D+
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 85 percent based on 1 survey(s). GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population. Reported data excluded. Decline in reported coverage from 90 percent to 74 percent with increase to 86 percent. GoC=S+ D+
- 2010: Estimate based on coverage reported by national government. Revised denominator. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. Change in reported coverage from 93 level to 73 percent. Decline in of number of children vaccinated with measles is unexplained. Insufficient explanation of methods and data sources used to derive government official estimates. Estimate challenged by: D-

# Kenya - MCV2



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	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
Administrative	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

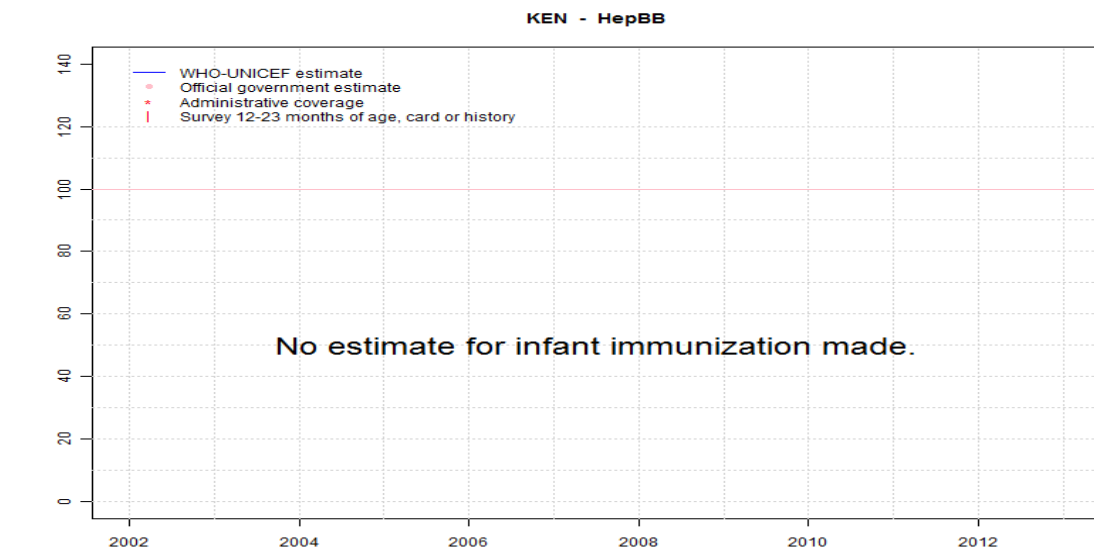
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.



# Kenya - HepBB



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	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
Administrative	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

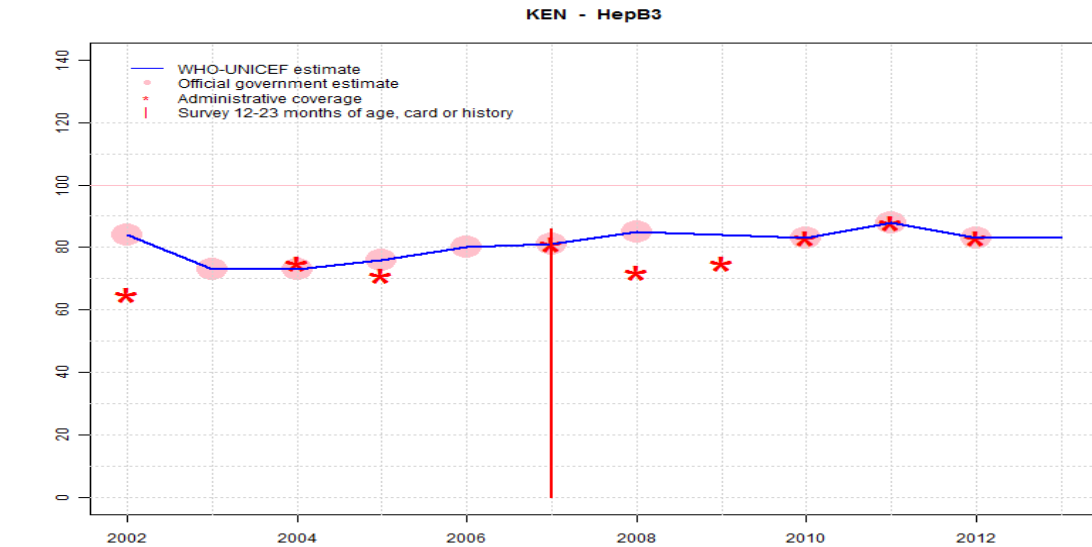
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.



