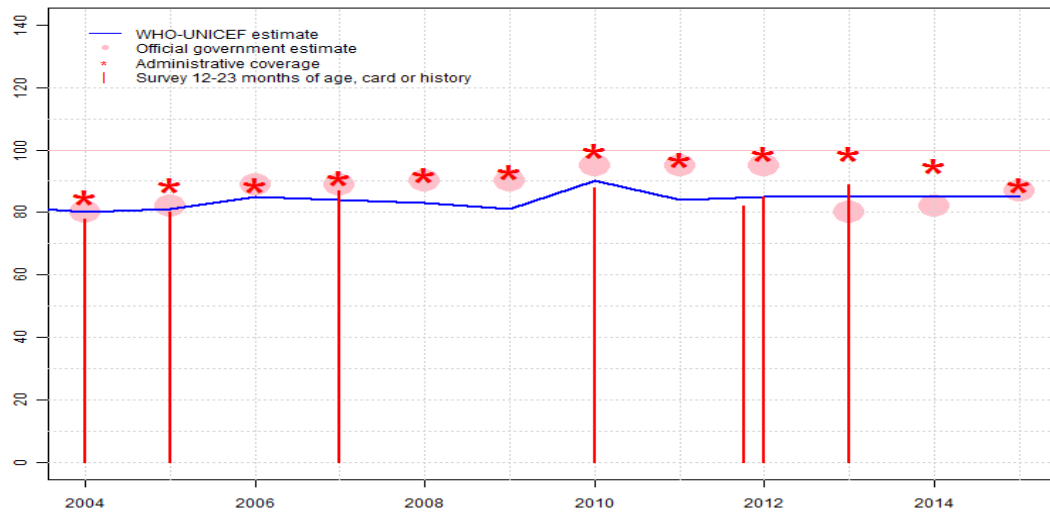


# Pakistan - BCG

PAK - BCG



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	80	81	85	84	83	81	90	84	85	85	85	85
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	80	82	89	89	90	90	95	95	95	80	82	87
Administrative	85	89	89	91	92	93	100	97	99	99	95	89
Survey	78	80	NA	87	NA	NA	88	NA	*	89	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 supported by survey. Survey evidence of 78 percent based on 1 survey(s). Estimate challenged by: D-S-
- 2005: Reported data calibrated to 2004 and 2012 levels. Pakistan Demographic and Health Survey 2006-07 results ignored by working group. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,280. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2007: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2008-2009 results ignored by working group. Card retention not reported. Card only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2009: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2010: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2010-2011 results ignored by working group. Home-based record retention not reported. HBR only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9). Methodology for adjusted national estimates unclear. Estimate challenged by: D-S-
- 2011: Reported data calibrated to 2004 and 2012 levels. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-S-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 85 percent based on 1 survey(s). Survey results ignored. Sample size 0 less than 300. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Reported data excluded. Adjustments used to derive

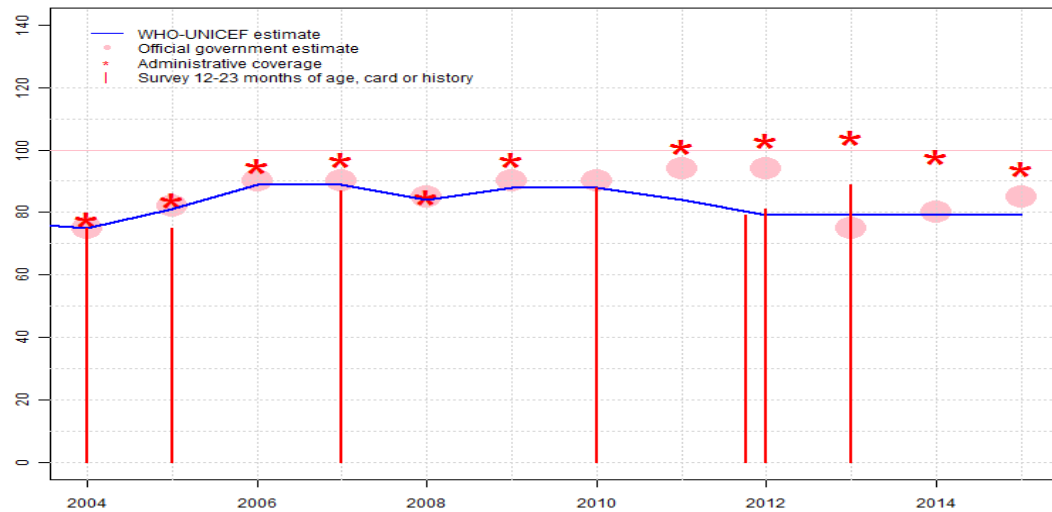
official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate challenged by: D-

2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate challenged by: D-

2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Programme reports three month national level stock-out of BCG vaccine. Estimate challenged by: D-

# Pakistan - DTP1

PAK - DTP1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	75	81	89	89	84	88	88	84	79	79	79	79
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	75	82	90	90	85	90	90	94	75	80	85	85
Administrative	78	84	95	97	85	97	NA	101	103	104	98	94
Survey	75	75	NA	87	NA	NA	88	NA	*	89	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:

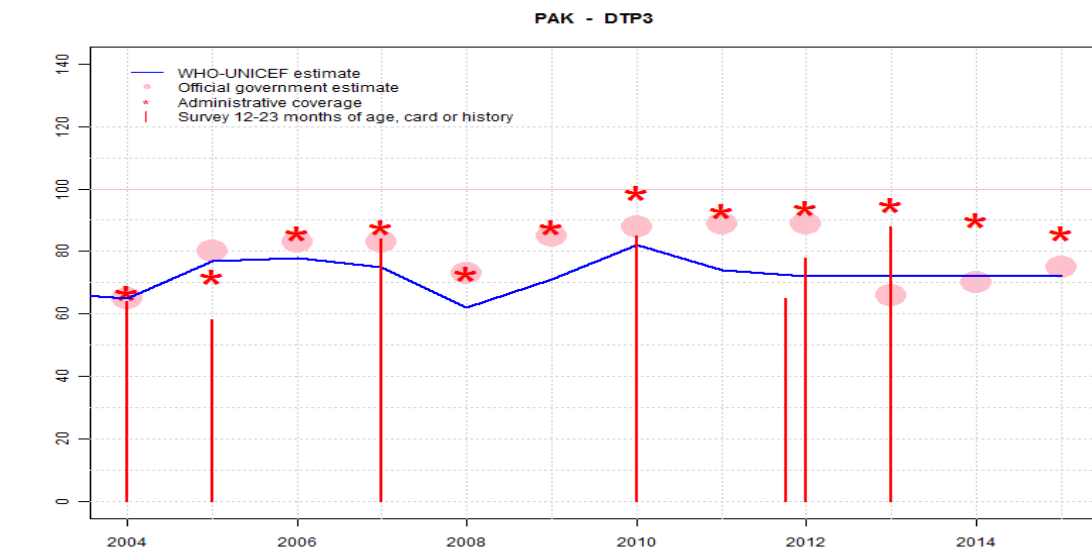
- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 75 percent based on 1 survey(s). Estimate challenged by: D-S-
- 2005: Reported data calibrated to 2004 and 2010 levels. Pakistan Demographic and Health Survey 2006-07 results ignored by working group. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,280. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2004 and 2010 levels. Estimate challenged by: D-S-
- 2007: Reported data calibrated to 2004 and 2010 levels. Pakistan Social and Living Standards Measurement Survey 2008-2009 results ignored by working group. Card retention not reported. Card only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 2004 and 2010 levels. Estimate challenged by: D-S-
- 2009: Reported data calibrated to 2004 and 2010 levels. Estimate challenged by: D-S-
- 2010: Estimate is based on survey results. Pakistan Social and Living Standards Measurement Survey 2010-2011 results ignored by working group. Home-based record retention not reported. HBR only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Methodology for adjusted national estimates unclear. Estimate challenged by: S-
- 2011: Reported data calibrated to 2010 and 2012 levels. Reported data excluded. 101 percent greater than 100 percent. Methodology for adjusted national estimates unclear. Estimate challenged by: D-S-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 79 percent based on 1 survey(s). Survey results ignored. Sample size 0 less than 300. Reported data excluded. 103 percent greater than 100 percent. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimate challenged by: D-R-S-
- 2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported

number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate challenged by: D-

2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate challenged by: D-

2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-

# Pakistan - DTP3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	65	77	78	75	62	71	82	74	72	72	72	72
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	65	80	83	83	73	85	88	89	89	66	70	75
Administrative	67	72	86	88	73	88	99	93	94	95	90	86
Survey	64	58	NA	84	NA	NA	85	NA	*	88	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.

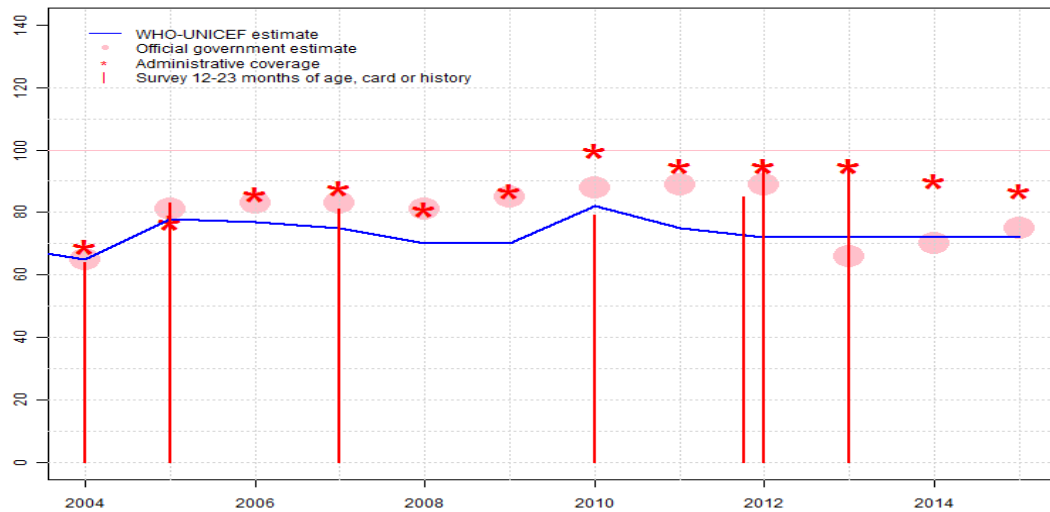
## Description:

- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 68 percent based on 1 survey(s). EPI Coverage Evaluation Survey, Draft Report, Pakistan 2006 card or history results of 64 percent modified for recall bias to 68 percent based on 1st dose card or history coverage of 75 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 9 percent. Estimate challenged by: D-S-
- 2005: Reported data calibrated to 2004 and 2012 levels. Pakistan Demographic and Health Survey 2006-07 results ignored by working group. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,280. Pakistan Demographic and Health Survey 2006-07 card or history results of 58 percent modified for recall bias to 68 percent based on 1st dose card or history coverage of 75 percent, 1st dose card only coverage of 23 percent and 3d dose card only coverage of 21 percent. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2007: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2008-2009 results ignored by working group. Card retention not reported. Card only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Pakistan Social and Living Standards Measurement Survey 2008-2009 card or history results of 84 percent modified for recall bias to 85 percent based on 1st dose card or history coverage of 87 percent, 1st dose card only coverage of 52 percent and 3d dose card only coverage of 51 percent. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 2004 and 2012 levels. Supplies of DTP-HepB vaccine were available until mid-2008 when DTP-HepB-Hib pentavalent vaccine introduction was planned. Introduction of pentavalent vaccine was postponed because of delays in transfer of funds by GAVI secretariat resulting in a decline Estimate challenged by: D-S-
- 2009: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2010: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2010-2011 results ignored by working group. Home-based record retention not reported. HBR only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Pakistan Social and Living Standards Measurement Survey 2010-2011 card or history results of 85 percent modified for recall bias to 86 percent based on 1st dose card or history coverage of 88 percent, 1st dose card

- only coverage of 57 percent and 3d dose card only coverage of 56 percent. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9). Methodology for adjusted national estimates unclear. Estimate challenged by: D-S-
- 2011: Reported data calibrated to 2004 and 2012 levels. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-S-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 72 percent based on 1 survey(s). Survey results ignored. Sample size 0 less than 300. Pakistan Demographic and Health Survey 2012-2013 card or history results of 65 percent modified for recall bias to 72 percent based on 1st dose card or history coverage of 79 percent, 1st dose card only coverage of 35 percent and 3d dose card only coverage of 32 percent. Pakistan Social and Living Standards Measurement Survey (PSLM), 2013-14 card or history results of 78 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 81 percent, 1st dose card only coverage of 62 percent and 3d dose card only coverage of 61 percent. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Pakistan Social and Living Standards Measurement Survey (PSLM), 2014-15 card or history results of 88 percent modified for recall bias to 89 percent based on 1st dose card or history coverage of 89 percent, 1st dose card only coverage of 65 percent and 3d dose card only coverage of 65 percent. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate of 72 percent changed from previous revision value of 73 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate of 72

- percent changed from previous revision value of 73 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-

