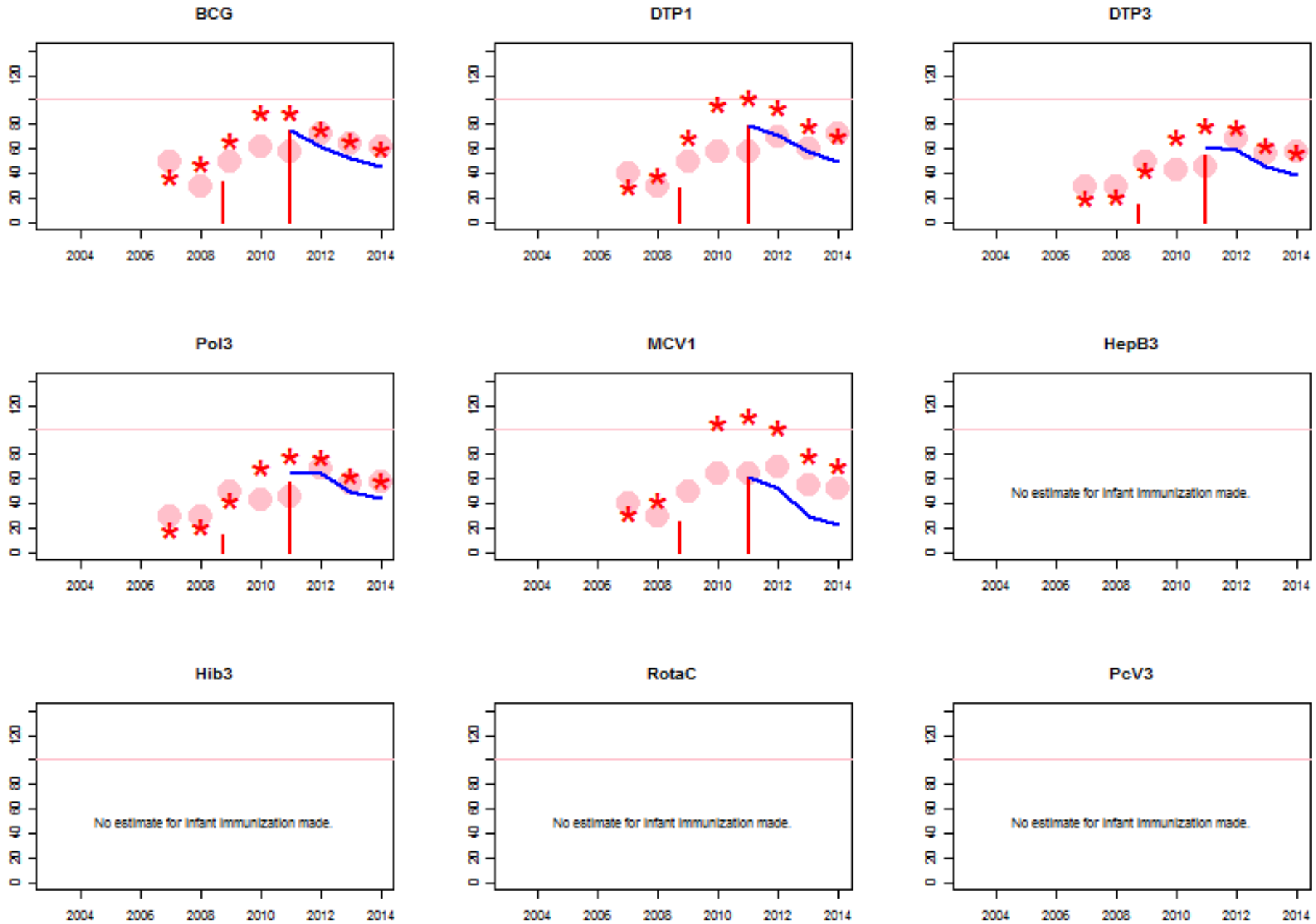
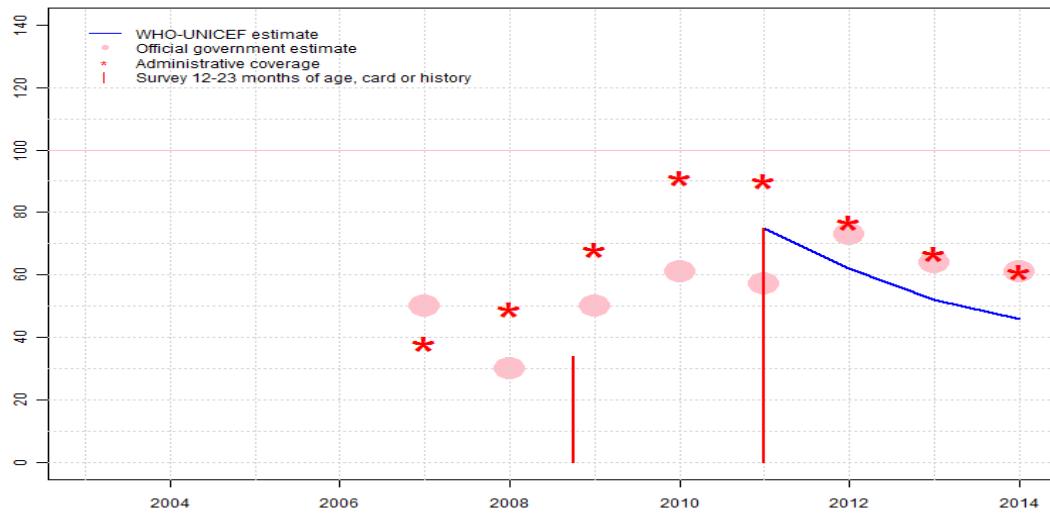


