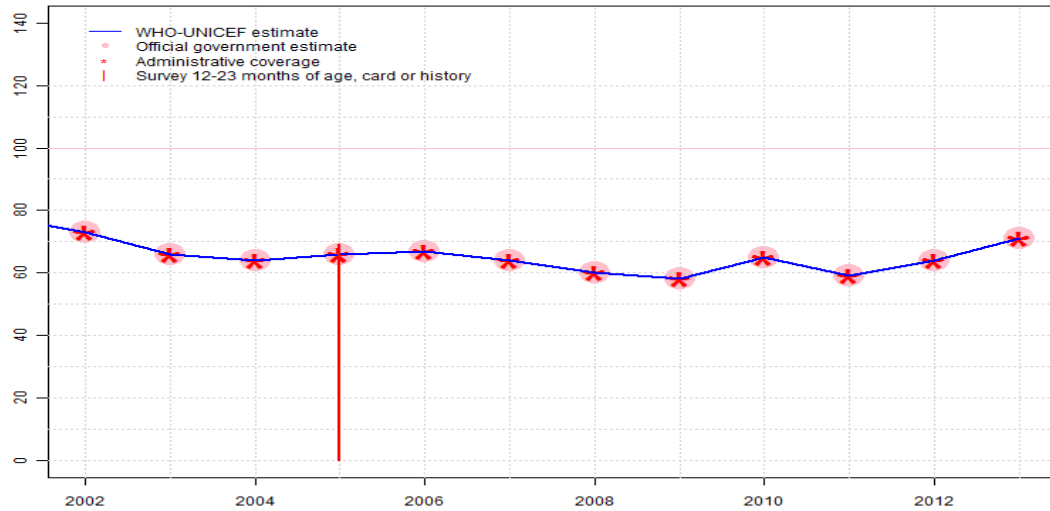


Yemen - BCG

YEM - BCG



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	73	66	64	66	67	64	60	58	65	59	64	71
Estimate GoC	•	•	•	•	•	•	••	••	••	•	•	•
Official	73	66	64	66	67	64	60	58	65	59	64	71
Administrative	73	66	64	66	67	64	60	58	65	59	64	71
Survey	NA	NA	NA	69	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.

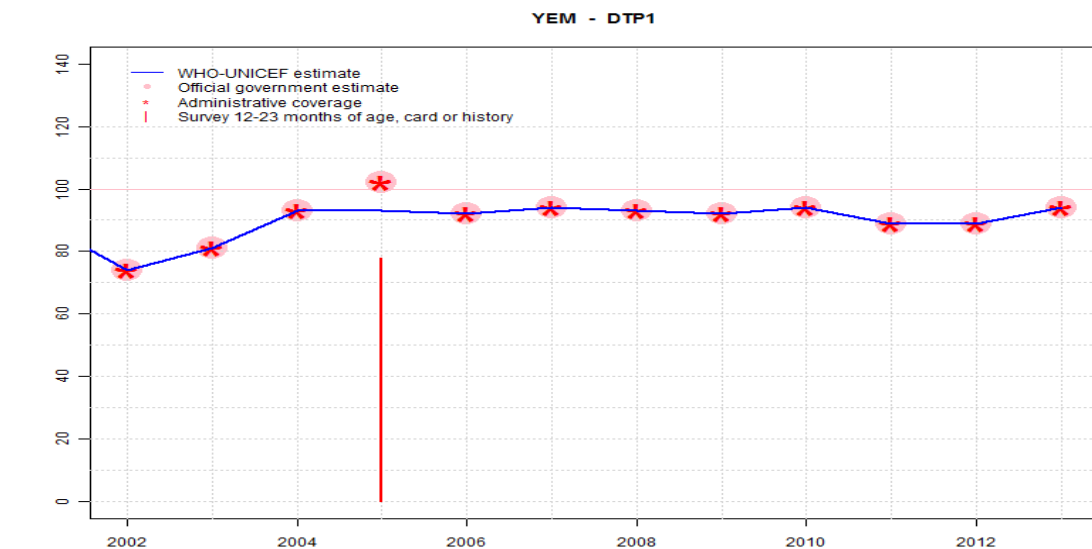
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2002: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2005: Estimate based on coverage reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. The survey results confirm reported coverage of 69 percent for this period. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. GoC=R+D+
- 2010: Estimate based on coverage reported by national government. GoC=R+D+
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. 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. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - DTP1



