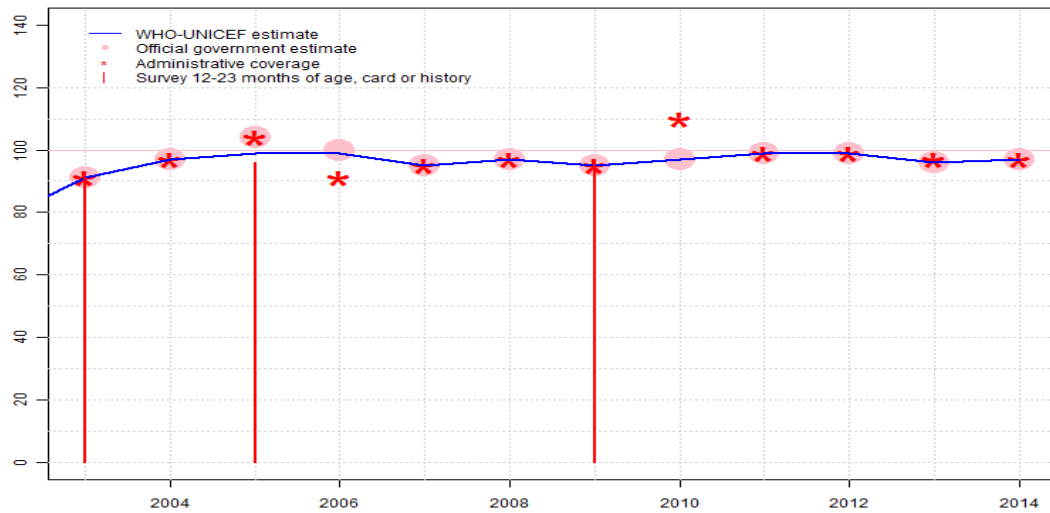


MWI - BCG



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	91	97	99	99	95	97	95	97	99	99	96	97
Estimate GoC	●	●	●	●	●	●	●	●	●●●	●●	●●	●●
Official	91	97	104	100	95	97	95	97	99	99	96	97
Administrative	91	97	104	91	95	97	95	110	99	99	97	97
Survey	91	NA	96	NA	NA	NA	97	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.

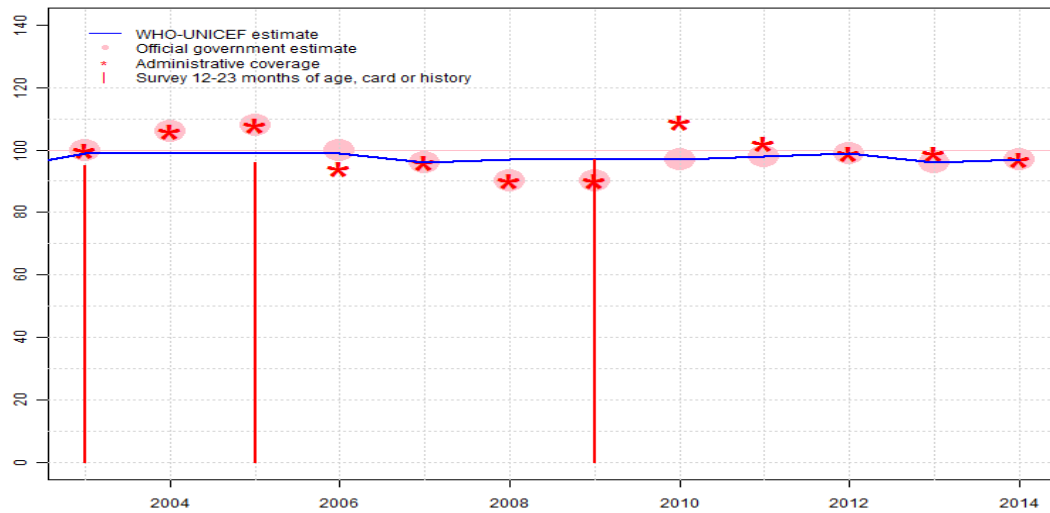
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2003: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). Estimate challenged by: D-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Reported data excluded. 104 percent greater than 100 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 97 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+

# Malawi - DTP1

MWI - DTP1



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	99	99	99	99	96	97	97	97	98	99	96	97
Estimate GoC	•	•	•	•	•	•	•	•	•	•	••	••
Official	100	106	108	100	96	90	90	97	98	99	96	97
Administrative	100	106	108	94	96	90	90	109	102	99	99	97
Survey	95	NA	96	NA	NA	NA	97	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.