South Sudan: WHO and UNICEF estimates of immunization coverage: 2014 revision



# South Sudan - BCG

SSD - BCG



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 75   | 62   | 52   | 46   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | •    | •    | •    | •    |
| Official       | NA   | NA   | NA   | NA   | 50   | 30   | 50   | 61   | 57   | 73   | 64   | 61   |
| Administrative | NA   | NA   | NA   | NA   | 38   | 49   | 68   | 91   | 90   | 77   | 67   | 61   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | *    | NA   | 75   | NA   | NA   | NA   |

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

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

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

## Description:

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 75 percent based on 1 survey(s). The Republic of South Sudan became an independent state, was admitted to the United Nations and became a WHO member state in July 2011. Access to health facilities is a problem in many parts of the country for 5 months out of the year. The official government estimates for 2011 are based on the number of children vaccinated (administrative reports) and the highest denominator possible as derived from the 5 birth cohorts reached in Polio SIAs. The resulting official estimate is much lower than the administrative estimates because of the marked differences in denominators used. Please note that this method of official estimation of coverage in South Sudan was used because of the consistent under-estimation of the denominators derived from the 2008 housing and population census that were used in earlier years. Official government estimate based on immunization programme targets. Estimate challenged by: D-R-

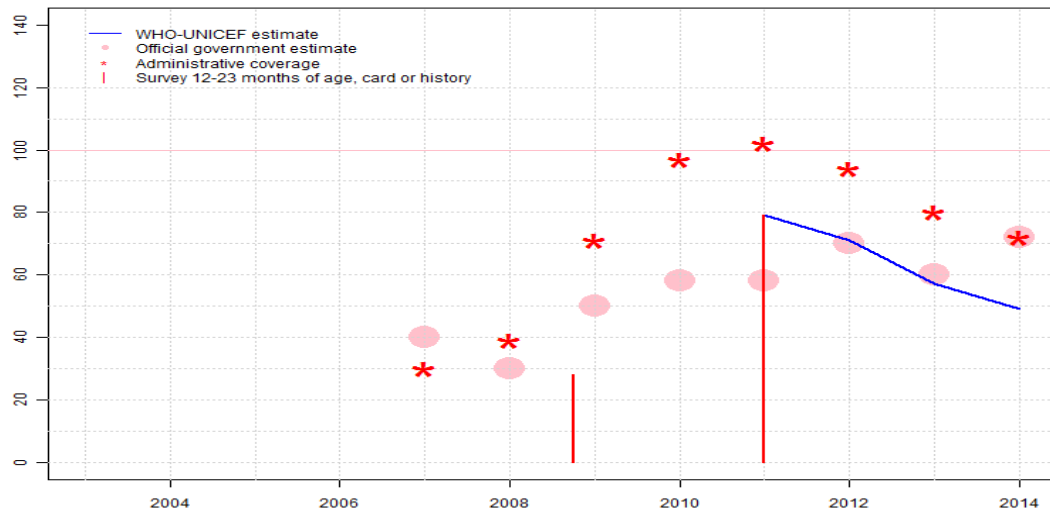
2012: Reported data calibrated to 2011 levels. Official government estimate based on immunization programme targets. Estimate challenged by: D-