PAK - Pol3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	65	78	77	75	70	70	82	75	72	72	72	72
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	65	81	83	83	81	85	88	89	89	66	70	75
Administrative	69	77	86	88	81	87	100	95	95	95	90	87
Survey	64	83	NA	81	NA	NA	79	NA	*	97	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 is based on DTP3 coverage level. EPI Coverage Evaluation Survey, Draft Report, Pakistan 2006 card or history results of 64 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 74 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 9 percent. Estimate challenged by: D-S-
- 2005: Reported data calibrated to 2004 and 2012 levels. Pakistan Demographic and Health Survey 2006-07 results ignored by working group. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,280. Pakistan Demographic and Health Survey 2006-07 card or history results of 83 percent modified for recall bias to 85 percent based on 1st dose card or history coverage of 93 percent, 1st dose card only coverage of 23 percent and 3d dose card only coverage of 21 percent. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2007: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2008-2009 results ignored by working group. Card retention not reported. Card only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2009: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2010: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2010-2011 results ignored by working group. Home-based record retention not reported. HBR only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Pakistan Social and Living Standards Measurement Survey 2010-2011 card or history results of 79 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 81 percent, 1st dose card only coverage of 54 percent and 3d dose card only coverage of 53 percent. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9). Methodology for adjusted national estimates unclear. Estimate challenged by: D-S-
- 2011: Reported data calibrated to 2004 and 2012 levels. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-S-
- 2012: Estimated is based on DTP3 coverage level. Survey results ignored. Sample



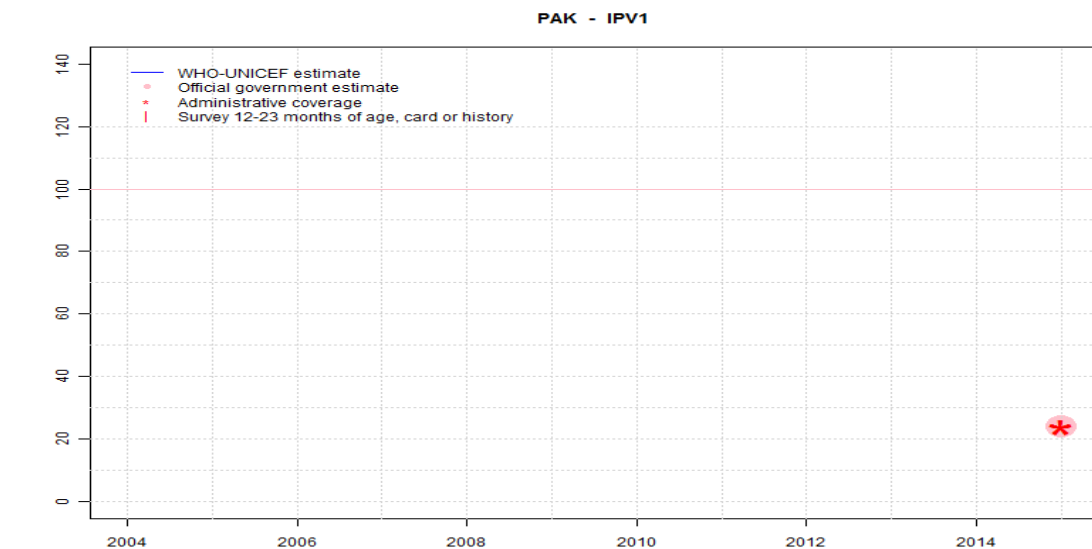
size 0 less than 300. Pakistan Demographic and Health Survey 2012-2013 results ignored by working group. Survey results likely reflect doses received during campaigns. Pakistan Social and Living Standards Measurement Survey (PSLM), 2013-14 results ignored by working group. Survey results likely reflect doses received during campaigns. Pakistan Demographic and Health Survey 2012-2013 card or history results of 85 percent modified for recall bias to 87 percent based on 1st dose card or history coverage of 92 percent, 1st dose card only coverage of 35 percent and 3d dose card only coverage of 33 percent. Pakistan Social and Living Standards Measurement Survey (PSLM), 2013-14 card or history results of 96 percent modified for recall bias to 98 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 62 percent and 3d dose card only coverage of 62 percent. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-

2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Pakistan Social and Living Standards Measurement Survey (PSLM), 2014-15 card or history results of 97 percent modified for recall bias to 98 percent based on 1st dose card or history coverage of 98 percent, 1st dose card only coverage of 65 percent and 3d dose card only coverage of 65 percent. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate challenged by: D-S-

2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate challenged by: D-S-

2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-

# Pakistan - 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	20
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	24
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24
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.

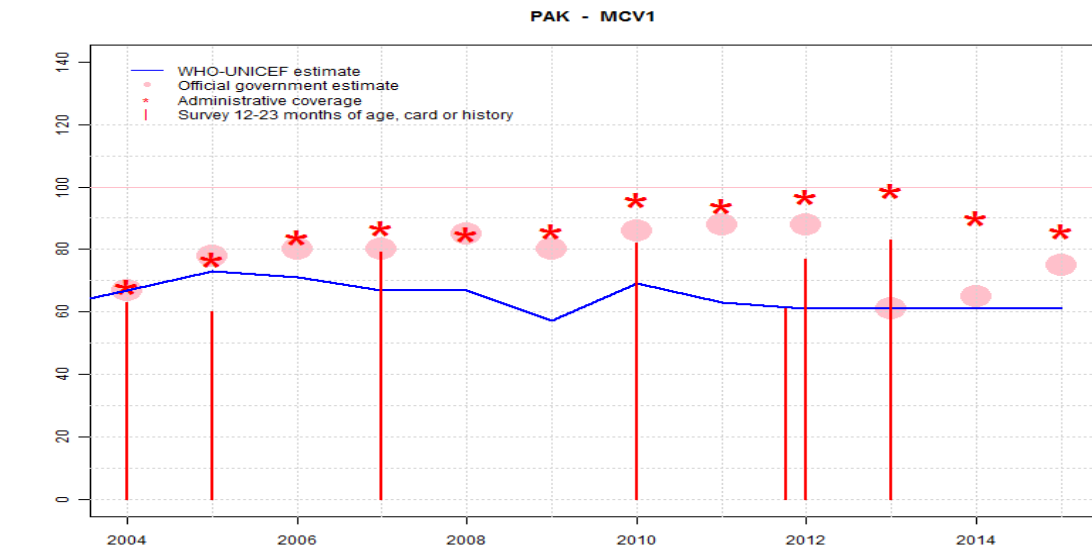
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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: IPV introduced during 2015. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: R-

# Pakistan - MCV1



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	67	73	71	67	67	57	69	63	61	61	61	61
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	67	78	80	80	85	80	86	88	88	61	65	75
Administrative	68	77	84	87	85	86	96	94	97	99	90	86
Survey	63	60	NA	79	NA	NA	82	NA	*	83	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:

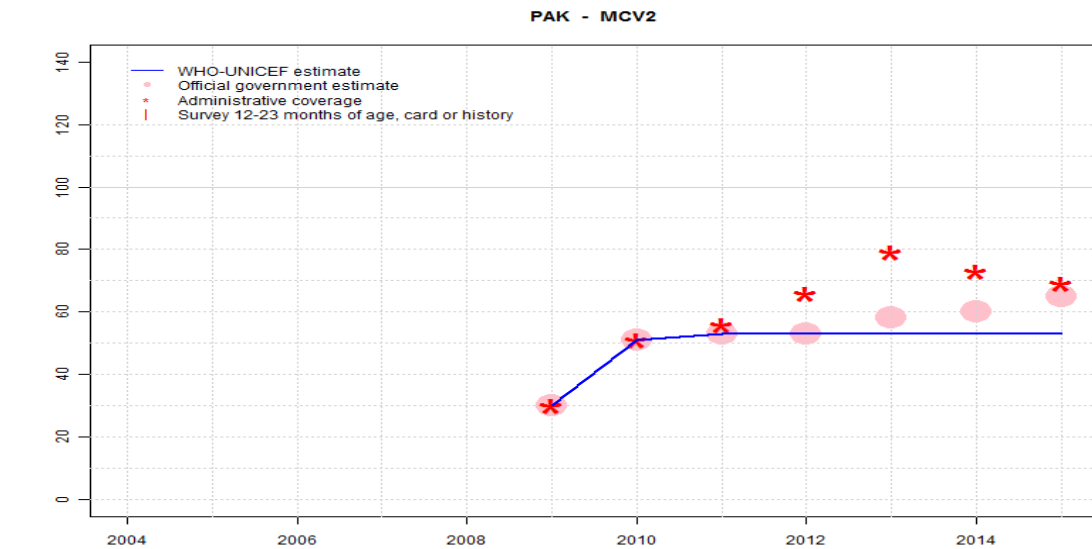
- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 63 percent based on 1 survey(s). Estimate challenged by: D-S-
- 2005: Reported data calibrated to 2004 and 2012 levels. Pakistan Demographic and Health Survey 2006-07 results ignored by working group. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,280. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2007: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2008-2009 results ignored by working group. Card retention not reported. Card only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Estimate challenged by: D-S-
- 2008: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2009: Reported data calibrated to 2004 and 2012 levels. Estimate challenged by: D-S-
- 2010: Reported data calibrated to 2004 and 2012 levels. Pakistan Social and Living Standards Measurement Survey 2010-2011 results ignored by working group. Home-based record retention not reported. HBR only coverage inconsistent with card retention levels and maximum possible card only coverage observed in two surveys during 2006 and one survey in 2012-13. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9). Methodology for adjusted national estimates unclear. Estimate challenged by: D-S-
- 2011: Reported data calibrated to 2004 and 2012 levels. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-S-
- 2012: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 61 percent based on 1 survey(s). Survey results ignored. Sample size 0 less than 300. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Reported data excluded. Adjustments used to derive

official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate of 61 percent changed from previous revision value of 63 percent. Estimate challenged by: D-

2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate of 61 percent changed from previous revision value of 63 percent. Estimate challenged by: D-

2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-

# Pakistan - MCV2



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	30	51	53	53	53	53	53
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	30	51	53	53	58	60	65
Administrative	NA	NA	NA	NA	NA	30	51	56	66	79	73	69
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.

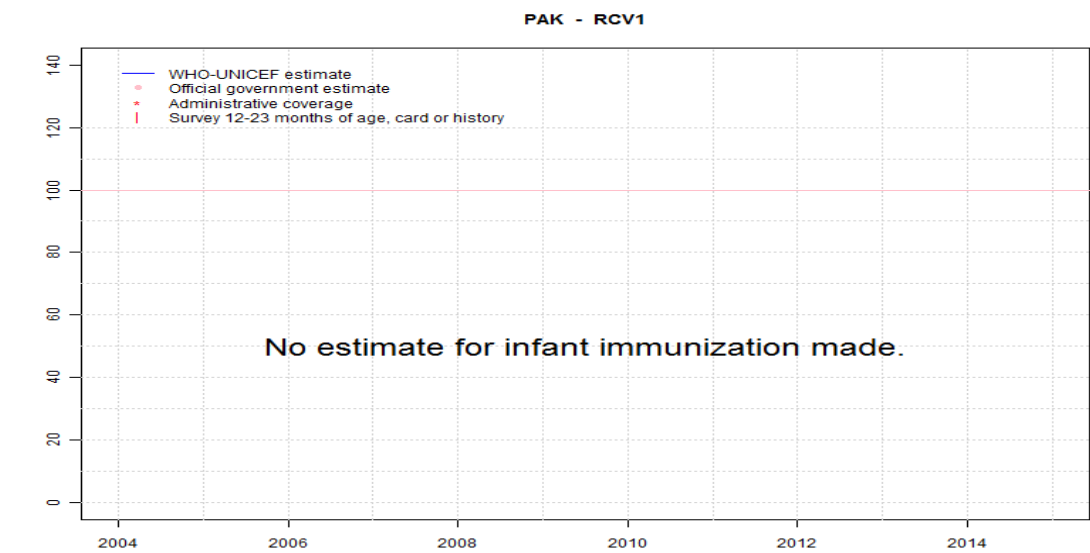
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk 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.

- 2009: Estimate based on coverage reported by national government. Estimate challenged by: S-
- 2010: Estimate based on reported administrative estimate. Methodology for adjusted national estimates unclear. Estimate challenged by: S-
- 2011: Estimate based on coverage reported by national government. Estimate challenged by: D-S-
- 2012: Estimate based on coverage reported by national government. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate challenged by: D-S-
- 2013: Estimate based on extrapolation from data reported by national government. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate challenged by: D-
- 2014: Estimate based on extrapolation from data reported by national government. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-
- 2015: Estimate based on extrapolation from data reported by national government. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-