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	74	81	93	93	92	94	93	92	94	89	89	94
Estimate GoC	•	•	•	•	•	•	••	•	•	•	•	•
Official	74	81	93	102	92	94	93	92	94	89	89	94
Administrative	74	81	93	102	92	94	93	92	94	89	89	94
Survey	NA	NA	NA	78	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.

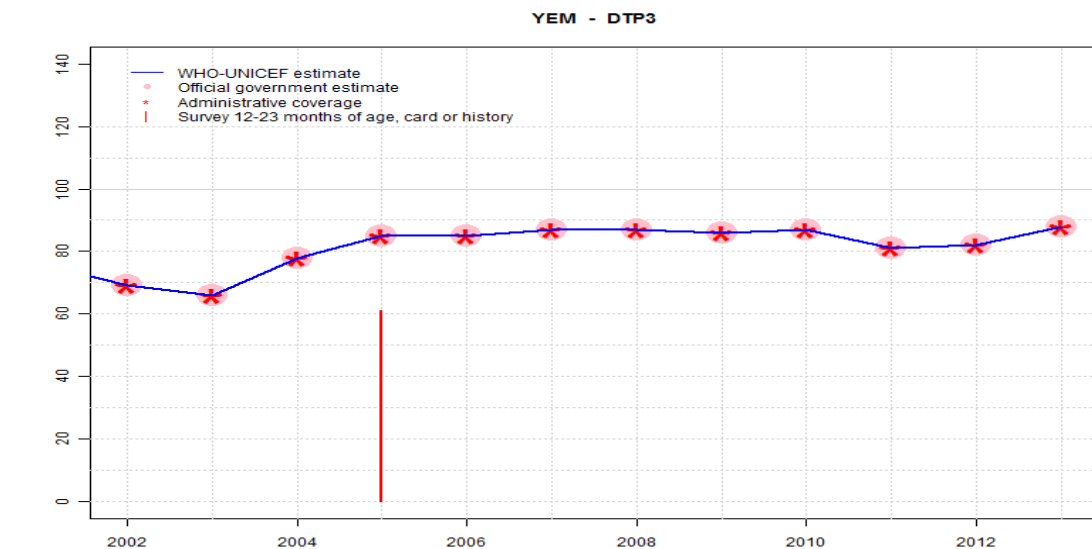
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2002: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2003: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2005: Estimate based on interpolation between data reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. Reported data excluded. 102 percent greater than 100 percent. DTP-HepB-Hib pentavalent vaccine introduced during April 2005. Estimate challenged by: D-S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. 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. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - DTP3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	69	66	78	85	85	87	87	86	87	81	82	88
Estimate GoC	••	•	•	•	•	•	••	••	•	•	•	•
Official	69	66	78	85	85	87	87	86	87	81	82	88
Administrative	69	66	78	85	85	87	87	86	87	81	82	88
Survey	NA	NA	NA	61	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.