2013: Reported data calibrated to 2011 levels. Official government estimate based on immunization programme targets. Estimate challenged by: D-

2014: Reported data calibrated to 2011 levels. The Republic of South Sudan continues to be challenged by ongoing civil conflict in several states. Concerns continue with regards to quality of recording and monitoring, timeliness and completeness of data. Administrative coverage data reflect reporting from three-quarters of total expected district reports. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# South Sudan - DTP1

SSD - DTP1



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 79   | 71   | 57   | 49   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | •    | •    | •    | •    |
| Official       | NA   | NA   | NA   | NA   | 40   | 30   | 50   | 58   | 58   | 70   | 60   | 72   |
| Administrative | NA   | NA   | NA   | NA   | 30   | 39   | 71   | 97   | 102  | 94   | 80   | 72   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | *    | NA   | 79   | NA   | NA   | NA   |

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

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

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

## Description:

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 79 percent based on 1 survey(s). The Republic of South Sudan became an independent state, was admitted to the United Nations and became a WHO member state in July 2011. Access to health facilities is a problem in many parts of the country for 5 months out of the year. The official government estimates for 2011 are based on the number of children vaccinated (administrative reports) and the highest denominator possible as derived from the 5 birth cohorts reached in Polio SIAs. The resulting official estimate is much lower than the administrative estimates because of the marked differences in denominators used. Please note that this method of official estimation of coverage in South Sudan was used because of the consistent under-estimation of the denominators derived from the 2008 housing and population census that were used in earlier years. Official government estimate based on immunization programme targets. Estimate challenged by: D-R-

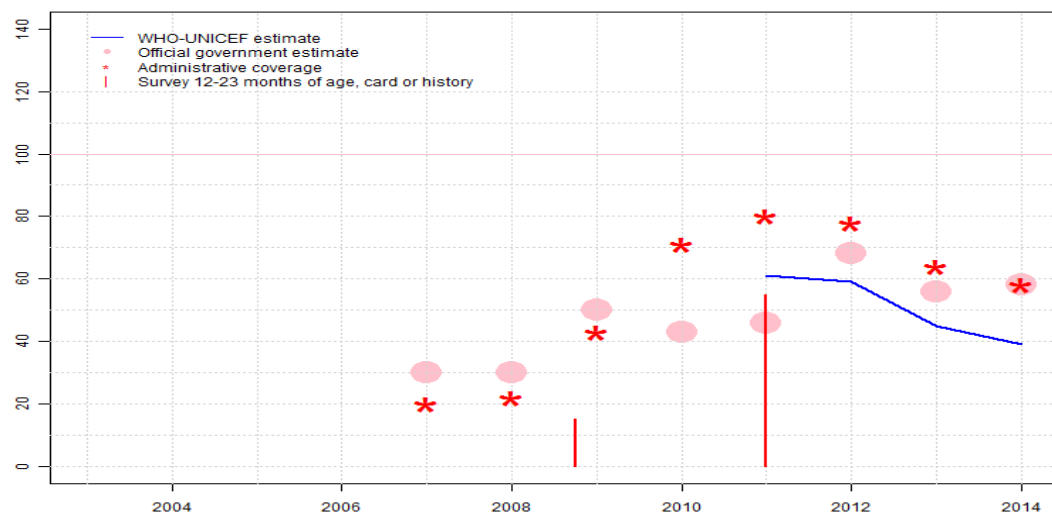
2012: Reported data calibrated to 2011 levels. Official government estimate based on immunization programme targets. Estimate challenged by: D-