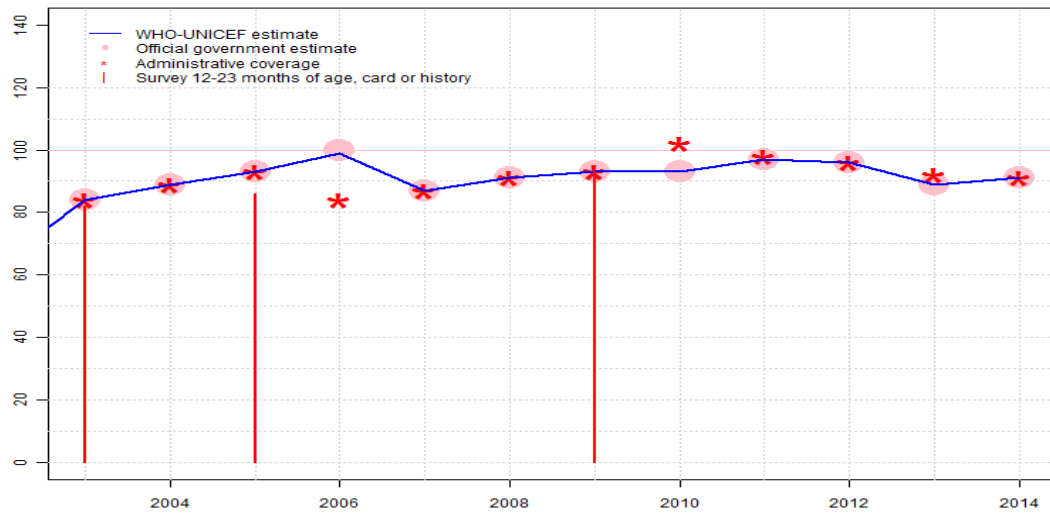
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2003: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Estimate challenged by: D-
- 2004: Estimate based on interpolation between coverage reported by national government. Reported data excluded. 106 percent greater than 100 percent. Estimate challenged by: D-
- 2005: Estimate based on interpolation between data reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Reported data excluded. 108 percent greater than 100 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: DTP1 coverage estimated based on DTP3 coverage of 91. Estimate challenged by: D-R-
- 2009: DTP1 coverage estimated based on DTP3 coverage of 93. Estimate challenged by: D-R-
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government. GoC=R+D+
- 2014: Estimate based on coverage reported by national government. GoC=R+D+

# Malawi - DTP3

MWI - DTP3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	84	89	93	99	87	91	93	93	97	96	89	91
Estimate GoC	●	●	●	●●●	●	●	●	●	●●●	●●	●●	●●
Official	84	89	93	100	87	91	93	93	97	96	89	91
Administrative	84	89	93	84	87	91	93	102	98	96	92	91
Survey	82	NA	86	NA	NA	NA	93	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.

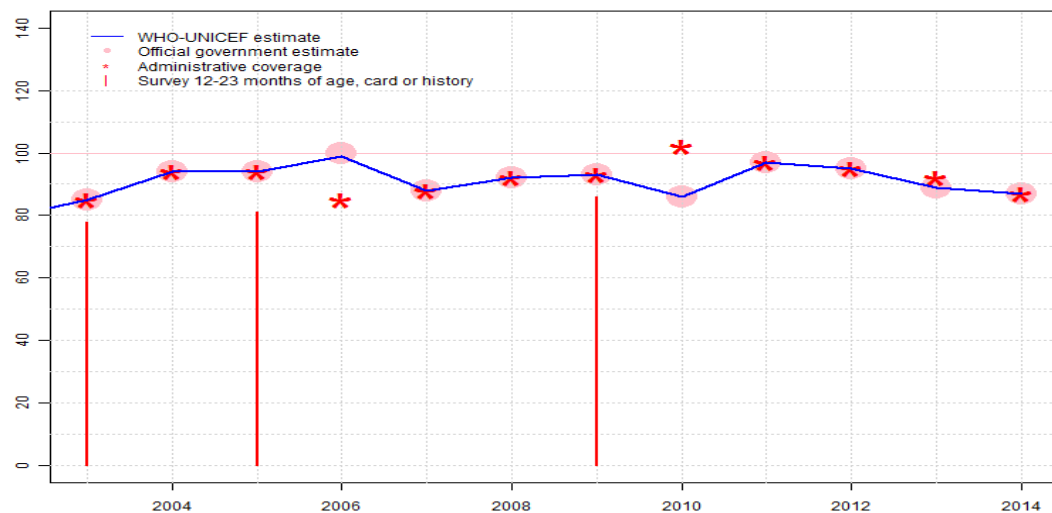
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2003: Estimate based on coverage reported by national government supported by survey. Survey evidence of 87 percent based on 1 survey(s). Malawi Demographic and Health Survey 2004 card or history results of 82 percent modified for recall bias to 87 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 73 percent and 3d dose card only coverage of 67 percent. Estimate challenged by: D-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Malawi Multiple Indicator Cluster Survey 2006 card or history results of 86 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 76 percent and 3d dose card only coverage of 73 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Malawi Demographic and Health Survey 2010 card or history results of 93 percent modified for recall bias to 96 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 80 percent and 3d dose card only coverage of 79 percent. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+