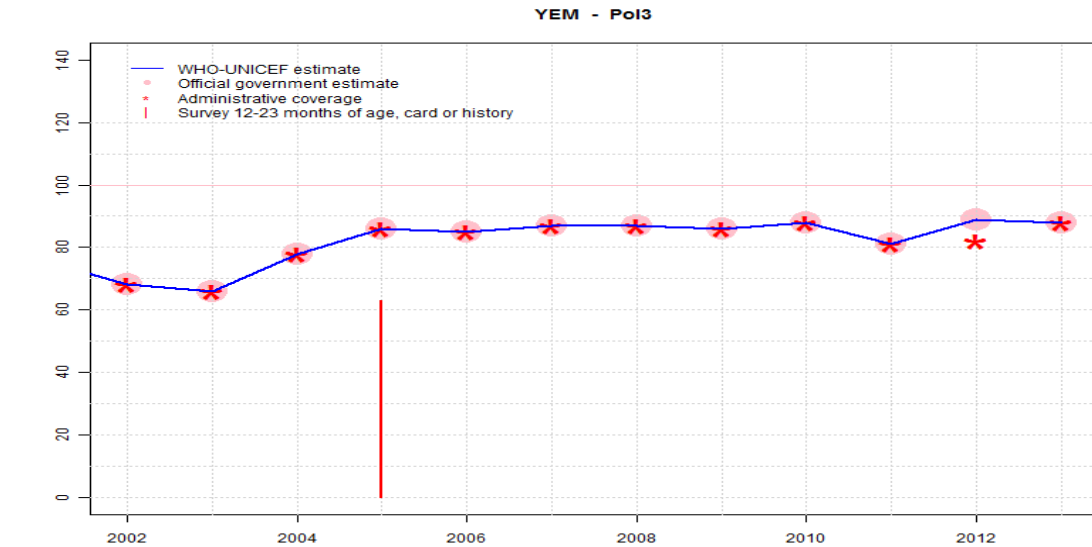
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2002: Estimate based on coverage reported by national government. GoC=R+ D+
- 2003: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2005: Estimate based on coverage reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. Yemen Multiple Indicator Cluster Survey 2006, Final Report card or history results of 61 percent modified for recall bias to 65 percent based on 1st dose card or history coverage of 78 percent, 1st dose card only coverage of 47 percent and 3d dose card only coverage of 39 percent. DTP-HepB-Hib pentavalent vaccine introduced during April 2005. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Disaggregated coverage data show 58 percent coverage through routine services and 27 percent coverage through outreach activities conducted over 5 rounds in 2006. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Disaggregated coverage data show 58 percent coverage through routine services and 27 percent coverage through outreach activities conducted over 6 rounds in 2007. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. Disaggregated coverage data show 57 percent coverage through routine services and 30 percent coverage through outreach activities conducted over 4 rounds in 2008. GoC=R+ D+
- 2009: Estimate based on coverage reported by national government. Disaggregated coverage data show 58 percent coverage through routine services and 28 percent coverage through outreach activities conducted over 4 rounds in 2009. GoC=R+ D+
- 2010: Estimate based on coverage reported by national government. Disaggregated coverage data show 58 percent coverage through routine services and 28 percent coverage through outreach activities conducted over 4 rounds in 2010. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. 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. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - Pol3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	68	66	78	86	85	87	87	86	88	81	89	88
Estimate GoC	••	•	•	•	•	•	••	••	•	•	••	•
Official	68	66	78	86	85	87	87	86	88	81	89	88
Administrative	68	66	78	86	85	87	87	86	88	81	82	88
Survey	NA	NA	NA	63	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.