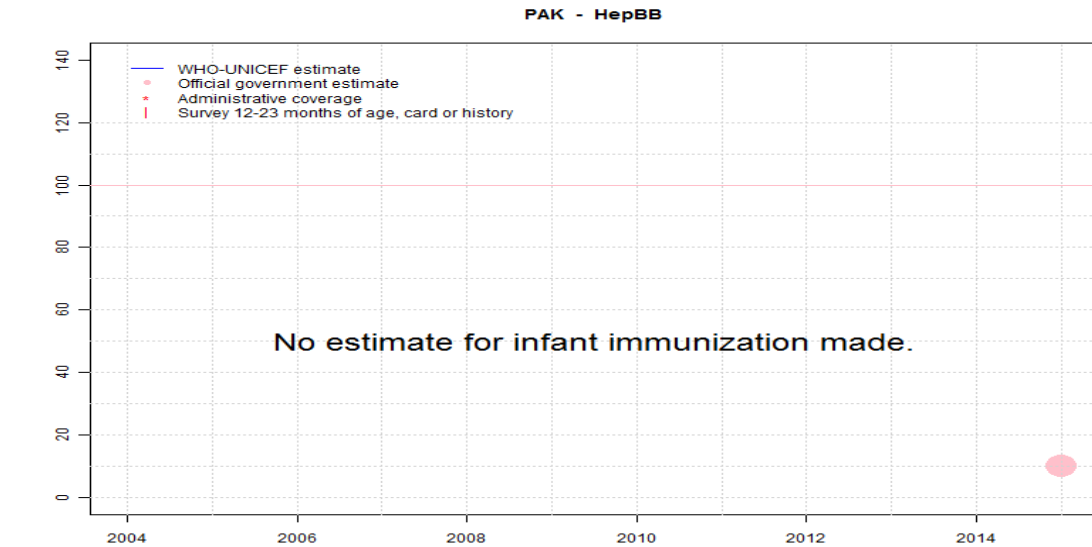
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

# Pakistan - 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	10
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

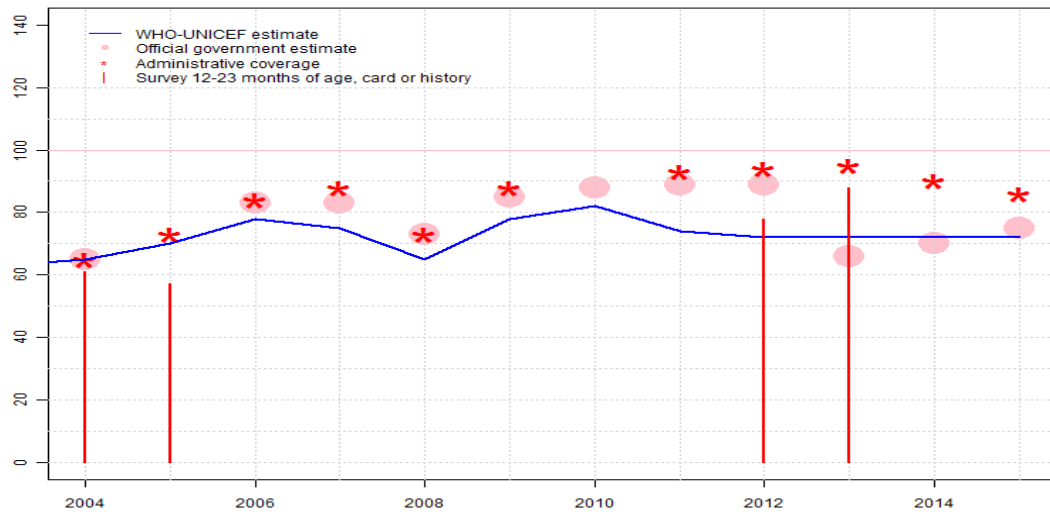
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

# Pakistan - HepB3

PAK - HepB3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	65	70	78	75	65	78	82	74	72	72	72	72
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	65	NA	83	83	73	85	88	89	89	66	70	75
Administrative	65	73	84	88	73	88	NA	93	94	95	90	86
Survey	61	57	NA	NA	NA	NA	NA	NA	78	88	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 supported by survey. Survey evidence of 62 percent based on 1 survey(s). EPI Coverage Evaluation Survey, Draft Report, Pakistan 2006 card or history results of 61 percent modified for recall bias to 62 percent based on 1st dose card or history coverage of 69 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 9 percent. Estimate challenged by: D-S-
- 2005: Reported data calibrated to 2004 and 2007 levels. Pakistan Demographic and Health Survey 2006-07 results ignored by working group. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,280. Pakistan Demographic and Health Survey 2006-07 card or history results of 57 percent modified for recall bias to 65 percent based on 1st dose card or history coverage of 71 percent, 1st dose card only coverage of 23 percent and 3d dose card only coverage of 21 percent. Estimate challenged by: D-S-
- 2006: Reported data calibrated to 2004 and 2007 levels. Estimate challenged by: D-S-
- 2007: Estimate is based on DTP3 coverage level. DTP-HepB vaccine introduced in July 2006. Estimate challenged by: D-R-S-
- 2008: Reported data calibrated to 2007 and 2010 levels. Estimate challenged by: D-S-
- 2009: Reported data calibrated to 2007 and 2010 levels. Estimate challenged by: D-S-
- 2010: Estimate is based on DTP3 coverage level. Methodology for adjusted national estimates unclear. Estimate challenged by: S-
- 2011: Estimate is based on DTP3 coverage level. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2012: Estimate is based on DTP3 level. Survey results ignored. Sample size 0 less than 300. Pakistan Social and Living Standards Measurement Survey (PSLM), 2013-14 card or history results of 78 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 81 percent, 1st dose card only coverage of 62 percent and 3d dose card only coverage of 61 percent. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Pakistan Social and Living Standards Measurement

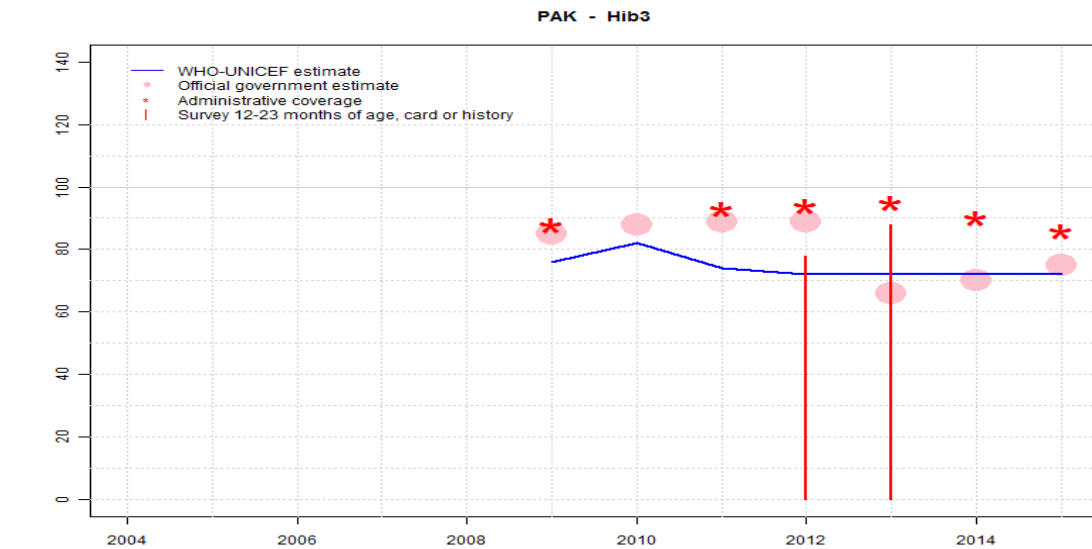


Survey (PSLM), 2014-15 card or history results of 88 percent modified for recall bias to 89 percent based on 1st dose card or history coverage of 89 percent, 1st dose card only coverage of 65 percent and 3d dose card only coverage of 65 percent. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate of 72 percent changed from previous revision value of 73 percent. Estimate challenged by: D-