MWI - Pol3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	85	94	94	99	88	92	93	86	97	95	89	87
Estimate GoC	●	●	●	●●●	●	●	●	●	●●●	●●	●●	●●
Official	85	94	94	100	88	92	93	86	97	95	89	87
Administrative	85	94	94	85	88	92	93	102	97	95	92	87
Survey	78	NA	81	NA	NA	NA	86	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.

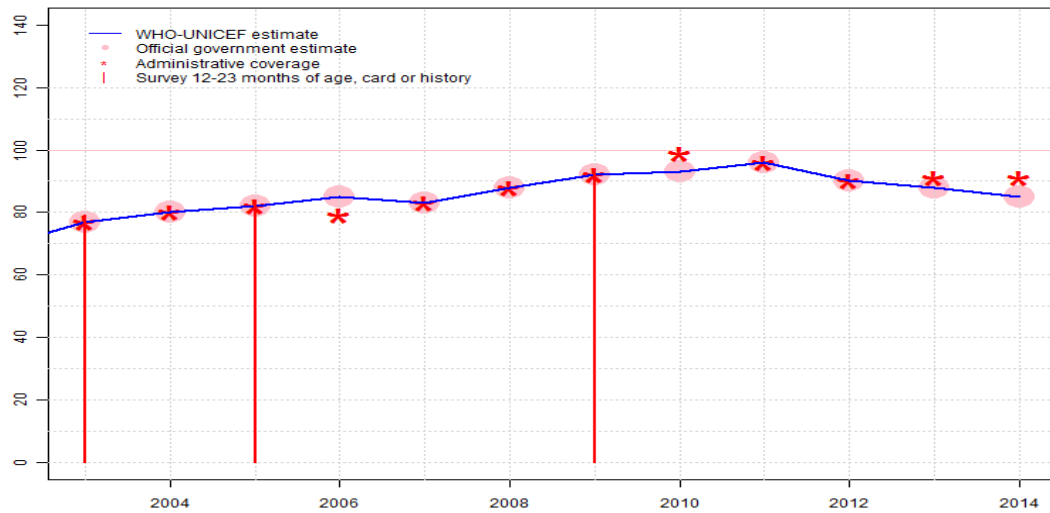
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2003: Estimate based on coverage reported by national government supported by survey. Survey evidence of 86 percent based on 1 survey(s). Malawi Demographic and Health Survey 2004 card or history results of 78 percent modified for recall bias to 86 percent based on 1st dose card or history coverage of 95 percent, 1st dose card only coverage of 74 percent and 3d dose card only coverage of 67 percent. Estimate challenged by: D-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 91 percent based on 1 survey(s). Malawi Multiple Indicator Cluster Survey 2006 card or history results of 81 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 76 percent and 3d dose card only coverage of 72 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 95 percent based on 1 survey(s). Malawi Demographic and Health Survey 2010 card or history results of 86 percent modified for recall bias to 95 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 80 percent and 3d dose card only coverage of 78 percent. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+

# Malawi - MCV1

MWI - MCV1



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	77	80	82	85	83	88	92	93	96	90	88	85
Estimate GoC	•	•	•	•	•	•	•	•	•••	••	••	•
Official	77	80	82	85	83	88	92	93	96	90	88	85
Administrative	77	80	82	79	83	88	92	99	96	90	91	91
Survey	79	NA	84	NA	NA	NA	93	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.