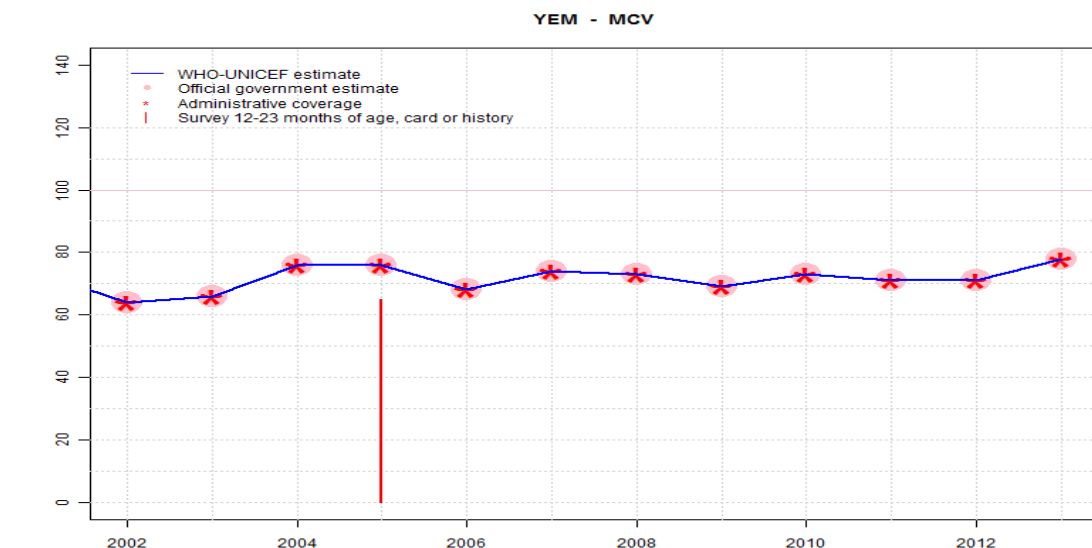
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2002: Estimate based on coverage reported by national government. GoC=R+D+
- 2003: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2005: Estimate based on coverage reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. Yemen Multiple Indicator Cluster Survey 2006, Final Report card or history results of 63 percent modified for recall bias to 65 percent based on 1st dose card or history coverage of 81 percent, 1st dose card only coverage of 45 percent and 3d dose card only coverage of 36 percent. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. GoC=R+D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate challenged by: D-
- 2012: Estimate based on coverage reported by national government. GoC=R+D+
- 2013: Estimate based on coverage reported by national government. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - MCV



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	64	66	76	76	68	74	73	69	73	71	71	78
Estimate GoC	••	•	•	•	•	•	••	••	•	•	•	•
Official	64	66	76	76	68	74	73	69	73	71	71	78
Administrative	64	66	76	76	68	74	73	69	73	71	71	78
Survey	NA	NA	NA	65	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.

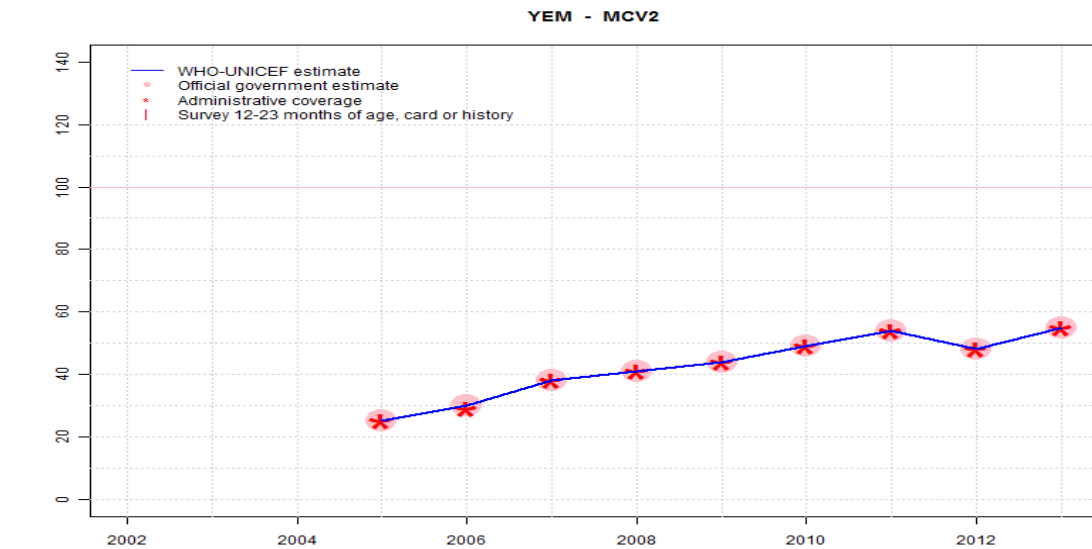
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2002: Estimate based on coverage reported by national government. GoC=R+D+
- 2003: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2005: Estimate based on coverage reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. GoC=R+D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. 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. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - MCV2



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	25	30	38	41	44	49	54	48	55
Estimate GoC	NA	NA	NA	•	•	•	••	••	••	••	••	•
Official	NA	NA	NA	25	30	38	41	44	49	54	48	55
Administrative	NA	NA	NA	25	29	38	41	44	49	54	48	55
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.

