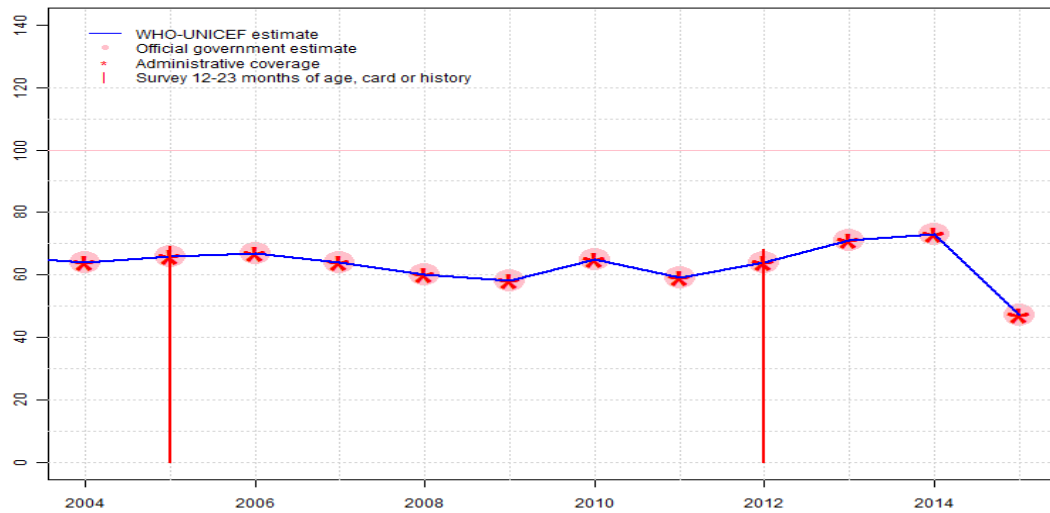


Yemen - BCG

YEM - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	64	66	67	64	60	58	65	59	64	71	73	47
Estimate GoC	•	•	•	•	••	••	•••	•••	•••	•••	•••	••
Official	64	66	67	64	60	58	65	59	64	71	73	47
Administrative	64	66	67	64	60	58	65	59	64	71	73	47
Survey	NA	69	NA	NA	NA	NA	NA	NA	68	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: 2015 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.

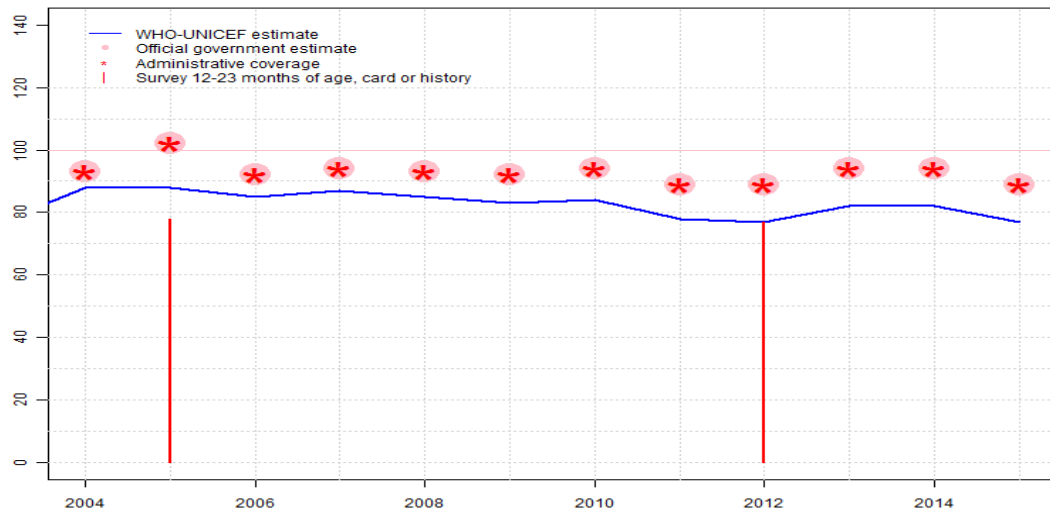
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 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+ S+ 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+ S+ D+
- 2012: Estimate based on coverage reported by national government supported by survey. Survey evidence of 68 percent based on 1 survey(s). GoC=R+ S+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ S+ D+
- 2015: Estimate based on coverage reported by national government. Programme reports national level stock-out of 6 months. GoC=R+ D+

Yemen - DTP1

YEM - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	88	88	85	87	85	83	84	78	77	82	82	77
Estimate GoC	•	•	•	•	••	•	•	•	•	•	•	•
Official	93	102	92	94	93	92	94	89	89	94	94	89
Administrative	93	102	92	94	93	92	94	89	89	94	94	89
Survey	NA	78	NA	NA	NA	NA	NA	NA	77	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: 2015 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:

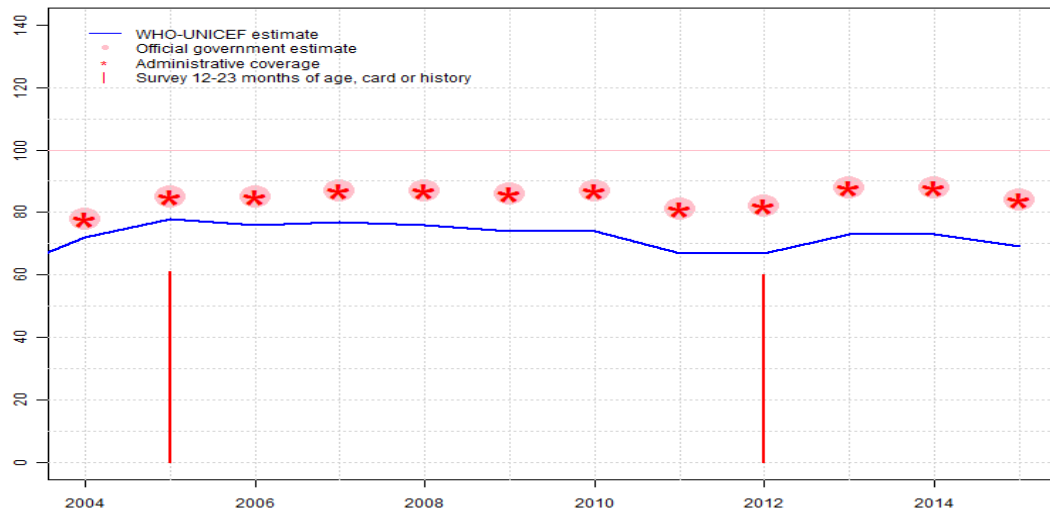
- 2004: Reported data calibrated to 1999 and 2012 levels. Estimate of 88 percent changed from previous revision value of 93 percent. Estimate challenged by: S-
- 2005: Reported data calibrated to 1999 and 2012 levels. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working 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 of 88 percent changed from previous revision value of 93 percent. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 1999 and 2012 levels. Estimate of 85 percent changed from previous revision value of 92 percent. Estimate challenged by: S-
- 2007: Reported data calibrated to 1999 and 2012 levels. Estimate of 87 percent changed from previous revision value of 94 percent. Estimate challenged by: S-
- 2008: Reported data calibrated to 1999 and 2012 levels. Estimate of 85 percent changed from previous revision value of 93 percent. GoC=D+
- 2009: Reported data calibrated to 1999 and 2012 levels. Estimate of 83 percent changed from previous revision value of 92 percent. Estimate challenged by: D-
- 2010: Reported data calibrated to 1999 and 2012 levels. Estimate of 84 percent changed from previous revision value of 94 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 1999 and 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 78 percent changed from previous revision value of 89 percent. Estimate challenged by: D-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 77 percent based on 1 survey(s). Estimate of 77 percent changed from previous revision value of 89 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 82 percent changed from previous revision value of 94 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Estimate of 82 percent changed from previous revision value of 94 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other

Yemen - DTP1

health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - DTP3

YEM - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	72	78	76	77	76	74	74	67	67	73	73	69
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	78	85	85	87	87	86	87	81	82	88	88	84
Administrative	78	85	85	87	87	86	87	81	82	88	88	84
Survey	NA	61	NA	NA	NA	NA	NA	NA	60	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: 2015 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:

- 2004: Reported data calibrated to 1998 and 2012 levels. Estimate of 72 percent changed from previous revision value of 78 percent. Estimate challenged by: S-
- 2005: Reported data calibrated to 1998 and 2012 levels. 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 of 78 percent changed from previous revision value of 85 percent. Estimate challenged by: S-
- 2006: Reported data calibrated to 1998 and 2012 levels. Disaggregated coverage data show 58 percent coverage through routine services and 27 percent coverage through outreach activities conducted over 5 rounds in 2006. Estimate of 76 percent changed from previous revision value of 85 percent. Estimate challenged by: S-
- 2007: Reported data calibrated to 1998 and 2012 levels. Disaggregated coverage data show 58 percent coverage through routine services and 27 percent coverage through outreach activities conducted over 6 rounds in 2007. Estimate of 77 percent changed from previous revision value of 87 percent. Estimate challenged by: S-
- 2008: Reported data calibrated to 1998 and 2012 levels. Disaggregated coverage data show 57 percent coverage through routine services and 30 percent coverage through outreach activities conducted over 4 rounds in 2008. Estimate of 76 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2009: Reported data calibrated to 1998 and 2012 levels. Disaggregated coverage data show 58 percent coverage through routine services and 28 percent coverage through outreach activities conducted over 4 rounds in 2009. Estimate of 74 percent changed from previous revision value of 86 percent. Estimate challenged by: D-
- 2010: Reported data calibrated to 1998 and 2012 levels. Disaggregated coverage data show 58 percent coverage through routine services and 28 percent coverage through outreach activities conducted over 4 rounds in 2010. Estimate of 74 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 1998 and 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 67 percent