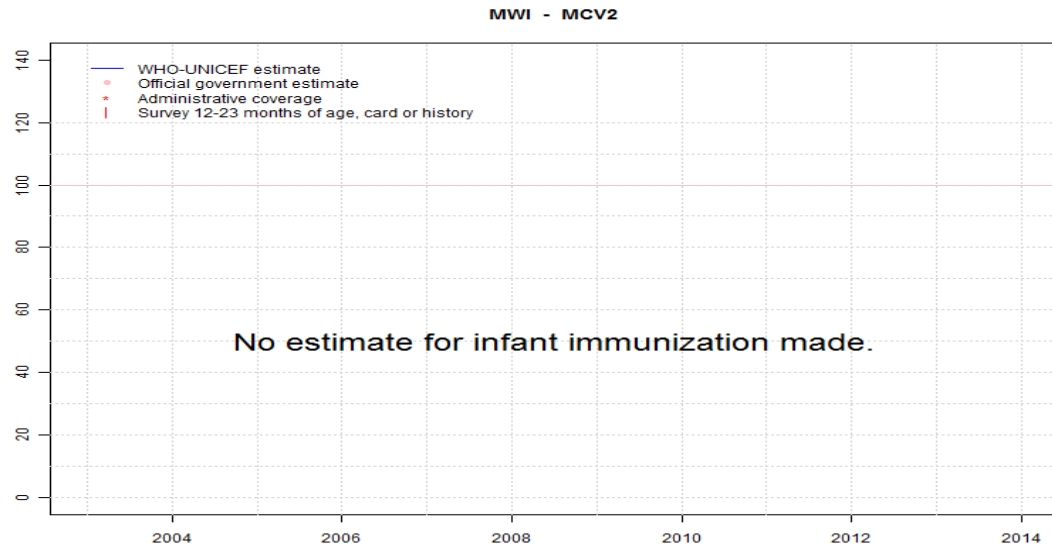
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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:

- 2003: Estimate based on coverage reported by national government supported by survey. Survey evidence of 79 percent based on 1 survey(s). Estimate challenged by: D-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 84 percent based on 1 survey(s). Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 93 percent based on 1 survey(s). Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-

# Malawi - MCV2



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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

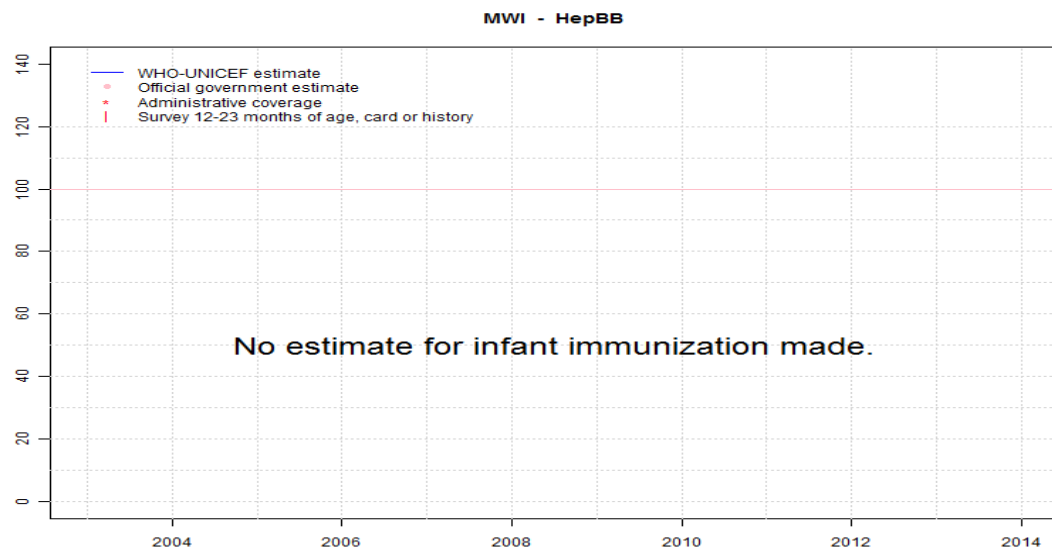
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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.



# Malawi - HepBB



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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.