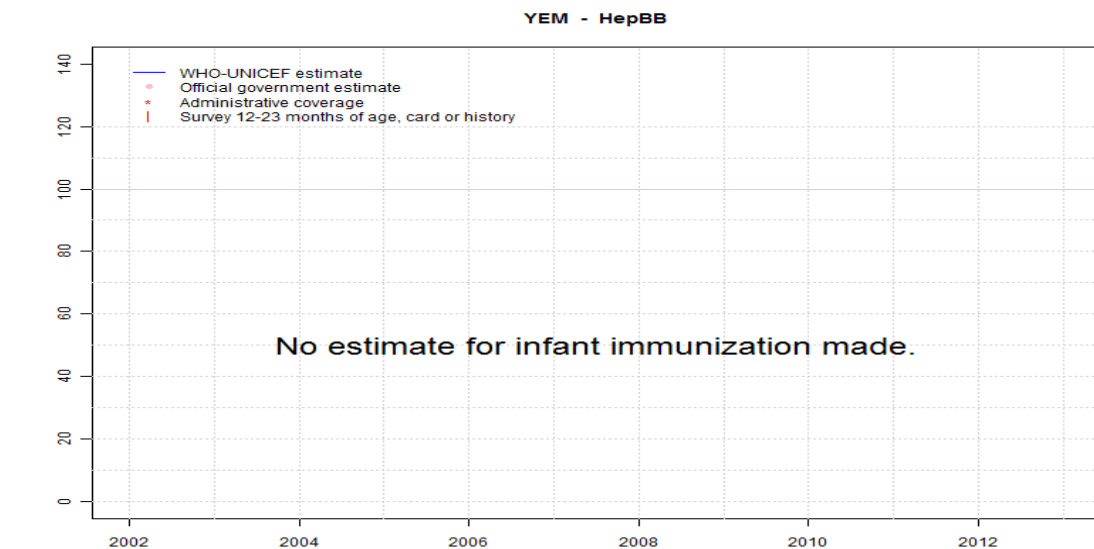
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

Coverage estimates for the second dose of measles containing vaccine are for children by the nationally recommended age.

- 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 coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. GoC=R+D+
- 2010: Estimate based on coverage reported by national government. GoC=R+D+
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. GoC=R+D+
- 2012: Estimate based on coverage reported by national government. GoC=R+D+
- 2013: Estimate based on coverage reported by national government. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-



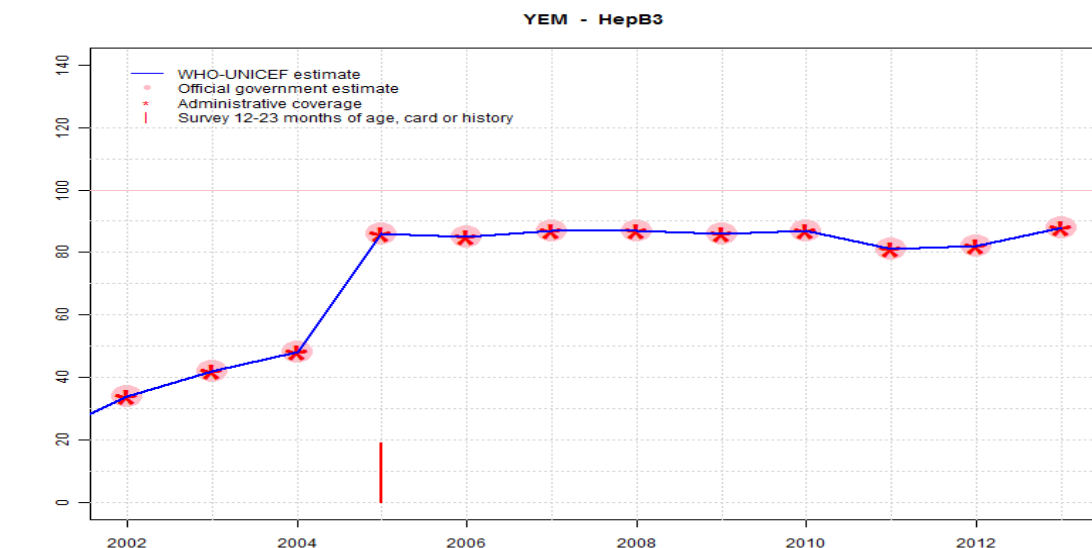
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