# Kenya - HepB3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	84	73	73	76	80	81	85	84	83	88	83	83
Estimate GoC	•	••	••	••	••	•••	•	••	••	••	••	•
Official	84	73	73	76	80	81	85	NA	83	88	83	NA
Administrative	65	NA	75	71	NA	81	72	75	83	88	83	NA
Survey	NA	NA	NA	NA	NA	86	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

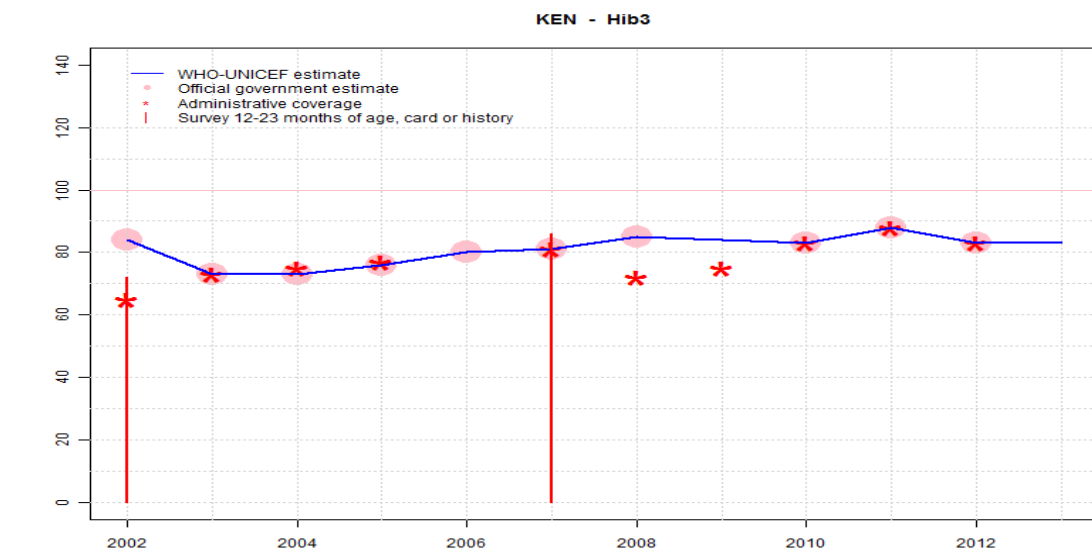
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Estimate based on reported data. HepB vaccine introduced in 2001. Reporting started in 2002. Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: D-
- 2003: Estimate based on reported data. GoC=R+ D+
- 2004: Estimate based on reported data. GoC=R+ D+
- 2005: Estimate based on reported data. GoC=R+ D+
- 2006: Estimate based on reported data. GoC=R+ D+
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). Kenya Demographic and Health Survey 2008-09 card or history results of 86 percent modified for recall bias to 91 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 70 percent and 3d dose card only coverage of 66 percent. GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. Drop in coverage likely due to vaccine shortage (25 days) Estimate challenged by: D-
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population GoC=S+ D+
- 2010: Estimate based on coverage reported by national government. Revised denominator. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. One-month vaccine shortage reported. GoC=R+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=No accepted empirical data

# Kenya - Hib3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	84	73	73	76	80	81	85	84	83	88	83	83
Estimate GoC	•	•••	•••	••	••	•••	•	••	••	••	••	•
Official	84	73	73	76	80	81	85	NA	83	88	83	NA
Administrative	65	73	75	77	NA	81	72	75	83	88	83	NA
Survey	72	NA	NA	NA	NA	86	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