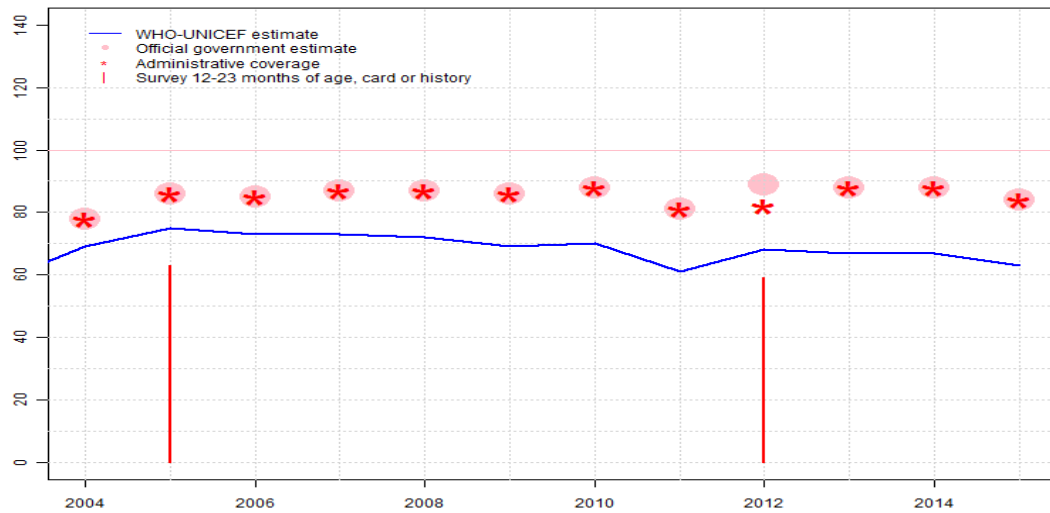
Yemen - DTP3

changed from previous revision value of 81 percent. Estimate challenged by: D-

- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 67 percent based on 1 survey(s). Yemen National Health and Demographic Survey, 2013 card or history results of 60 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 46 percent and 3d dose card only coverage of 40 percent. Estimate of 67 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 73 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Estimate of 73 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - Pol3

YEM - Pol3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	69	75	73	73	72	69	70	61	68	67	67	63
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	78	86	85	87	87	86	88	81	89	88	88	84
Administrative	78	86	85	87	87	86	88	81	82	88	88	84
Survey	NA	63	NA	NA	NA	NA	NA	NA	59	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: 2015 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:

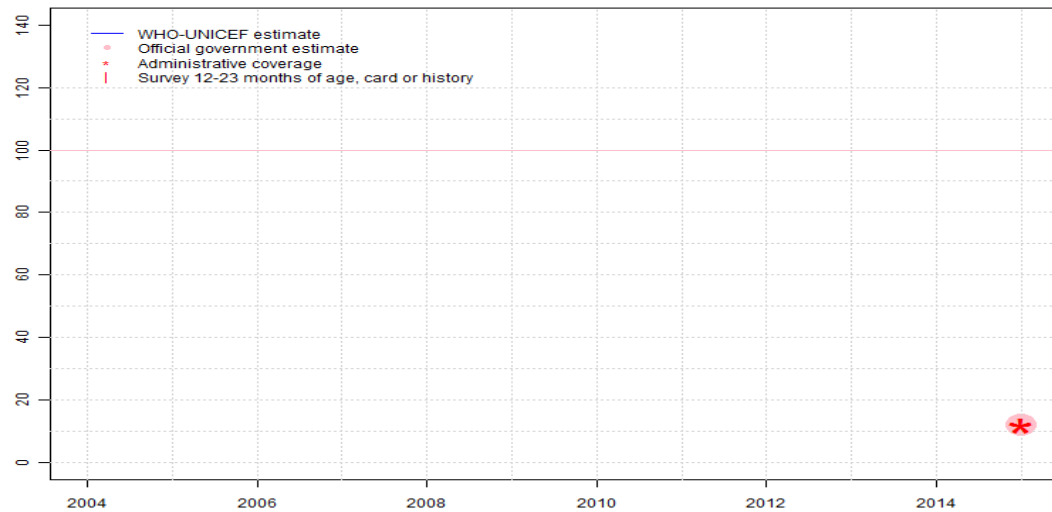
- 2004: Reported data calibrated to 1998 and 2012 levels. Estimate of 69 percent changed from previous revision value of 78 percent. Estimate challenged by: S-
- 2005: Reported data calibrated to 1998 and 2012 levels. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working 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 of 75 percent changed from previous revision value of 86 percent. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 1998 and 2012 levels. Estimate of 73 percent changed from previous revision value of 85 percent. Estimate challenged by: S-
- 2007: Reported data calibrated to 1998 and 2012 levels. Estimate of 73 percent changed from previous revision value of 87 percent. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 1998 and 2012 levels. Estimate of 72 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2009: Reported data calibrated to 1998 and 2012 levels. Estimate of 69 percent changed from previous revision value of 86 percent. Estimate challenged by: D-
- 2010: Reported data calibrated to 1998 and 2012 levels. Estimate of 70 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 1998 and 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 61 percent changed from previous revision value of 81 percent. Estimate challenged by: D-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 68 percent based on 1 survey(s). Yemen National Health and Demographic Survey, 2013 card or history results of 59 percent modified for recall bias to 68 percent based on 1st dose card or history coverage of 76 percent, 1st dose card only coverage of 46 percent and 3d dose card only coverage of 41 percent. Estimate of 68 percent changed from previous revision value of 89 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 67 percent changed from previous revision value of 88 percent. Estimate challenged by: D-

Yemen - Pol3

- 2014: Reported data calibrated to 2012 levels. Estimate of 67 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - IPV1

YEM - IPV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	●
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
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: 2015 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.