Yemen - HepB3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	34	42	48	86	85	87	87	86	87	81	82	88
Estimate GoC	••	•	•	•	•	•	••	••	•	•	•	•
Official	34	42	48	86	85	87	87	86	87	81	82	88
Administrative	34	42	48	86	85	87	87	86	87	81	82	88
Survey	NA	NA	NA	19	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.

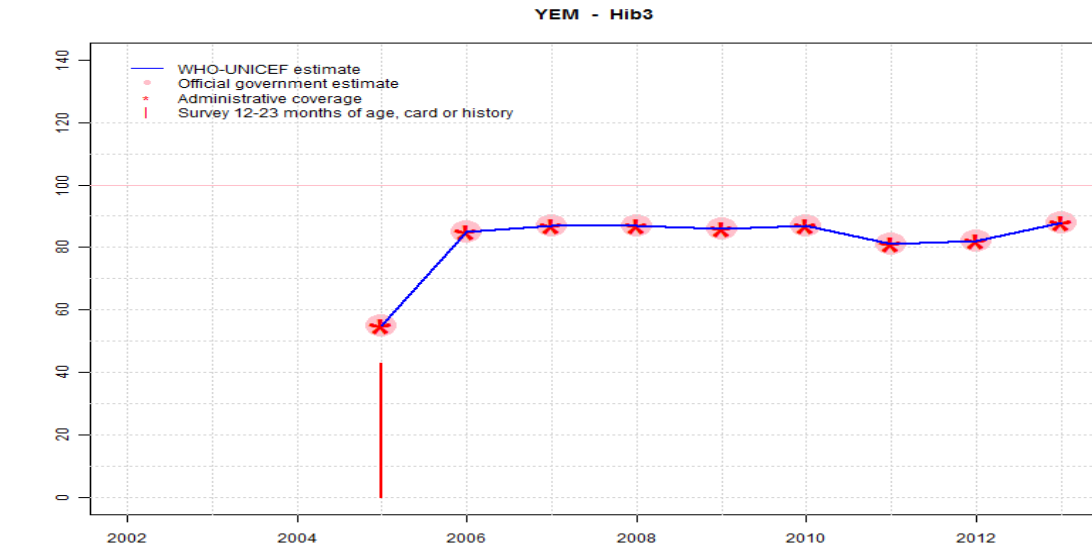
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2002: Estimate based on coverage reported by national government. GoC=R+D+
- 2003: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2004: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2005: Estimate based on coverage reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. Yemen Multiple Indicator Cluster Survey 2006, Final Report card or history results of 19 percent modified for recall bias to 21 percent based on 1st dose card or history coverage of 28 percent, 1st dose card only coverage of 12 percent and 3d dose card only coverage of 9 percent. DTP-HepB-Hib pentavalent vaccine introduced during April 2005. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. GoC=R+D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. 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. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - Hib3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	55	85	87	87	86	87	81	82	88
Estimate GoC	NA	NA	NA	•	•	•	••	••	•	•	•	•
Official	NA	NA	NA	55	85	87	87	86	87	81	82	88
Administrative	NA	NA	NA	55	85	87	87	86	87	81	82	88
Survey	NA	NA	NA	43	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.