2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate of 72 percent changed from previous revision value of 73 percent. Estimate challenged by: D-

2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-

# Pakistan - Hib3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	76	82	74	72	72	72	72
Estimate GoC	NA	NA	NA	NA	NA	•	•	•	•	•	•	•
Official	NA	NA	NA	NA	NA	85	88	89	89	66	70	75
Administrative	NA	NA	NA	NA	NA	88	NA	93	94	95	90	86
Survey	NA	NA	NA	NA	NA	NA	NA	NA	78	88	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:

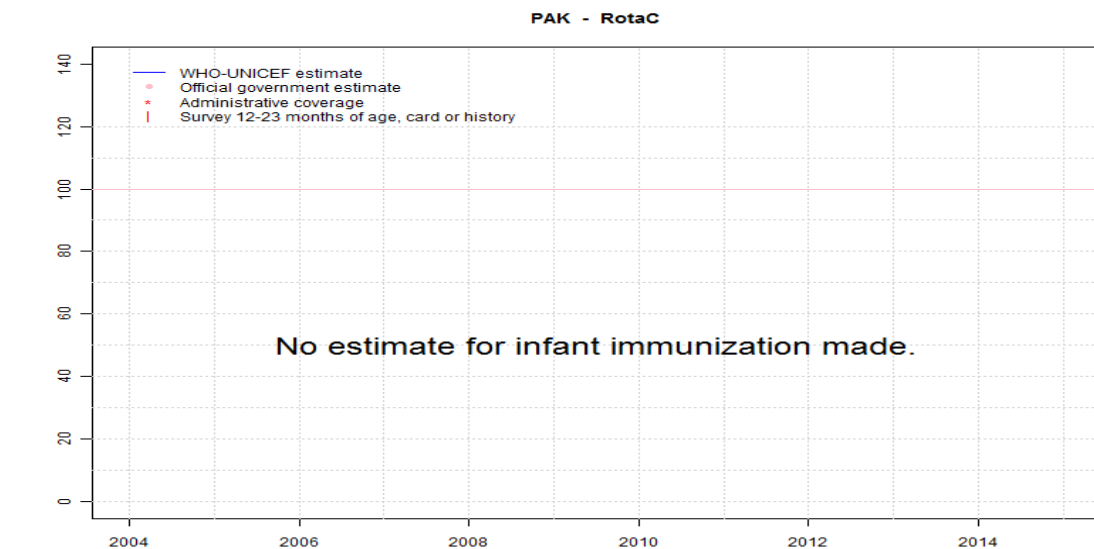
- 2009: Estimate is based on DTP3 levels. Hib vaccine introduced in 2009 Vaccine presentation is DTP-HepB-Hib. Estimate challenged by: D-R-S-
- 2010: Estimate is based on DTP3 survey results. Methodology for adjusted national estimates unclear. Estimate challenged by: S-
- 2011: Estimate is based on DTP3 level. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2012: Estimate is based on DTP3 level. Survey results ignored. Sample size 0 less than 300. Pakistan Social and Living Standards Measurement Survey (PSLM), 2013-14 card or history results of 78 percent modified for recall bias to 80 percent based on 1st dose card or history coverage of 81 percent, 1st dose card only coverage of 62 percent and 3d dose card only coverage of 61 percent. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Methodology for adjusted national estimates unclear. Estimates calibrated to administrative data. Estimate challenged by: D-R-S-
- 2013: Reported data calibrated to 2012 levels. Survey results ignored. Sample size 0 less than 300. Pakistan Social and Living Standards Measurement Survey (PSLM), 2014-15 card or history results of 88 percent modified for recall bias to 89 percent based on 1st dose card or history coverage of 89 percent, 1st dose card only coverage of 65 percent and 3d dose card only coverage of 65 percent. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate of 72 percent changed from previous revision value of 73 percent. Estimate challenged by: D-
- 2014: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate of 72 percent changed from previous revision value of 73 percent. Estimate challenged by: D-

# Pakistan - Hib3

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2015: Reported data calibrated to 2012 levels. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-

# Pakistan - RotaC



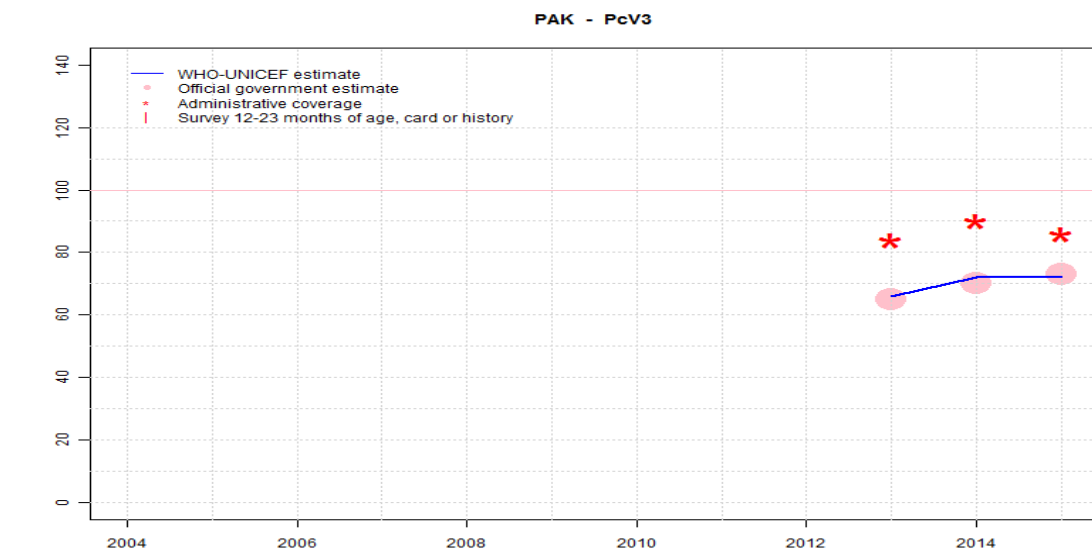
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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.