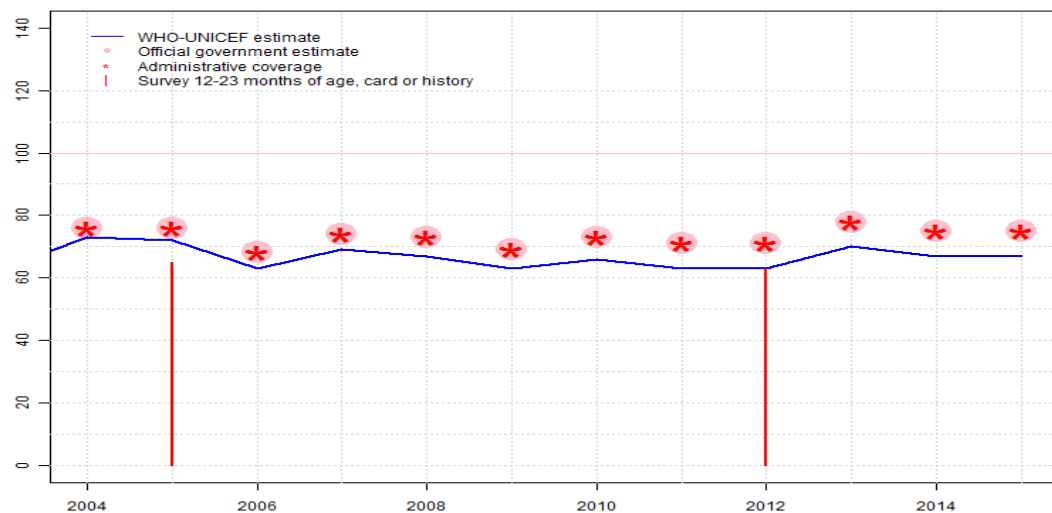
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

2015: Estimate based on coverage reported by national government. IPV introduced during November 2015. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. GoC=Assigned by working group. Consistency with other vaccines.

Yemen - MCV1

YEM - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	73	72	63	69	67	63	66	63	63	70	67	67
Estimate GoC	•	•	•	•	••	••	••	•	•	•	•	•
Official	76	76	68	74	73	69	73	71	71	78	75	75
Administrative	76	76	68	74	73	69	73	71	71	78	75	75
Survey	NA	65	NA	NA	NA	NA	NA	NA	63	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: 2015 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.

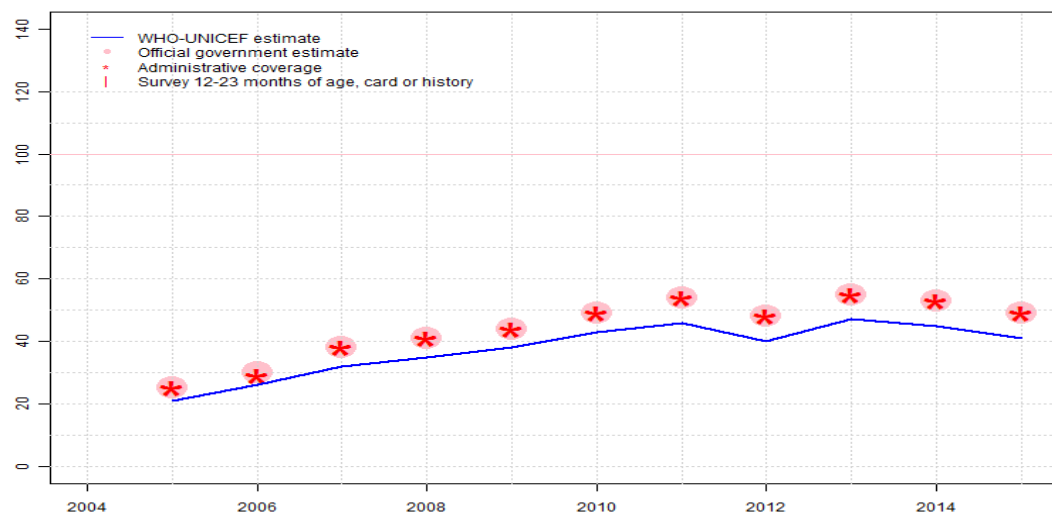
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Reported data calibrated to 1998 and 2012 levels. Estimate of 73 percent changed from previous revision value of 76 percent. Estimate challenged by: S-
- 2005: Reported data calibrated to 1998 and 2012 levels. 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 of 72 percent changed from previous revision value of 76 percent. Estimate challenged by: S-
- 2006: Reported data calibrated to 1998 and 2012 levels. Estimate of 63 percent changed from previous revision value of 68 percent. Estimate challenged by: S-
- 2007: Reported data calibrated to 1998 and 2012 levels. Estimate of 69 percent changed from previous revision value of 74 percent. Estimate challenged by: S-
- 2008: Reported data calibrated to 1998 and 2012 levels. Estimate of 67 percent changed from previous revision value of 73 percent. GoC=D+
- 2009: Reported data calibrated to 1998 and 2012 levels. Estimate of 63 percent changed from previous revision value of 69 percent. GoC=D+
- 2010: Reported data calibrated to 1998 and 2012 levels. Estimate of 66 percent changed from previous revision value of 73 percent. GoC=S+ D+
- 2011: Reported data calibrated to 1998 and 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 63 percent changed from previous revision value of 71 percent. Estimate challenged by: D-
- 2012: Estimate based on survey result. Estimate of 63 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 70 percent changed from previous revision value of 78 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Preliminary results from the 2013 DHS for the 2012 birth cohort suggest coverage of 63 percent for MCV1. Estimate of 67 percent changed from previous revision value of 75 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - MCV2