2013: Reported data calibrated to 2011 levels. Official government estimate based on immunization programme targets. Estimate challenged by: D-

2014: Reported data calibrated to 2011 levels. The Republic of South Sudan continues to be challenged by ongoing civil conflict in several states. Concerns continue with regards to quality of recording and monitoring, timeliness and completeness of data. Administrative coverage data reflect reporting from three-quarters of total expected district reports. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# South Sudan - DTP3

SSD - DTP3



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 61   | 59   | 45   | 39   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | •    | •    | •    | •    |
| Official       | NA   | NA   | NA   | NA   | 30   | 30   | 50   | 43   | 46   | 68   | 56   | 58   |
| Administrative | NA   | NA   | NA   | NA   | 20   | 22   | 43   | 71   | 80   | 78   | 64   | 58   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | *    | NA   | 55   | NA   | NA   | NA   |

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

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

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

## Description:

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 61 percent based on 1 survey(s). Republic of South Sudan EPI Coverage Survey 2011-2012 card or history results of 55 percent modified for recall bias to 61 percent based on 1st dose card or history coverage of 79 percent, 1st dose card only coverage of 31 percent and 3d dose card only coverage of 24 percent. The Republic of South Sudan became an independent state, was admitted to the United Nations and became a WHO member state in July 2011. Access to health facilities is a problem in many parts of the country for 5 months out of the year. The official government 1 estimates for 2011 are based on the number of children vaccinated (administrative reports) and the highest denominator possible as derived from the 5 birth cohorts reached in Polio SIAs. The resulting official estimate is much lower than the administrative estimates because of the marked differences in denominators used. Please note that this method of official estimation of coverage in South Sudan was used because of the consistent under-estimation of the denominators derived from the 2008 housing and population census that were used in earlier years.. Official government estimate based on immunization programme targets.

Estimate challenged by: D-R-

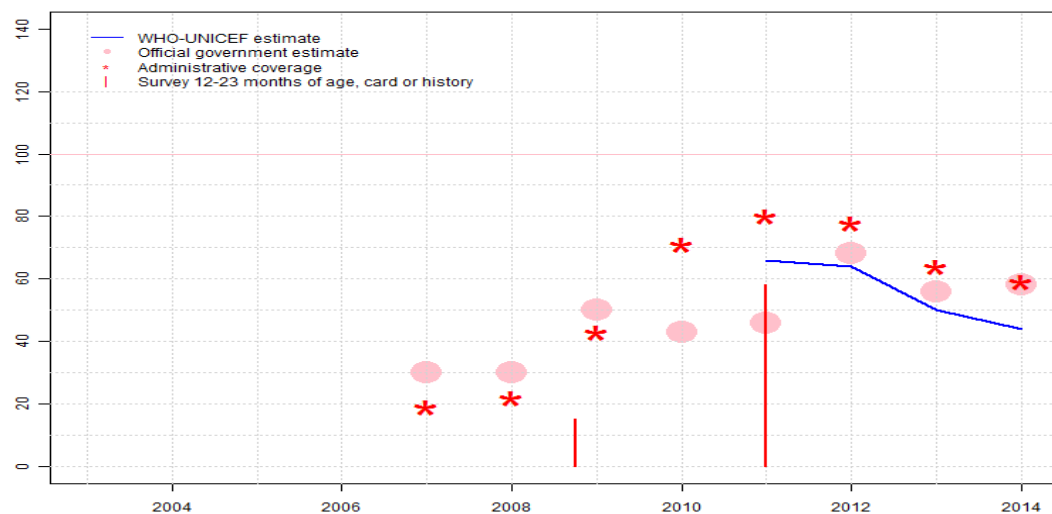
2012: Reported data calibrated to 2011 levels. . Official government estimate based on immunization programme targets. Estimate challenged by: D-