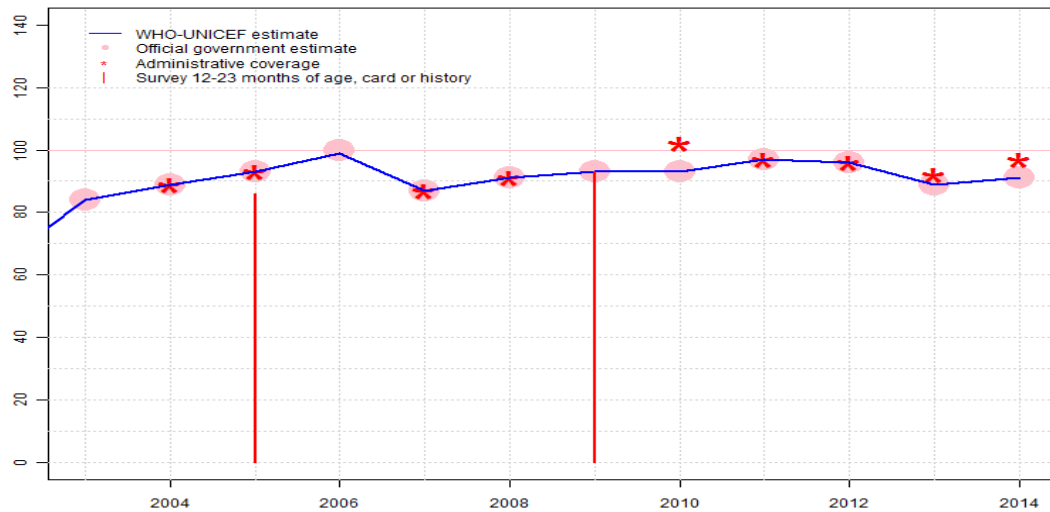
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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.



# Malawi - HepB3

MWI - HepB3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	84	89	93	99	87	91	93	93	97	96	89	91
Estimate GoC	•	•	•	•••	•	•	••	••	•••	••	••	••
Official	84	89	93	100	87	91	93	93	97	96	89	91
Administrative	NA	89	93	NA	87	91	NA	102	97	96	92	97
Survey	NA	NA	86	NA	NA	NA	93	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.

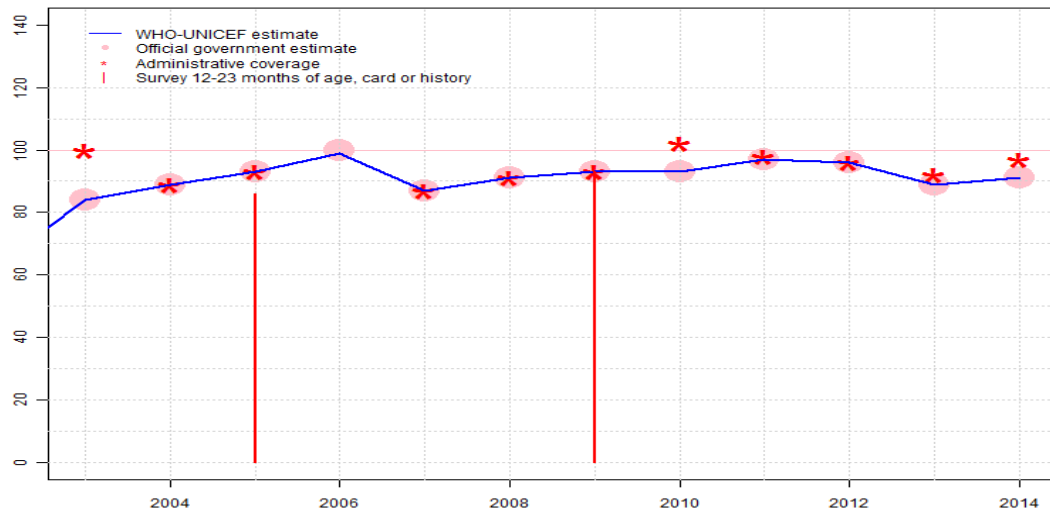
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2003: Estimate based on reported data. Estimate challenged by: D-
- 2004: Estimate based on reported data. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Malawi Multiple Indicator Cluster Survey 2006 card or history results of 86 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 76 percent and 3d dose card only coverage of 73 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Malawi Demographic and Health Survey 2010 card or history results of 93 percent modified for recall bias to 96 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 80 percent and 3d dose card only coverage of 79 percent. GoC=R+ S+
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. GoC=R+ S+
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+

# Malawi - Hib3

MWI - Hib3



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	84	89	93	99	87	91	93	93	97	96	89	91
Estimate GoC	•	•	•	•••	•	•	•	•	•••	••	••	••
Official	84	89	93	100	87	91	93	93	97	96	89	91
Administrative	100	89	93	NA	87	91	93	102	98	96	92	97
Survey	NA	NA	86	NA	NA	NA	93	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.