YEM - MCV2



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	21	26	32	35	38	43	46	40	47	45	41
Estimate GoC	NA	•	•	•	••	••	••	•	•	•	•	•
Official	NA	25	30	38	41	44	49	54	48	55	53	49
Administrative	NA	25	29	38	41	44	49	54	48	55	53	49
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: 2015 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 is based on adjustment to reported coverage level based on difference between estimated and reported coverage levels for MCV1. Estimate of 21 percent changed from previous revision value of 25 percent. Estimate challenged by: R-S-

2006: Reported data calibrated to 2005 and 2012 levels. Estimate of 26 percent changed from previous revision value of 30 percent. Estimate challenged by: S-

2007: Reported data calibrated to 2005 and 2012 levels. Estimate of 32 percent changed from previous revision value of 38 percent. Estimate challenged by: S-

2008: Reported data calibrated to 2005 and 2012 levels. Estimate of 35 percent changed from previous revision value of 41 percent. GoC=D+

2009: Reported data calibrated to 2005 and 2012 levels. Estimate of 38 percent changed from previous revision value of 44 percent. GoC=D+

2010: Reported data calibrated to 2005 and 2012 levels. Estimate of 43 percent changed from previous revision value of 49 percent. GoC=D+

2011: Reported data calibrated to 2005 and 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 46 percent changed from previous revision value of 54 percent. Estimate challenged by: D-

2012: Estimate is based on adjustment to reported coverage level based on difference between estimated and reported coverage levels for MCV1. Estimate of 40 percent changed from previous revision value of 48 percent. Estimate challenged by: D-R-

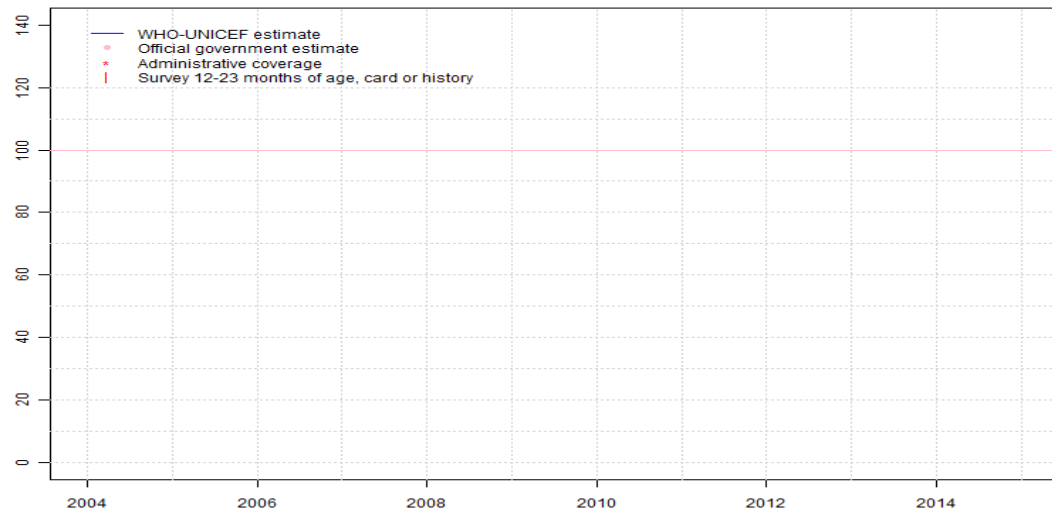
2013: Reported data calibrated to 2012 levels. Estimate of 47 percent changed from previous revision value of 55 percent. Estimate challenged by: D-

2014: Reported data calibrated to 2012 levels. Estimate of 45 percent changed from previous revision value of 53 percent. Estimate challenged by: D-

2015: Reported data calibrated to 2012 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - RCV1

YEM - RCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67
Estimate GoC	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: 2015 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.

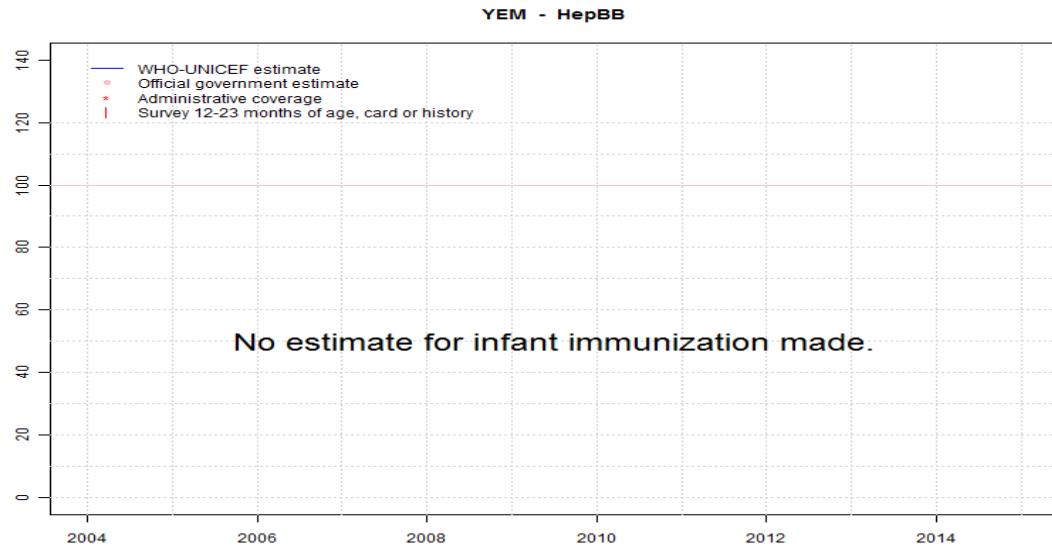
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

For this revision, coverage estimates for the first dose of rubella containing vaccine are based on WHO and UNICEF estimates of coverage of measles containing vaccine. Nationally reported coverage of rubella containing vaccine is not taken into consideration nor are they represented in the accompanying graph and data table.