2013: Reported data calibrated to 2011 levels. . Official government estimate based on immunization programme targets. Estimate challenged by: D-

2014: Reported data calibrated to 2011 levels. The Republic of South Sudan continues to be challenged by ongoing civil conflict in several states. Concerns continue with regards to quality of recording and monitoring, timeliness and completeness of data. Administrative coverage data reflect reporting from three-quarters of total expected district reports. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# South Sudan - Pol3

SSD - Pol3



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 66   | 64   | 50   | 44   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | •    | •    | •    | •    |
| Official       | NA   | NA   | NA   | NA   | 30   | 30   | 50   | 43   | 46   | 68   | 56   | 58   |
| Administrative | NA   | NA   | NA   | NA   | 19   | 22   | 43   | 71   | 80   | 78   | 64   | 59   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | *    | NA   | 58   | NA   | NA   | NA   |

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

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

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

## Description:

2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 66 percent based on 1 survey(s). Republic of South Sudan EPI Coverage Survey 2011-2012 card or history results of 58 percent modified for recall bias to 66 percent based on 1st dose card or history coverage of 80 percent, 1st dose card only coverage of 29 percent and 3d dose card only coverage of 24 percent. The Republic of South Sudan became an independent state, was admitted to the United Nations and became a WHO member state in July 2011. Access to health facilities is a problem in many parts of the country for 5 months out of the year. The official government 1 estimates for 2011 are based on the number of children vaccinated (administrative reports) and the highest denominator possible as derived from the 5 birth cohorts reached in Polio SIAs. The resulting official estimate is much lower than the administrative estimates because of the marked differences in denominators used. Please note that this method of official estimation of coverage in South Sudan was used because of the consistent under-estimation of the denominators derived from the 2008 housing and population census that were used in earlier years.. Official government estimate based on immunization programme targets.

Estimate challenged by: D-R-

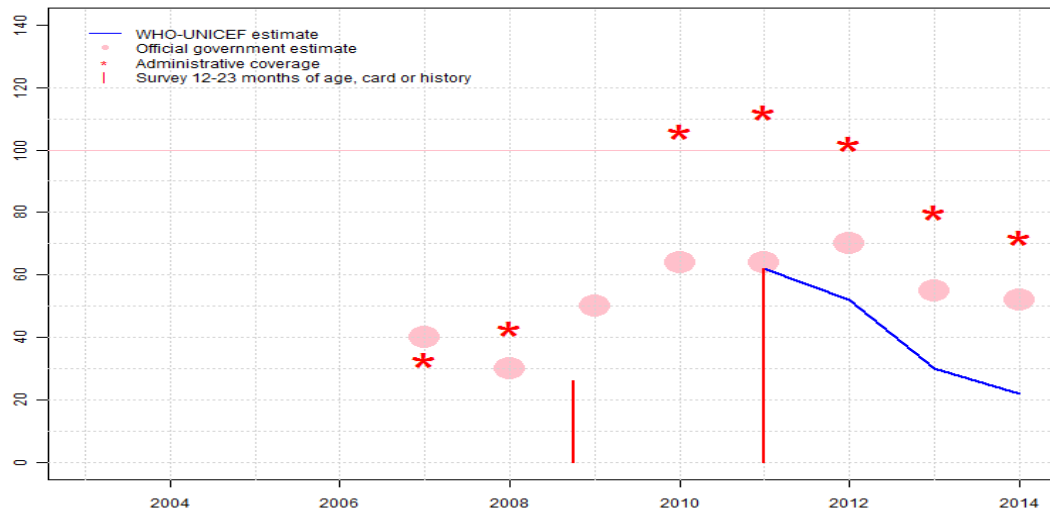
2012: Reported data calibrated to 2011 levels. . Official government estimate based on immunization programme targets. Estimate challenged by: D-

2013: Reported data calibrated to 2011 levels. . Official government estimate based on immunization programme targets. Estimate challenged by: D-