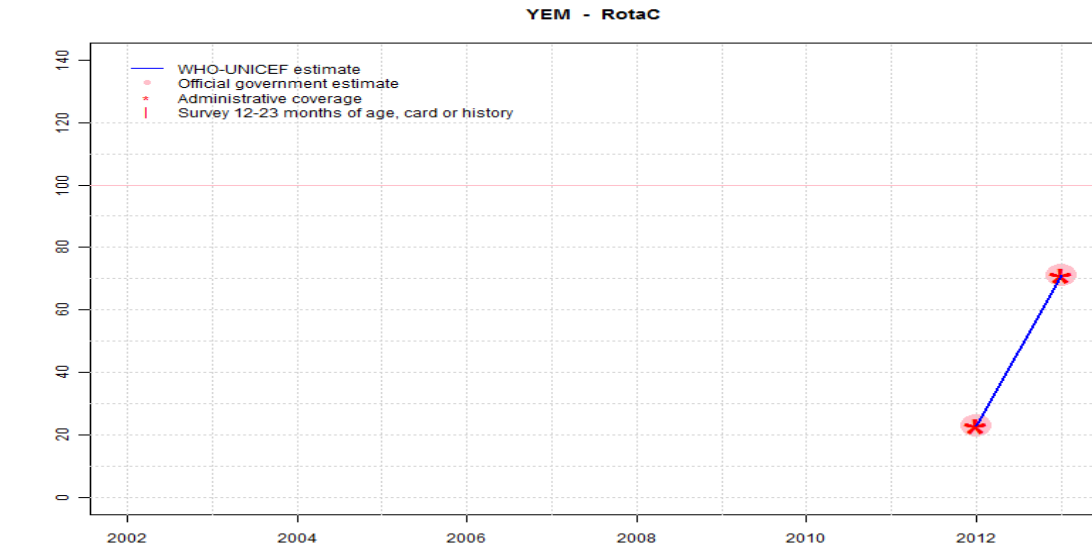
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2005: Estimate based on coverage reported by national government. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working group. Survey results refer to immunizations of children less than one year of age vaccinated between October 2004 to September 2005. Yemen Multiple Indicator Cluster Survey 2006, Final Report card or history results of 43 percent modified for recall bias to 48 percent based on 1st dose card or history coverage of 59 percent, 1st dose card only coverage of 33 percent and 3d dose card only coverage of 27 percent. DTP-HepB-Hib pentavalent vaccine introduced during April 2005. Estimate challenged by: S-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2007: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2008: Estimate based on coverage reported by national government. GoC=R+D+
- 2009: Estimate based on coverage reported by national government. GoC=R+D+
- 2010: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2011: Estimate based on coverage reported by national government. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. 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. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - RotaC



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	71
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	71
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	71
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.

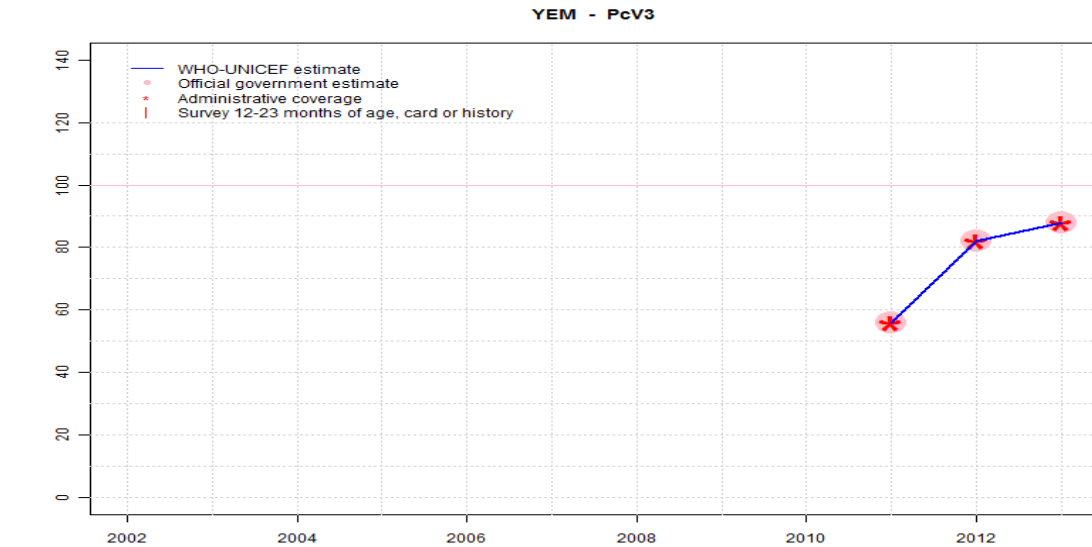
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2012: Estimate based on coverage reported by national government. Rotavirus vaccine was introduced in 2012. GoC=R+ D+