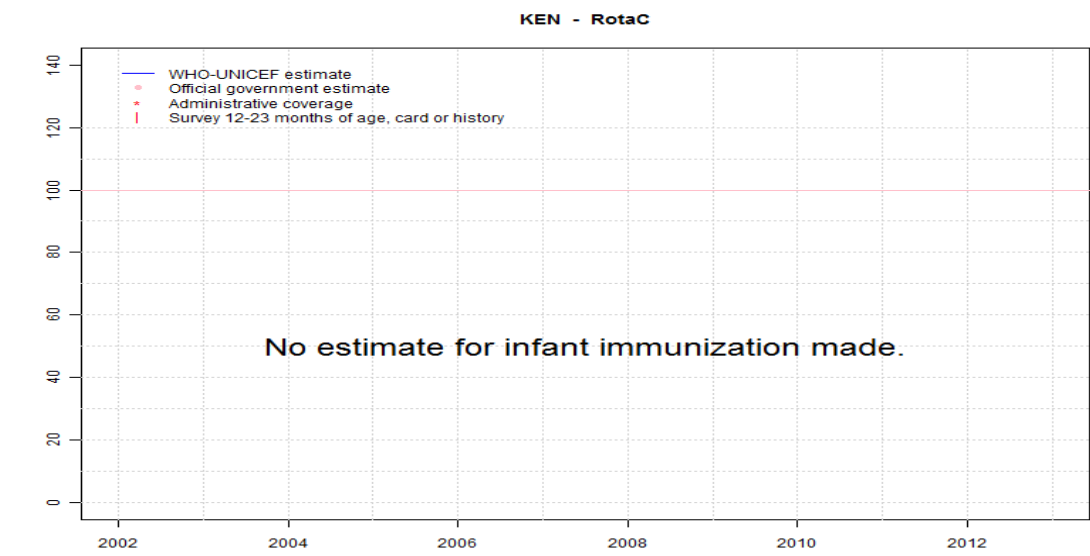
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Survey results not consistent with comparable survey data. Results not adjusted for recall bias. Hib vaccine introduced in 2001. Reporting started in 2002. Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2004: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2005: Estimate based on coverage reported by national government. GoC=R+ D+
- 2006: Estimate based on coverage reported by national government. GoC=R+ D+
- 2007: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). Kenya Demographic and Health Survey 2008-09 card or history results of 86 percent modified for recall bias to 91 percent based on 1st dose card or history coverage of 96 percent, 1st dose card only coverage of 70 percent and 3d dose card only coverage of 66 percent. GoC=R+ S+ D+
- 2008: Estimate based on coverage reported by national government. Drop in coverage likely due to vaccine shortage (25 days) Estimate challenged by: D-
- 2009: Estimate based on interpolation between data reported by national government. Reported data excluded. Sudden unexplained change in target population GoC=S+ D+
- 2010: Estimate based on coverage reported by national government. Revised denominator. GoC=R+ D+
- 2011: Estimate based on coverage reported by national government. GoC=R+ D+
- 2012: Estimate based on coverage reported by national government. One-month vaccine shortage reported. GoC=R+ D+
- 2013: Estimate based on extrapolation from data reported by national government. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=No accepted empirical data

# Kenya - RotaC



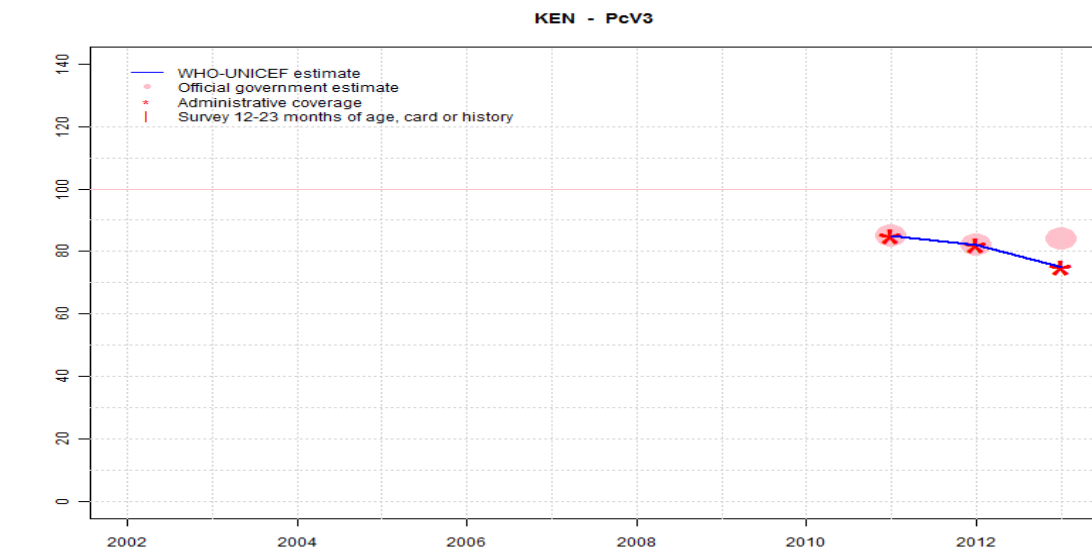
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

# Kenya - PcV3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	85	82	75
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●●	●●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	85	82	84
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	85	82	75
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