2014: Reported data calibrated to 2011 levels. The Republic of South Sudan continues to be challenged by ongoing civil conflict in several states. Concerns continue with regards to quality of recording and monitoring, timeliness and completeness of data. Administrative coverage data reflect reporting from three-quarters of total expected district reports. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. Estimate challenged by: D-

# South Sudan - MCV1

SSD - MCV1



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 62   | 52   | 30   | 22   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | •    | •    | •    | •    |
| Official       | NA   | NA   | NA   | NA   | 40   | 30   | 50   | 64   | 64   | 70   | 55   | 52   |
| Administrative | NA   | NA   | NA   | NA   | 33   | 43   | NA   | 106  | 112  | 102  | 80   | 72   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | *    | NA   | 62   | NA   | NA   | NA   |

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

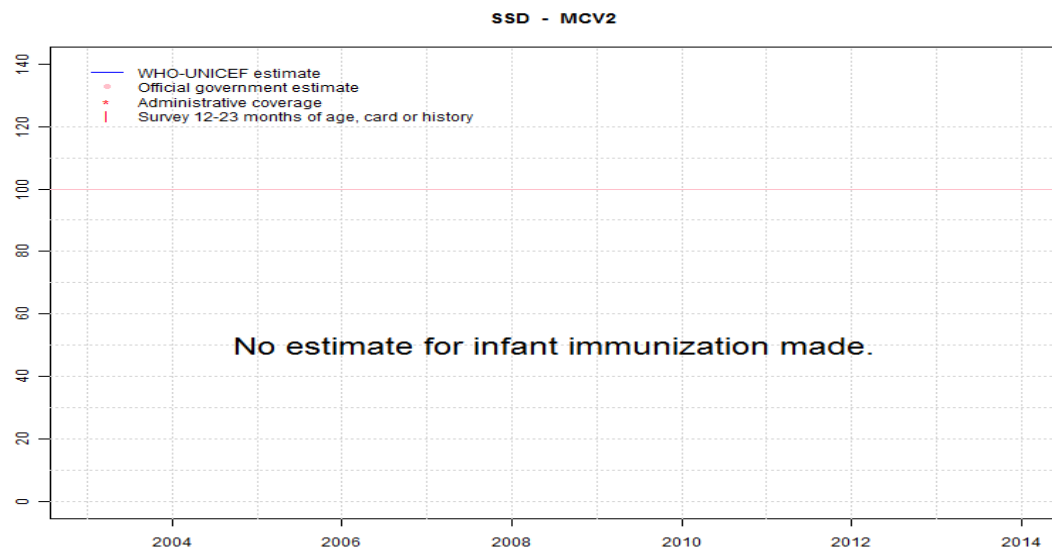
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2012 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

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

## Description:

- 2011: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 62 percent based on 1 survey(s). The Republic of South Sudan became an independent state, was admitted to the United Nations and became a WHO member state in July 2011. Access to health facilities is a problem in many parts of the country for 5 months out of the year. The official government estimates for 2011 are based on the number of children vaccinated (administrative reports) and the highest denominator possible as derived from the 5 birth cohorts reached in Polio SIAs. The resulting official estimate is much lower than the administrative estimates because of the marked differences in denominators used. Please note that this method of official estimation of coverage in South Sudan was used because of the consistent under-estimation of the denominators derived from the 2008 housing and population census that were used in earlier years. Official government estimate based on immunization programme targets. Estimate challenged by: D-R-
- 2012: Reported data calibrated to 2011 levels. Official government estimate based on immunization programme targets. Estimate challenged by: D-
- 2013: Reported data calibrated to 2011 levels. Official government estimate based on immunization programme targets. Estimate challenged by: D-
- 2014: Reported data calibrated to 2011 levels. The Republic of South Sudan continues to be challenged by ongoing civil conflict in several states. Concerns continue with regards to quality of recording and monitoring, timeliness and completeness of data. Administrative coverage data reflect reporting from three-quarters of total expected district reports. WHO and UNICEF encourage continued efforts to improve recording and monitoring while also increasing coverage. No explanation provided for adjusted coverage level. Estimate challenged by: D-