2013: Estimate based on coverage reported by national government. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - PcV3



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	82	88
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	●●	●	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	82	88
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	82	88
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. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Pneumococcal conjugate vaccine introduced in 2011. GoC=R+
- 2012: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2013: Estimate based on coverage reported by national government. WHO and UNICEF recommend a high quality survey to confirm reported levels of coverage. WHO and UNICEF are aware of the conduct of a DHS survey during 2013 and await the final results. Estimate challenged by: D-

Yemen - survey details

2005 Yemen Multiple Indicator Cluster Survey 2006, Final Report

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	67	12-23 m	721	48
BCG	Card	38	12-23 m	721	48
BCG	Card or History	69	12-23 m	721	48
BCG	History	31	12-23 m	721	48
DTP1	C or H <12 months	77	12-23 m	721	48
DTP1	Card	47	12-23 m	721	48
DTP1	Card or History	78	12-23 m	721	48
DTP1	History	32	12-23 m	721	48
DTP3	C or H <12 months	60	12-23 m	721	48
DTP3	Card	39	12-23 m	721	48
DTP3	Card or History	61	12-23 m	721	48
DTP3	History	22	12-23 m	721	48
HepB1	C or H <12 months	26	12-23 m	721	48
HepB1	Card	12	12-23 m	721	48
HepB1	Card or History	28	12-23 m	721	48
HepB1	History	16	12-23 m	721	48
HepB3	C or H <12 months	19	12-23 m	721	48
HepB3	Card	9	12-23 m	721	48
HepB3	Card or History	19	12-23 m	721	48
HepB3	History	11	12-23 m	721	48
Hib1	C or H <12 months	57	12-23 m	721	48
Hib1	Card	33	12-23 m	721	48
Hib1	Card or History	59	12-23 m	721	48
Hib1	History	26	12-23 m	721	48

Hib3	C or H <12 months	40	12-23 m	721	48
Hib3	Card	27	12-23 m	721	48
Hib3	Card or History	43	12-23 m	721	48
Hib3	History	16	12-23 m	721	48
MCV	C or H <12 months	59	12-23 m	721	48
MCV	Card	31	12-23 m	721	48
MCV	Card or History	65	12-23 m	721	48
MCV	History	34	12-23 m	721	48
Pol1	C or H <12 months	79	12-23 m	721	48
Pol1	Card	45	12-23 m	721	48
Pol1	Card or History	81	12-23 m	721	48
Pol1	History	36	12-23 m	721	48
Pol3	C or H <12 months	60	12-23 m	721	48
Pol3	Card	36	12-23 m	721	48
Pol3	Card or History	63	12-23 m	721	48
Pol3	History	27	12-23 m	721	48

2002 The Family Health Survey in the Republic of Yemen 2003

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	55	12-23 m	2058	27
DTP1	Card	56	12-23 m	2058	27
DTP3	Card	45	12-23 m	2058	27
MCV	Card	45	12-23 m	2058	27
Pol1	Card	62	12-23 m	2058	27
Pol3	Card	47	12-23 m	2058	27

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

Yemen

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	68
2003	65
2004	69
2005	59
2006	56
2007	52
2008	63
2009	66
2010	66
2011	66
2012	66
2013	70

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.