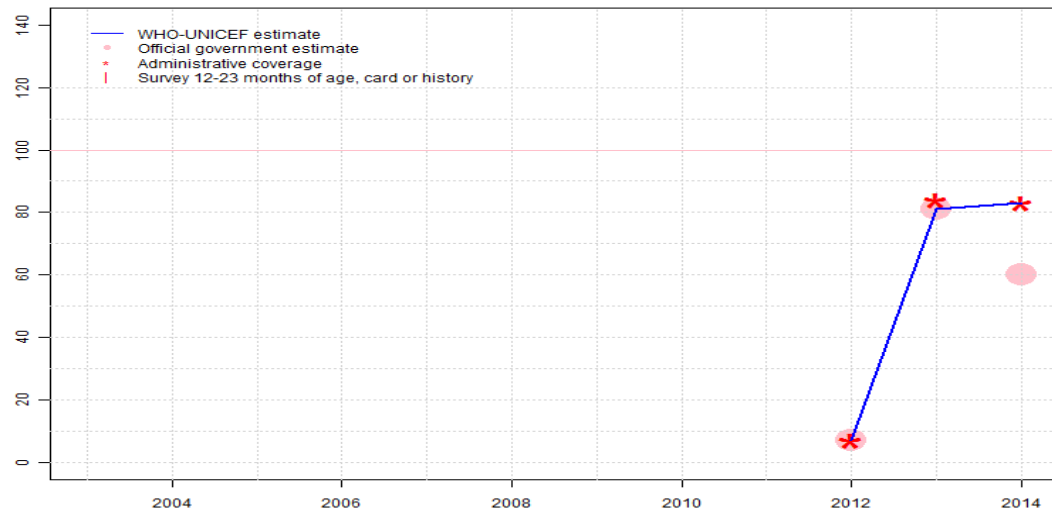
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2003: Estimate based on reported data. Estimate challenged by: D-
- 2004: Estimate based on reported data. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). Malawi Multiple Indicator Cluster Survey 2006 card or history results of 86 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 76 percent and 3d dose card only coverage of 73 percent. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2008: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2009: Estimate based on coverage reported by national government supported by survey. Survey evidence of 96 percent based on 1 survey(s). Malawi Demographic and Health Survey 2010 card or history results of 93 percent modified for recall bias to 96 percent based on 1st dose card or history coverage of 97 percent, 1st dose card only coverage of 80 percent and 3d dose card only coverage of 79 percent. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. National official estimates are based on preliminary results from DHS 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+

# Malawi - RotaC

MWI - RotaC



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	81	83
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	••	••	••
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	81	60
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	84	83
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.

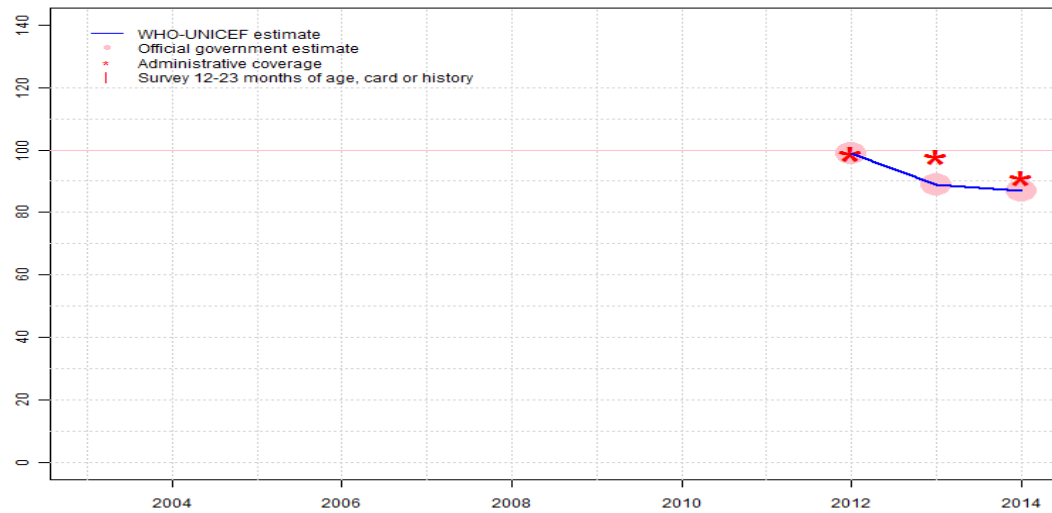
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

## Description:

- 2012: Estimate based on coverage reported by national government. Rotavirus vaccine introduced on 29 October 2012. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on reported administrative estimate. Adjustment applied to official coverage from administrative data is unexplained. GoC=R+ D+

# Malawi - PcV3

MWI - PcV3



## Description:

- 2012: Estimate based on coverage reported by national government. Pneumococcal conjugate vaccine introduced in October 2011. Reporting started in 2012. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government. GoC=R+D+
- 2014: Estimate based on coverage reported by national government. Estimate challenged by: D-

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	99	89	87
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●	●●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	99	89	87
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	99	98	91
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.