# South Sudan - MCV2



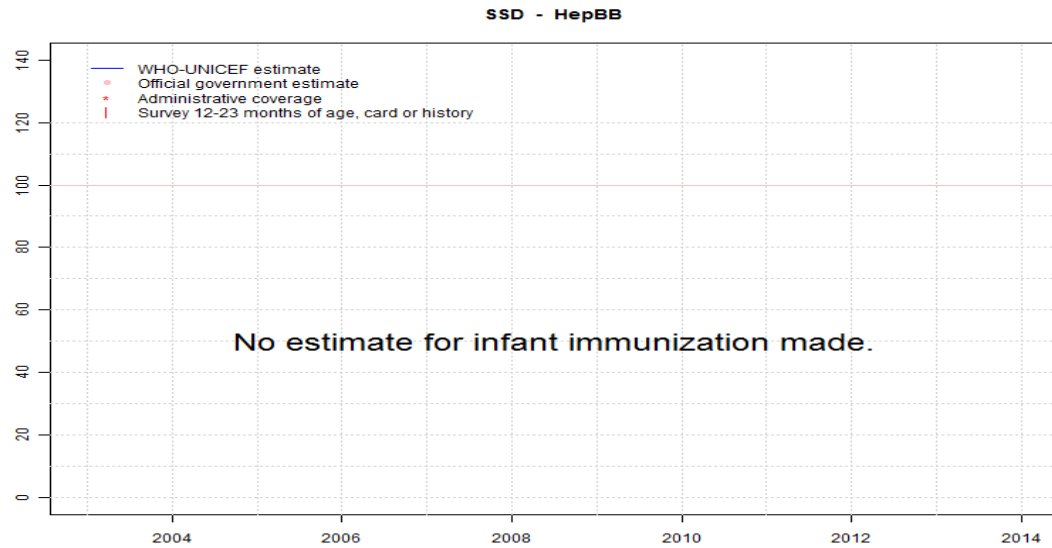
|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

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

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

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

# South Sudan - HepBB



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

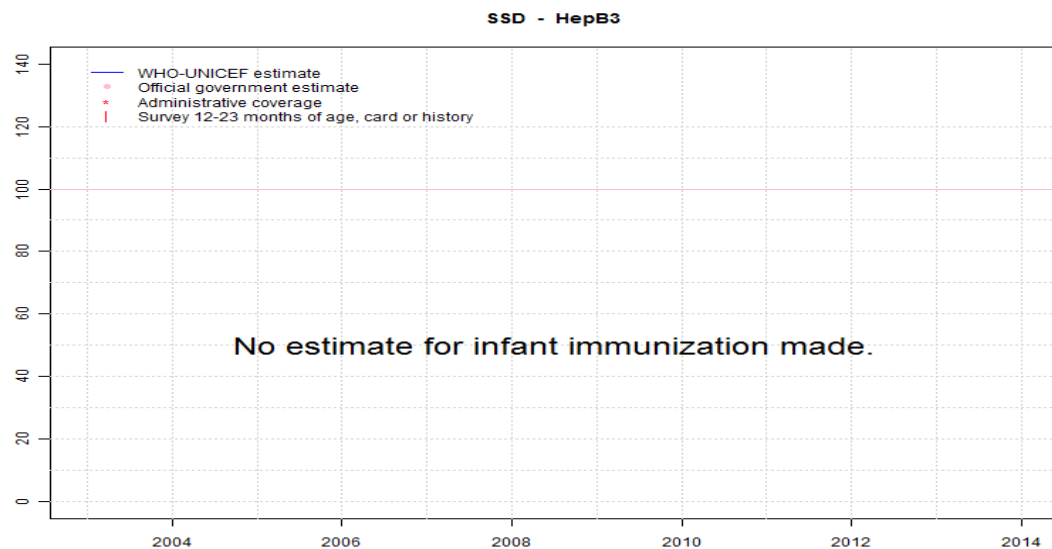
The WHO and UNICEF estimates of national immunization coverage (wuenic) are based on data and information that are of varying, and, in some instances, unknown quality. Beginning with the 2011 revision we describe the grade of confidence (GoC) we have in these estimates. As there is no underlying probability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