# Pakistan - PcV3



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	66	72	72
Estimate GoC	NA	NA	NA	NA	NA	NA	NA	NA	NA	•	•	•
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	65	70	73
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	84	90	86
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:

- 2013: Pneumococcal conjugate vaccine introduced during October 2012, reporting started in 2013. Eighty-four percent annualized coverage attained among 78 percent of the national birth cohort. Estimate is based on DTP3 coverage. Estimate is likely an overestimate. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. The Pakistan Social and Living Standards Measurement Survey report does not include the sample size (number of children aged 12-23 m) from which coverage is estimated. Report also does not include prevalence of home-based record ownership. In addition, the report suggests exceptionally low drop-out for multi-dose vaccines. Estimate challenged by: R-
- 2014: Estimate is based on DTP3 coverage. Estimate is likely an overestimate. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Reported target population increase from 2013 to 2014, which was larger than any prior year-to-year change, is also unexplained while the number of children vaccinated remained largely unchanged from 2013 to 2014. Estimate of 72 percent changed from previous revision value of 68 percent. Estimate challenged by: D-R-
- 2015: Estimate is based on DTP3 coverage. Estimate is likely an overestimate. Reported data excluded. Adjustments used to derive official government estimates are inconsistent with trends in the reported number of vaccinated children. Estimate challenged by: D-R-

# Pakistan - survey details

## 2013 Pakistan Social and Living Standards Measurement Survey (PSLM), 2014-15

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	65	12-23 m	-	-
BCG	Card or History	89	12-23 m	-	-
DTP1	Card	65	12-23 m	-	-
DTP1	Card or History	89	12-23 m	-	-
DTP3	Card	65	12-23 m	-	-
DTP3	Card or History	88	12-23 m	-	-
HepB1	Card	65	12-23 m	-	-
HepB1	Card or History	89	12-23 m	-	-
HepB3	Card	65	12-23 m	-	-
HepB3	Card or History	88	12-23 m	-	-
Hib1	Card	65	12-23 m	-	-
Hib1	Card or History	89	12-23 m	-	-
Hib3	Card	65	12-23 m	-	-
Hib3	Card or History	88	12-23 m	-	-
MCV1	Card	61	12-23 m	-	-
MCV1	Card or History	83	12-23 m	-	-
Pol1	Card	65	12-23 m	-	-
Pol1	Card or History	98	12-23 m	-	-
Pol3	Card	65	12-23 m	-	-
Pol3	Card or History	97	12-23 m	-	-

## 2012 Pakistan Demographic and Health Survey 2012-2013

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	83	12-23 m	2074	36
BCG	Card	36	12-23 m	748	36
BCG	Card or History	85	12-23 m	2074	36
BCG	History	49	12-23 m	1327	36
DTP1	C or H <12 months	77	12-23 m	2074	36
DTP1	Card	35	12-23 m	748	36
DTP1	Card or History	79	12-23 m	2074	36
DTP1	History	44	12-23 m	1327	36
DTP3	C or H <12 months	62	12-23 m	2074	36
DTP3	Card	32	12-23 m	748	36

DTP3	Card or History	65	12-23 m	2074	36
DTP3	History	33	12-23 m	1327	36
MCV1	C or H <12 months	50	12-23 m	2074	36
MCV1	Card	29	12-23 m	748	36
MCV1	Card or History	61	12-23 m	2074	36
MCV1	History	33	12-23 m	1327	36
Pol1	C or H <12 months	90	12-23 m	2074	36
Pol1	Card	35	12-23 m	748	36
Pol1	Card or History	92	12-23 m	2074	36
Pol1	History	57	12-23 m	1327	36
Pol3	C or H <12 months	82	12-23 m	2074	36
Pol3	Card	33	12-23 m	748	36
Pol3	Card or History	85	12-23 m	2074	36
Pol3	History	52	12-23 m	1327	36

## 2012 Pakistan Social and Living Standards Measurement Survey (PSLM), 2013-14

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	62	12-23 m	-	-
BCG	Card or History	82	12-23 m	-	-
DTP1	Card	62	12-23 m	-	-
DTP1	Card or History	81	12-23 m	-	-
DTP3	Card	61	12-23 m	-	-
DTP3	Card or History	78	12-23 m	-	-
HepB1	Card	62	12-23 m	-	-
HepB1	Card or History	81	12-23 m	-	-
HepB3	Card	61	12-23 m	-	-
HepB3	Card or History	78	12-23 m	-	-
Hib1	Card	62	12-23 m	-	-
Hib1	Card or History	81	12-23 m	-	-
Hib3	Card or History	78	12-23 m	-	-
Hib3	Card	61	12-23 m	-	-
MCV1	Card	59	12-23 m	-	-
MCV1	Card or History	77	12-23 m	-	-
Pol1	Card	62	12-23 m	-	-
Pol1	Card or History	98	12-23 m	-	-
Pol3	Card	62	12-23 m	-	-
Pol3	Card or History	96	12-23 m	-	-

# Pakistan - survey details

## 2010 National Nutrition Survey Pakistan 2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	32	6-49 m	-	-
BCG	History	87	6-49 m	-	-
DTP3	Card	90	6-49 m	-	-
DTP3	Card Or History	76	6-49 m	-	-
HepB3	C or H <12 Months	76	6-49 m	-	-
HepB3	Card	90	6-49 m	-	-
Hib3	Card	90	6-49 m	-	-
Hib3	History	76	6-49 m	-	-
MCV1	Card	23	6-49 m	-	-
MCV1	History	65	6-49 m	-	-
Pol3	Card	27	6-49 m	-	-
Pol3	Card Or History	95	6-49 m	-	-

## 2010 Pakistan Social and Living Standards Measurement Survey 2010-2011

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	57	12-23 m	76546	-
BCG	Card or History	88	12-23 m	76546	-
DTP1	Card	57	12-23 m	76546	-
DTP1	Card or History	88	12-23 m	76546	-
DTP3	Card	56	12-23 m	76546	-
DTP3	Card or History	85	12-23 m	76546	-
MCV1	Card	53	12-23 m	76546	-
MCV1	Card or History	82	12-23 m	76546	-
Pol1	Card	54	12-23 m	76546	-
Pol1	Card or History	81	12-23 m	76546	-
Pol3	Card	53	12-23 m	76546	-
Pol3	Card or History	79	12-23 m	76546	-

## 2007 Pakistan Social and Living Standards Measurement Survey 2008-2009

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	52	12-23 m	75188	-
BCG	Card or History	87	12-23 m	75188	-
DTP1	Card	52	12-23 m	75188	-
DTP1	Card or History	87	12-23 m	75188	-
DTP3	Card	51	12-23 m	75188	-
DTP3	Card or History	84	12-23 m	75188	-
MCV1	Card	51	12-23 m	75188	-
MCV1	Card or History	79	12-23 m	75188	-
Pol1	Card	51	12-23 m	75188	-
Pol1	Card or History	83	12-23 m	75188	-
Pol3	Card	50	12-23 m	75188	-
Pol3	Card or History	81	12-23 m	75188	-