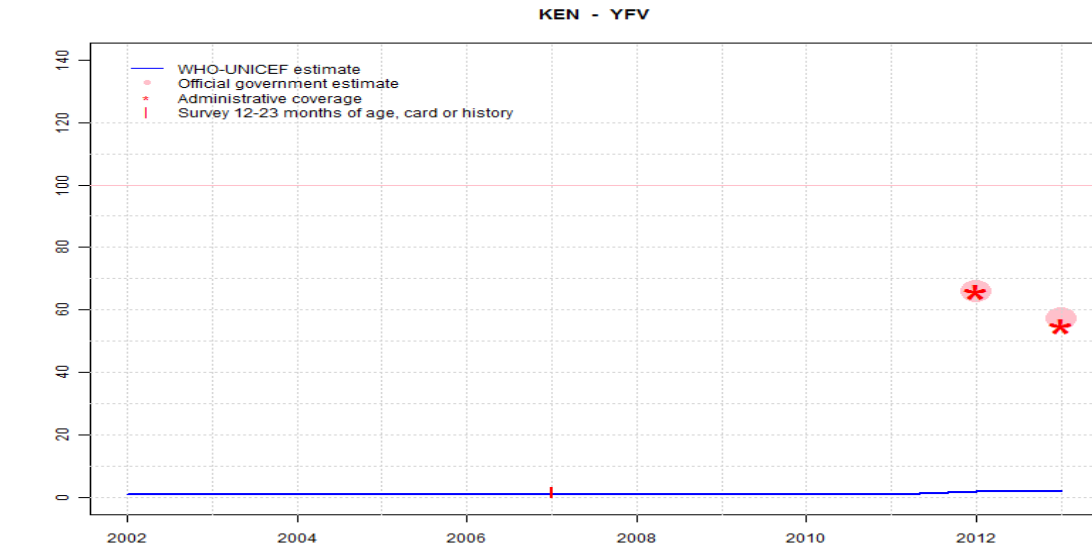
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2011: Estimate based on coverage reported by national government. Pneumococcal conjugate vaccine introduced in 2011. GoC=R+
- 2012: Estimate based on coverage reported by national government. One-month vaccine shortage reported. GoC=R+ D+
- 2013: Estimate based on reported administrative estimate. Insufficient explanation of methods and data sources used to derive government official estimates. GoC=R+ D+

# Kenya - YFV



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	1	1	1	1	1	1	1	1	1	1	2	2
Estimate GoC	••	••	••	••	••	••	••	••	••	••	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	66	57
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	66	55
Survey	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	NA

The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability model upon which the estimates are based, we are unable to present classical measures of uncertainty, e.g., confidence intervals. Moreover, we have chosen not to make subjective estimates of plausibility/certainty ranges around the coverage. The GoC reflects the degree of empirical support upon which the estimates are based. It is not a judgment of the quality of data reported by national authorities.

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2002: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=D+
- 2003: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=D+
- 2004: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=D+
- 2005: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=S+ D+
- 2006: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=S+ D+
- 2007: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=S+ D+
- 2008: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=S+ D+
- 2009: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=S+ D+
- 2010: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. Revised denominator. GoC=D+
- 2011: Routine infant immunization recommended in 4 high risk areas which comprises approximately 3 percent of the national birth cohort. GoC=D+
- 2012: Sixty six percent coverage achieved in 3 percent of the target population. Estimate challenged by: R-
- 2013: Fifty-four coverage achieved in 3 percent of the target population. Reported data excluded. Change in reported coverage from 66 level to 55 percent. Insufficient explanation of methods and data sources used to derive government official estimates. Estimate challenged by: R-

# Kenya - survey details

## 2011 National Immunization Coverage Survey, 2012-Summary of Findings

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Scar	94	12-23 m	3986	74

## 2007 Kenya Demographic and Health Survey 2008-09

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	95	12-23 m	1096	70
BCG	Card	70	12-23 m	1096	70
BCG	Card or History	96	12-23 m	1096	70
BCG	History	26	12-23 m	1096	70
DTP1	C or H <12 months	94	12-23 m	1096	70
DTP1	Card	70	12-23 m	1096	70
DTP1	Card or History	96	12-23 m	1096	70
DTP1	History	26	12-23 m	1096	70
DTP3	C or H <12 months	84	12-23 m	1096	70
DTP3	Card	66	12-23 m	1096	70
DTP3	Card or History	86	12-23 m	1096	70
DTP3	History	20	12-23 m	1096	70
HepB1	C or H <12 months	94	12-23 m	1096	70
HepB1	Card	70	12-23 m	1096	70
HepB1	Card or History	96	12-23 m	1096	70
HepB1	History	26	12-23 m	1096	70
HepB3	C or H <12 months	84	12-23 m	1096	70
HepB3	Card	66	12-23 m	1096	70
HepB3	Card or History	86	12-23 m	1096	70
HepB3	History	20	12-23 m	1096	70
Hib1	C or H <12 months	94	12-23 m	1096	70
Hib1	Card	70	12-23 m	1096	70
Hib1	Card or History	96	12-23 m	1096	70
Hib1	History	26	12-23 m	1096	70
Hib3	C or H <12 months	84	12-23 m	1096	70
Hib3	Card	66	12-23 m	1096	70
Hib3	Card or History	86	12-23 m	1096	70
Hib3	History	20	12-23 m	1096	70
MCV	C or H <12 months	74	12-23 m	1096	70