# Malawi - survey details

## 2009 Malawi Demographic and Health Survey 2010

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	96	12-23 m	3774	81
BCG	Card	80	12-23 m	3774	81
BCG	Card or History	97	12-23 m	3774	81
BCG	History	17	12-23 m	3774	81
DTP1	C or H <12 months	96	12-23 m	3774	81
DTP1	Card	80	12-23 m	3774	81
DTP1	Card or History	97	12-23 m	3774	81
DTP1	History	17	12-23 m	3774	81
DTP3	C or H <12 months	92	12-23 m	3774	81
DTP3	Card	79	12-23 m	3774	81
DTP3	Card or History	93	12-23 m	3774	81
DTP3	History	14	12-23 m	3774	81
HepB1	C or H <12 months	96	12-23 m	3774	81
HepB1	Card	80	12-23 m	3774	81
HepB1	Card or History	97	12-23 m	3774	81
HepB1	History	17	12-23 m	3774	81
HepB3	C or H <12 months	92	12-23 m	3774	81
HepB3	Card	79	12-23 m	3774	81
HepB3	Card or History	93	12-23 m	3774	81
HepB3	History	14	12-23 m	3774	81
Hib1	C or H <12 months	96	12-23 m	3774	81
Hib1	Card	80	12-23 m	3774	81
Hib1	Card or History	97	12-23 m	3774	81
Hib1	History	17	12-23 m	3774	81
Hib3	C or H <12 months	92	12-23 m	3774	81
Hib3	Card	79	12-23 m	3774	81
Hib3	Card or History	93	12-23 m	3774	81
Hib3	History	14	12-23 m	3774	81
MCV1	C or H <12 months	83	12-23 m	3774	81
MCV1	Card	76	12-23 m	3774	81
MCV1	Card or History	93	12-23 m	3774	81
MCV1	History	17	12-23 m	3774	81
Pol1	C or H <12 months	96	12-23 m	3774	81
Pol1	Card	80	12-23 m	3774	81
Pol1	Card or History	97	12-23 m	3774	81
Pol1	History	16	12-23 m	3774	81
Pol3	C or H <12 months	84	12-23 m	3774	81

Pol3	Card	78	12-23 m	3774	81
Pol3	Card or History	86	12-23 m	3774	81
Pol3	History	7	12-23 m	3774	81

## 2005 Malawi Multiple Indicator Cluster Survey 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	95	12-23 m	5080	77
BCG	Card	75	12-23 m	5080	77
BCG	Card or History	96	12-23 m	5080	77
BCG	History	21	12-23 m	5080	77
DTP1	C or H <12 months	95	12-23 m	5080	77
DTP1	Card	76	12-23 m	5080	77
DTP1	Card or History	96	12-23 m	5080	77
DTP1	History	21	12-23 m	5080	77
DTP3	C or H <12 months	84	12-23 m	5080	77
DTP3	Card	73	12-23 m	5080	77
DTP3	Card or History	86	12-23 m	5080	77
DTP3	History	14	12-23 m	5080	77
HepB1	C or H <12 months	95	12-23 m	5080	77
HepB1	Card	76	12-23 m	5080	77
HepB1	Card or History	96	12-23 m	5080	77
HepB1	History	21	12-23 m	5080	77
HepB3	C or H <12 months	84	12-23 m	5080	77
HepB3	Card	73	12-23 m	5080	77
HepB3	Card or History	86	12-23 m	5080	77
HepB3	History	14	12-23 m	5080	77
Hib1	C or H <12 months	95	12-23 m	5080	77
Hib1	Card	76	12-23 m	5080	77
Hib1	Card or History	96	12-23 m	5080	77
Hib1	History	21	12-23 m	5080	77
Hib3	C or H <12 months	84	12-23 m	5080	77
Hib3	Card	73	12-23 m	5080	77
Hib3	Card or History	86	12-23 m	5080	77
Hib3	History	14	12-23 m	5080	77
MCV1	C or H <12 months	76	12-23 m	5080	77
MCV1	Card	66	12-23 m	5080	77
MCV1	Card or History	84	12-23 m	5080	77
MCV1	History	19	12-23 m	5080	77