## 2006 Pakistan Social and Living Standards Measurement Survey 2007-2008

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	82	12-23 m	-	-
DTP1	Card	83	12-23 m	-	-
DTP3	Card	79	12-23 m	-	-
MCV1	Card	76	12-23 m	-	-
Pol1	Card	95	12-23 m	-	-
Pol3	Card	93	12-23 m	-	-

## 2005 Pakistan Demographic and Health Survey 2006-07

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	78	12-23 m	1522	24
BCG	Card	24	12-23 m	1522	24
BCG	Card or History	80	12-23 m	1522	24
BCG	History	57	12-23 m	1522	24
DTP1	C or H <12 months	72	12-23 m	1522	24
DTP1	Card	23	12-23 m	1522	24
DTP1	Card or History	75	12-23 m	1522	24
DTP1	History	52	12-23 m	1522	24

# Pakistan - survey details

DTP3	C or H <12 months	56	12-23 m	1522	24
DTP3	Card	21	12-23 m	1522	24
DTP3	Card or History	58	12-23 m	1522	24
DTP3	History	38	12-23 m	1522	24
HepB1	C or H <12 months	68	12-23 m	1522	24
HepB1	Card	23	12-23 m	1522	24
HepB1	Card or History	71	12-23 m	1522	24
HepB1	History	48	12-23 m	1522	24
HepB3	C or H <12 months	54	12-23 m	1522	24
HepB3	Card	21	12-23 m	1522	24
HepB3	Card or History	57	12-23 m	1522	24
HepB3	History	36	12-23 m	1522	24
MCV1	C or H <12 months	50	12-23 m	1522	24
MCV1	Card	19	12-23 m	1522	24
MCV1	Card or History	60	12-23 m	1522	24
MCV1	History	41	12-23 m	1522	24
Pol1	C or H <12 months	89	12-23 m	1522	24
Pol1	Card	23	12-23 m	1522	24
Pol1	Card or History	93	12-23 m	1522	24
Pol1	History	70	12-23 m	1522	24
Pol3	C or H <12 months	79	12-23 m	1522	24
Pol3	Card	21	12-23 m	1522	24
Pol3	Card or History	83	12-23 m	1522	24
Pol3	History	62	12-23 m	1522	24

## 2004 EPI Coverage Evaluation Survey, Draft Report, Pakistan 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	10	12-23 m	72280	11
BCG	Card or History	78	12-23 m	72280	11
BCG	History	68	12-23 m	72280	11
DTP1	Card	10	12-23 m	72280	11
DTP1	Card or History	75	12-23 m	72280	11
DTP1	History	64	12-23 m	72280	11
DTP3	Card	9	12-23 m	72280	11
DTP3	Card or History	64	12-23 m	72280	11
DTP3	History	55	12-23 m	72280	11
HepB1	Card	10	12-23 m	72280	11

HepB1	Card or History	69	12-23 m	72280	11
HepB1	History	59	12-23 m	72280	11
HepB3	Card	9	12-23 m	72280	11
HepB3	Card or History	61	12-23 m	72280	11
HepB3	History	52	12-23 m	72280	11
MCV1	Card	9	12-23 m	72280	11
MCV1	Card or History	63	12-23 m	72280	11
MCV1	History	54	12-23 m	72280	11
Pol1	Card	10	12-23 m	72280	11
Pol1	Card or History	74	12-23 m	72280	11
Pol1	History	64	12-23 m	72280	11
Pol3	Card	9	12-23 m	72280	11
Pol3	Card or History	64	12-23 m	72280	11
Pol3	History	55	12-23 m	72280	11

## 2003 Pakistan Social and Living Standards Measurement Survey 2004-2005

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	82	12-23 m	-	-
BCG	Card	51	12-23 m	-	-
DTP1	C or H <12 months	82	12-23 m	-	-
DTP1	Card	51	12-23 m	-	-
DTP3	C or H <12 months	80	12-23 m	-	-
DTP3	Card	50	12-23 m	-	-
MCV1	C or H <12 months	78	12-23 m	-	-
MCV1	Card	49	12-23 m	-	-
Pol1	C or H <12 months	82	12-23 m	-	-
Pol1	Card	51	12-23 m	-	-
Pol3	C or H <12 months	81	12-23 m	-	-
Pol3	Card	50	12-23 m	-	-

## 2000 Pakistan Integrated Household Survey, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	34	12-23 m	-	-
BCG	Card or History	67	12-23 m	-	-
DTP1	Card	36	12-23 m	-	-



# Pakistan - survey details

DTP1	Card or History	71	12-23 m	-	-
DTP3	Card	33	12-23 m	-	-
DTP3	Card or History	63	12-23 m	-	-
MCV1	Card	30	12-23 m	-	-
MCV1	Card or History	57	12-23 m	-	-
Pol1	Card	34	12-23 m	-	-
Pol1	Card or History	68	12-23 m	-	-
Pol3	Card	36	12-23 m	-	-
Pol3	Card or History	89	12-23 m	-	-

## 1998 Assessment of Immunization Coverage, Pakistan February - April 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or Scar	72	12-23 m	3664	37
MCV1	Card or History	54	12-23 m	3664	37
Pol3	Card or History	58	12-23 m	3664	37

## 1997 Pakistan Integrated Household Survey, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	39	12-23 m	-	-
BCG	Card or History	65	12-23 m	-	-
DTP1	Card	41	12-23 m	-	-
DTP1	Card or History	67	12-23 m	-	-
DTP3	Card	37	12-23 m	-	-
DTP3	Card or History	58	12-23 m	-	-
MCV1	Card	36	12-23 m	-	-
MCV1	Card or History	55	12-23 m	-	-
Pol1	Card	42	12-23 m	-	-
Pol1	Card or History	77	12-23 m	-	-
Pol3	Card	39	12-23 m	-	-
Pol3	Card or History	70	12-23 m	-	-

Further information and estimates for previous years are available at:

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

[http://www.who.int/immunization/monitoring\\_surveillance/routine/coverage/en/index4.html](http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html)

## Pakistan

### 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	78
2005	78
2006	80
2007	78
2008	80
2009	84
2010	84
2011	75
2012	75
2013	75
2014	75
2015	75

<sup>1</sup> This model is described in: Griffiths U., Wolfson L., Quddus A., Younus M., Hafiz R.. Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan. Bulletin of the World Health Organization 2004; 82:643-651.