2015: Estimate based on estimated MCV1. Rubella containing vaccine introduced during 2015 using measles rubella combination vaccine. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - HepBB



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
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

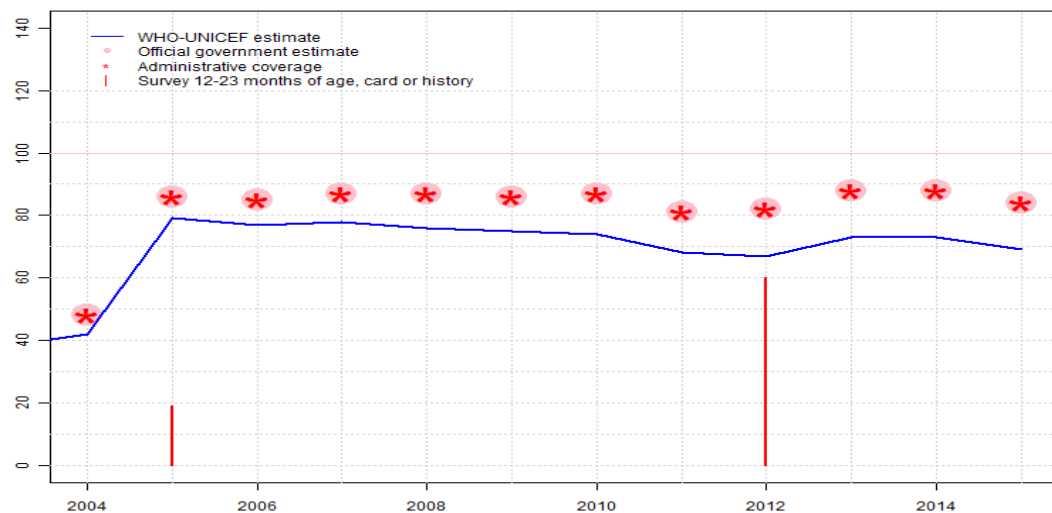
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability 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: 2015 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

YEM - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	42	79	77	78	76	75	74	68	67	73	73	69
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	48	86	85	87	87	86	87	81	82	88	88	84
Administrative	48	86	85	87	87	86	87	81	82	88	88	84
Survey	NA	19	NA	NA	NA	NA	NA	NA	60	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: 2015 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:

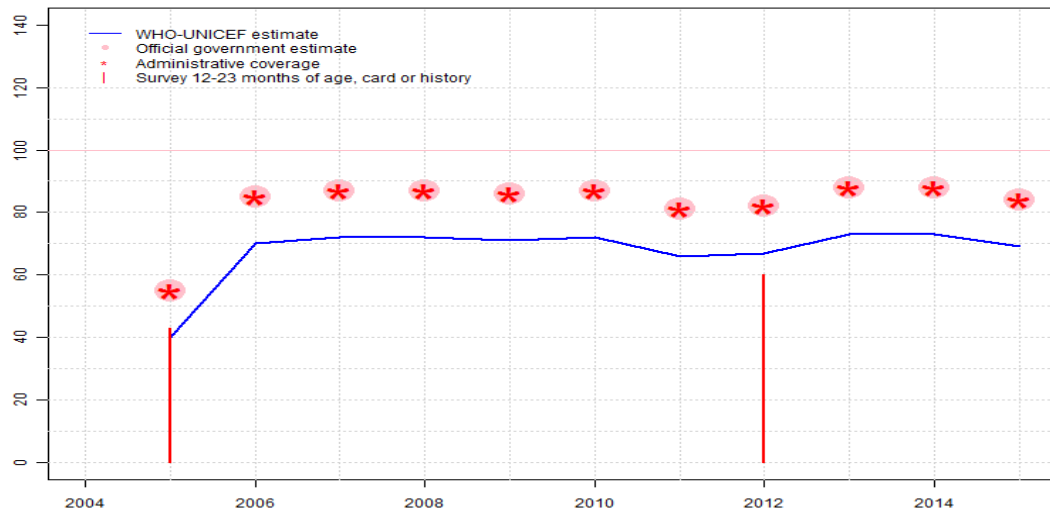
- 2004: Reported data calibrated to 1999 and 2012 levels. Estimate of 42 percent changed from previous revision value of 48 percent. Estimate challenged by: S-
- 2005: Reported data calibrated to 1999 and 2012 levels. Yemen Multiple Indicator Cluster Survey 2006, Final Report results ignored by working 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 of 79 percent changed from previous revision value of 86 percent. Estimate challenged by: S-
- 2006: Reported data calibrated to 1999 and 2012 levels. Estimate of 77 percent changed from previous revision value of 85 percent. Estimate challenged by: S-
- 2007: Reported data calibrated to 1999 and 2012 levels. Estimate of 78 percent changed from previous revision value of 87 percent. Estimate challenged by: S-
- 2008: Reported data calibrated to 1999 and 2012 levels. Estimate of 76 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2009: Reported data calibrated to 1999 and 2012 levels. Estimate of 75 percent changed from previous revision value of 86 percent. Estimate challenged by: D-
- 2010: Reported data calibrated to 1999 and 2012 levels. Estimate of 74 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 1999 and 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 68 percent changed from previous revision value of 81 percent. Estimate challenged by: D-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 67 percent based on 1 survey(s). Yemen National Health and Demographic Survey, 2013 card or history results of 60 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 46 percent and 3d dose card only coverage of 40 percent. Estimate of 67 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 73 percent changed