MCV	Card	61	12-23 m	1096	70
MCV	Card or History	85	12-23 m	1096	70
MCV	History	24	12-23 m	1096	70
Pol1	C or H <12 months	94	12-23 m	1096	70
Pol1	Card	70	12-23 m	1096	70
Pol1	Card or History	96	12-23 m	1096	70
Pol1	History	26	12-23 m	1096	70
Pol3	C or H <12 months	84	12-23 m	1096	70
Pol3	Card	67	12-23 m	1096	70
Pol3	Card or History	88	12-23 m	1096	70
Pol3	History	21	12-23 m	1096	70
YFV	C or H <12 months	2	12-23 m	1096	70
YFV	Card	3	12-23 m	1096	70
YFV	Card or History	3	12-23 m	1096	70
YFV	History	0	12-23 m	1096	70

## 2002 National Demographic and Health Survey 2003

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

# Kenya - survey details

Pol1	C or H <12 months	90	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
Pol3	C or H <12 months	70	12-23 m	1131	60
Pol3	Card	52	12-23 m	1131	60
Pol3	Card or history	72	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	C or H <12 months	90	12-23 m	1544	-
BCG	Card	63	12-23 m	1544	-
BCG	Card or History	91	12-23 m	1544	-
BCG	History	28	12-23 m	1544	-
DTP1	C or H <12 months	89	12-23 m	1544	-
DTP1	Card	63	12-23 m	1544	-
DTP1	Card or History	89	12-23 m	1544	-
DTP1	History	26	12-23 m	1544	-
DTP3	C or H <12 months	75	12-23 m	1544	-
DTP3	Card	58	12-23 m	1544	-
DTP3	Card or History	76	12-23 m	1544	-
DTP3	History	18	12-23 m	1544	-
MCV	C or H <12 months	72	12-23 m	1544	-
MCV	Card	51	12-23 m	1544	-
MCV	Card or History	76	12-23 m	1544	-
MCV	History	25	12-23 m	1544	-
Pol1	C or H <12 months	86	12-23 m	1544	-
Pol1	Card	62	12-23 m	1544	-
Pol1	Card or History	87	12-23 m	1544	-
Pol1	History	24	12-23 m	1544	-
Pol3	C or H <12 months	72	12-23 m	1544	-

Pol3	Card	58	12-23 m	1544	-
Pol3	Card or History	73	12-23 m	1544	-
Pol3	History	15	12-23 m	1544	-

## 1997 Kenya Demographic and Health Survey 1998,1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	55	12-23 m	1097	55
BCG	Card <12 months	94	12-23 m	1097	55
BCG	Card or History	96	12-23 m	1097	55
BCG	History	41	12-23 m	1097	55
DTP1	Card	55	12-23 m	1097	55
DTP1	Card <12 months	94	12-23 m	1097	55
DTP1	Card or History	96	12-23 m	1097	55
DTP1	History	41	12-23 m	1097	55
DTP3	Card	51	12-23 m	1097	55
DTP3	Card <12 months	76	12-23 m	1097	55
DTP3	Card or History	79	12-23 m	1097	55
DTP3	History	28	12-23 m	1097	55
MCV	Card	46	12-23 m	1097	55
MCV	Card <12 months	71	12-23 m	1097	55
MCV	Card or History	79	12-23 m	1097	55
MCV	History	33	12-23 m	1097	55
Pol1	Card	55	12-23 m	1097	55
Pol1	Card <12 months	94	12-23 m	1097	55
Pol1	Card or History	95	12-23 m	1097	55
Pol1	History	40	12-23 m	1097	55
Pol3	Card	51	12-23 m	1097	55
Pol3	Card <12 months	78	12-23 m	1097	55
Pol3	Card or History	81	12-23 m	1097	55
Pol3	History	30	12-23 m	1097	55

Further information and estimates prior to 2002 are available at:

<http://www.data.unicef.org/child-health/immunization>

[http://www.who.int/immunization/monitoring\\_surveillance/routine/coverage/en/index4.html](http://www.who.int/immunization/monitoring_surveillance/routine/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 (%)
2002	72
2003	73
2004	73
2005	73
2006	74
2007	74
2008	78
2009	78
2010	78
2011	73
2012	73
2013	73

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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.