# Malawi - survey details

Pol1	C or H <12 months	95	12-23 m	5080	77
Pol1	Card	76	12-23 m	5080	77
Pol1	Card or History	96	12-23 m	5080	77
Pol1	History	20	12-23 m	5080	77
Pol3	C or H <12 months	79	12-23 m	5080	77
Pol3	Card	72	12-23 m	5080	77
Pol3	Card or History	81	12-23 m	5080	77
Pol3	History	9	12-23 m	5080	77

## 2003 Malawi Demographic and Health Survey 2004

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	90	12-23 m	2194	74
BCG	Card	70	12-23 m	2194	74
BCG	Card or History	91	12-23 m	2194	74
BCG	History	21	12-23 m	2194	74
DTP1	C or H <12 months	94	12-23 m	2194	74
DTP1	Card	73	12-23 m	2194	74
DTP1	Card or History	95	12-23 m	2194	74
DTP1	History	22	12-23 m	2194	74
DTP3	C or H <12 months	76	12-23 m	2194	74
DTP3	Card	67	12-23 m	2194	74
DTP3	Card or History	82	12-23 m	2194	74
DTP3	History	14	12-23 m	2194	74
MCV1	C or H <12 months	63	12-23 m	2194	74
MCV1	Card	62	12-23 m	2194	74
MCV1	Card or History	79	12-23 m	2194	74
MCV1	History	17	12-23 m	2194	74
Pol1	C or H <12 months	94	12-23 m	2194	74
Pol1	Card	74	12-23 m	2194	74
Pol1	Card or History	95	12-23 m	2194	74
Pol1	History	21	12-23 m	2194	74
Pol3	C or H <12 months	73	12-23 m	2194	74
Pol3	Card	67	12-23 m	2194	74
Pol3	Card or History	78	12-23 m	2194	74
Pol3	History	10	12-23 m	2194	74

## 1999 Malawi Demographic and Health Survey 2000, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	90	12-23 m	2238	81
BCG	Card	77	12-23 m	2238	81
BCG	Card or History	91	12-23 m	2238	81
BCG	History	15	12-23 m	2238	81
DTP1	C or H <12 months	94	12-23 m	2238	81
DTP1	Card	80	12-23 m	2238	81
DTP1	Card or History	96	12-23 m	2238	81
DTP1	History	16	12-23 m	2238	81
DTP3	C or H <12 months	79	12-23 m	2238	81
DTP3	Card	74	12-23 m	2238	81
DTP3	Card or History	84	12-23 m	2238	81
DTP3	History	10	12-23 m	2238	81
MCV1	C or H <12 months	64	12-23 m	2238	81
MCV1	Card	70	12-23 m	2238	81
MCV1	Card or History	83	12-23 m	2238	81
MCV1	History	13	12-23 m	2238	81
Pol1	C or H <12 months	93	12-23 m	2238	81
Pol1	Card	80	12-23 m	2238	81
Pol1	Card or History	96	12-23 m	2238	81
Pol1	History	16	12-23 m	2238	81
Pol3	C or H <12 months	73	12-23 m	2238	81
Pol3	Card	72	12-23 m	2238	81
Pol3	Card or History	80	12-23 m	2238	81
Pol3	History	7	12-23 m	2238	81

## 1998 National EPI Comprehensive Review Report, 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	86	11-23 m	210	93
BCG	Card or History	92	11-23 m	210	93
DTP1	Card	91	11-23 m	210	93
DTP1	Card or History	97	11-23 m	210	93
DTP3	Card	88	11-23 m	210	93
DTP3	Card or History	94	11-23 m	210	93
MCV1	Card	85	11-23 m	210	93
MCV1	Card or History	90	11-23 m	210	93
Pol1	Card	91	11-23 m	210	93

# Malawi - survey details

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Pol1	Card or History	97	11-23 m	210	93
Pol3	Card	87	11-23 m	210	93

Pol3	Card or History	93	11-23 m	210	93
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Further information and estimates for previous years 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)



## Malawi

### 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 receives 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.

The model was used in the mid to late 2000. Currently, the coverage series developed by the model is used as the baseline, and efforts are made to obtain data from all sources that include the JRF and reported trend over the years, routine PAB reporting and its trend over the years, data from surveys (DHS, MICS, EPI), whether countries have been validated for the attainment of maternal and neonatal tetanus elimination and what the TT coverage figures are from the survey etc and all the information is used to arrive at an estimate of the protection-at-birth from TT vaccination.

Year	PAB coverage estimate (%)
2003	87
2004	86
2005	86
2006	88
2007	86
2008	87
2009	87
2010	87
2011	87
2012	89
2013	89
2014	89

<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.