Yemen - HepB3

from previous revision value of 88 percent. Estimate challenged by: D-
2014: Reported data calibrated to 2012 levels. Estimate of 73 percent changed
from previous revision value of 88 percent. Estimate challenged by: D-
2015: Reported data calibrated to 2012 levels. Estimate challenged by: D-

Yemen - Hib3

YEM - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	40	70	72	71	72	66	67	73	73	69	69
Estimate GoC	NA	●	●	●	●	●	●	●	●	●	●	●
Official	NA	55	85	87	87	86	87	81	82	88	88	84
Administrative	NA	55	85	87	87	86	87	81	82	88	88	84
Survey	NA	43	NA	NA	NA	NA	NA	NA	60	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: 2015 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.

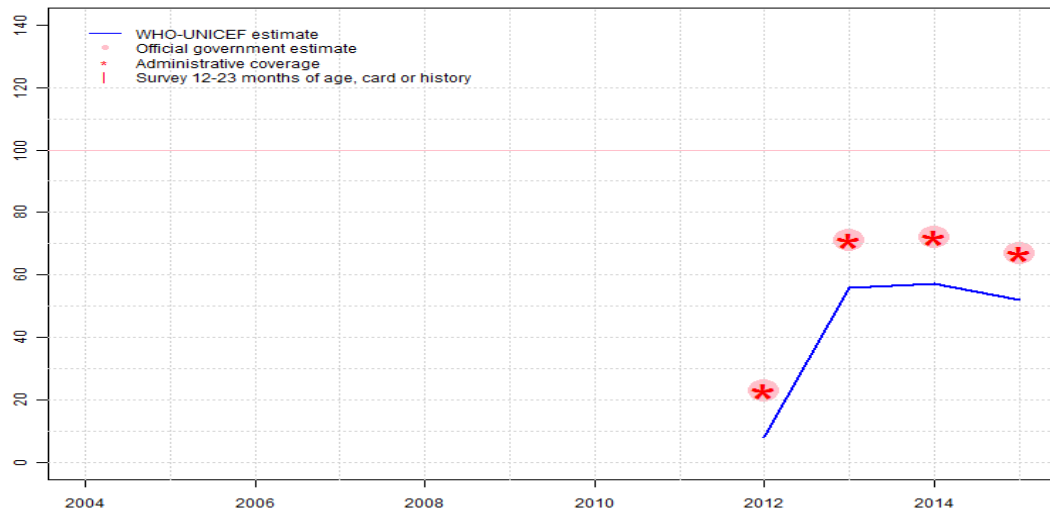
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2005: Reported data calibrated to 2012 levels. 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 of 40 percent changed from previous revision value of 55 percent. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2012 levels. Estimate of 70 percent changed from previous revision value of 85 percent. Estimate challenged by: D-S-
- 2007: Reported data calibrated to 2012 levels. Estimate of 72 percent changed from previous revision value of 87 percent. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 2012 levels. Estimate of 72 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2009: Reported data calibrated to 2012 levels. Estimate of 71 percent changed from previous revision value of 86 percent. Estimate challenged by: D-
- 2010: Reported data calibrated to 2012 levels. Estimate of 72 percent changed from previous revision value of 87 percent. Estimate challenged by: D-
- 2011: Reported data calibrated to 2012 levels. Decline in immunization coverage partially due to disruptions in immunization delivery due to the political disturbances and prevailing insecurity. Estimate of 66 percent changed from previous revision value of 81 percent. Estimate challenged by: D-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 67 percent based on 1 survey(s). Yemen National Health and Demographic Survey, 2013 card or history results of 60 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 46 percent and 3d dose card only coverage of 40 percent. Estimate of 67 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 73 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Estimate of 73 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Estimate challenged by: D-

Yemen - RotaC

YEM - RotaC



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	8	56	57	52
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	23	71	72	67
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	23	71	72	67
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: 2015 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.

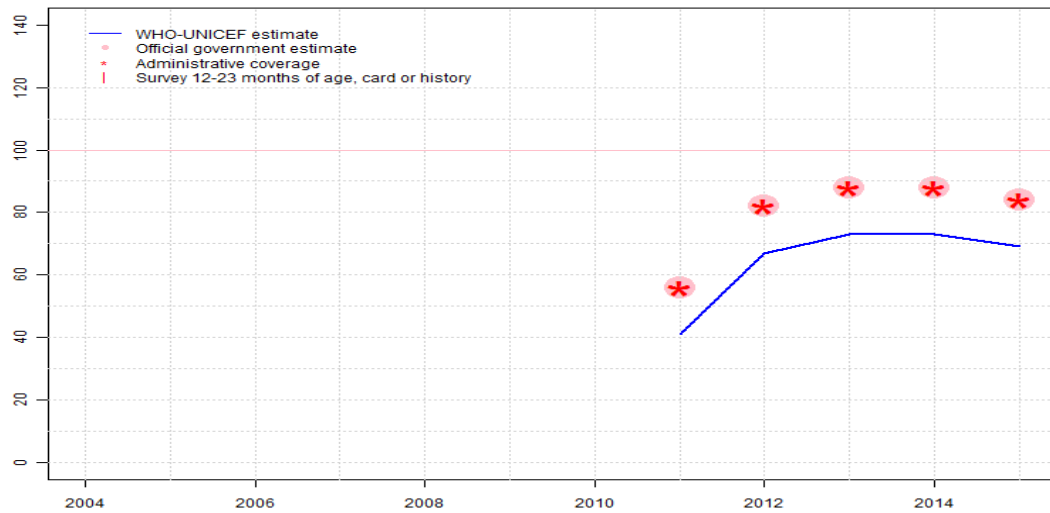
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2012: Reported data calibrated to 2013 levels. Rotavirus vaccine was introduced in 2012. Estimate of 8 percent changed from previous revision value of 23 percent. GoC=Assigned by working group. Introduction period.
- 2013: Estimate is based on adjustment to reported coverage level based on difference between estimated and reported coverage levels for DTP3. Estimate of 56 percent changed from previous revision value of 71 percent. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2013 levels. Estimate of 57 percent changed from previous revision value of 72 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2013 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - PcV3

YEM - PcV3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	41	67	73	73	69
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	•	•	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	56	82	88	88	84
Administrative	NA	NA	NA	NA	NA	NA	NA	56	82	88	88	84
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: 2015 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: Reported data calibrated to 2012 levels. 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. Estimate of 41 percent changed from previous revision value of 56 percent. GoC=Assigned by working group. Introduction period.
- 2012: Estimate is based on adjustment to reported coverage level based on difference between estimated and reported coverage levels for DTP3. Estimate of 67 percent changed from previous revision value of 82 percent. Estimate challenged by: D-R-
- 2013: Reported data calibrated to 2012 levels. Estimate of 73 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Estimate of 73 percent changed from previous revision value of 88 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Government reports that official estimates are derived from the administrative coverage. Civil unrest began in February-March 2015 but exceptionally does not appear to have impacted delivery of immunization services in spite of disruptions to other health areas. Programme reports that vaccination sites continue to send monthly reports to the district. Estimate challenged by: D-

Yemen - survey details

2012 Yemen National Health and Demographic Survey, 2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	67	12-23 m	3028	47
BCG	Card	40	12-23 m	1427	47
BCG	Card or History	68	12-23 m	3028	47
BCG	History	27	12-23 m	1601	47
DTP1	C or H <12 months	75	12-23 m	3028	47
DTP1	Card	46	12-23 m	1427	47
DTP1	Card or History	77	12-23 m	3028	47
DTP1	History	31	12-23 m	1601	47
DTP3	C or H <12 months	58	12-23 m	3028	47
DTP3	Card	40	12-23 m	1427	47
DTP3	Card or History	60	12-23 m	3028	47
DTP3	History	19	12-23 m	1601	47
HepB1	C or H <12 months	75	12-23 m	3028	47
HepB1	Card	46	12-23 m	1427	47
HepB1	Card or History	77	12-23 m	3028	47
HepB1	History	31	12-23 m	1601	47
HepB3	C or H <12 months	58	12-23 m	3028	47
HepB3	Card	40	12-23 m	1427	47
HepB3	Card or History	60	12-23 m	3028	47
HepB3	History	19	12-23 m	1601	47
Hib1	C or H <12 months	75	12-23 m	3028	47
Hib1	Card	46	12-23 m	1427	47
Hib1	Card or History	77	12-23 m	3028	47
Hib1	History	31	12-23 m	1601	47
Hib3	C or H <12 months	58	12-23 m	3028	47
Hib3	Card	40	12-23 m	1427	47
Hib3	Card or History	60	12-23 m	3028	47
Hib3	History	19	12-23 m	1601	47
MCV1	C or H <12 months	51	12-23 m	3028	47
MCV1	Card	39	12-23 m	1427	47
MCV1	Card or History	63	12-23 m	3028	47
MCV1	History	24	12-23 m	1601	47
PcV1	Card	44	12-23 m	1427	47
PcV1	Card < 12 months	43	12-23 m	3028	47
PcV3	Card	38	12-23 m	1427	47
PcV3	Card < 12 months	37	12-23 m	3028	47
Pol1	C or H <12 months	74	12-23 m	3028	47

Pol1	Card	46	12-23 m	1427	47
Pol1	Card or History	76	12-23 m	3028	47
Pol1	History	30	12-23 m	1601	47
Pol3	C or H <12 months	57	12-23 m	3028	47
Pol3	Card	41	12-23 m	1427	47
Pol3	Card or History	59	12-23 m	3028	47
Pol3	History	18	12-23 m	1601	47

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

Yemen - survey details

Hib3	History	16	12-23 m	721	48
MCV1	C or H <12 months	59	12-23 m	721	48
MCV1	Card	31	12-23 m	721	48
MCV1	Card or History	65	12-23 m	721	48
MCV1	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
MCV1	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 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

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 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 (%)
2004	69
2005	59
2006	56
2007	52
2008	63
2009	66
2010	66
2011	66
2012	66
2013	70
2014	70
2015	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.