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

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



# South Sudan - HepB3



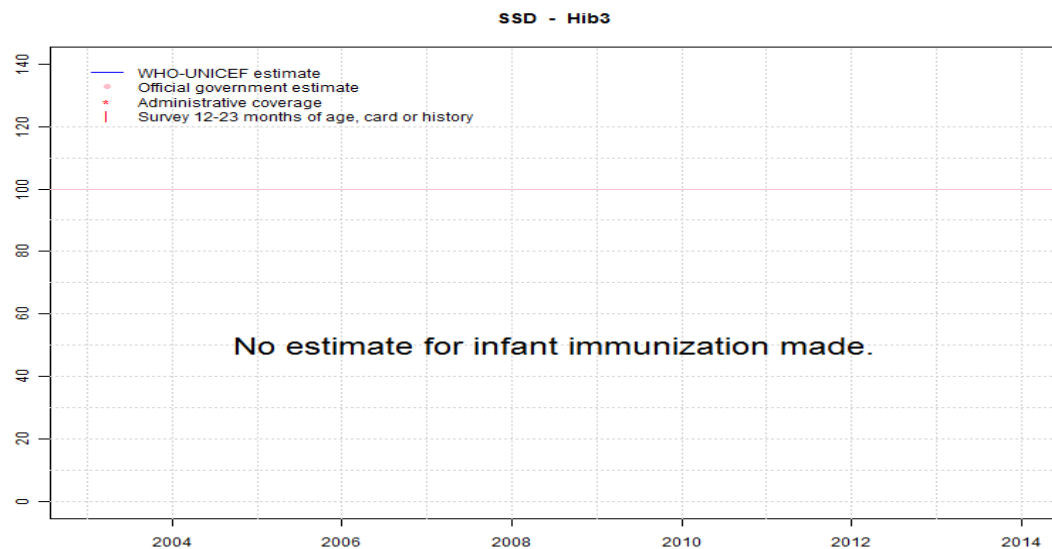
|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

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

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

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

# South Sudan - Hib3



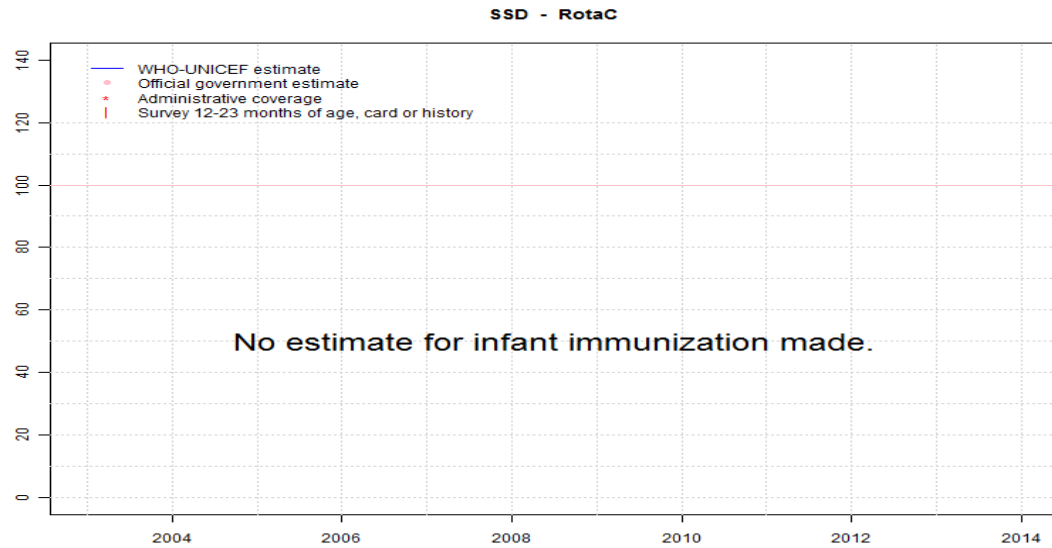
|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

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

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

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

# South Sudan - RotaC



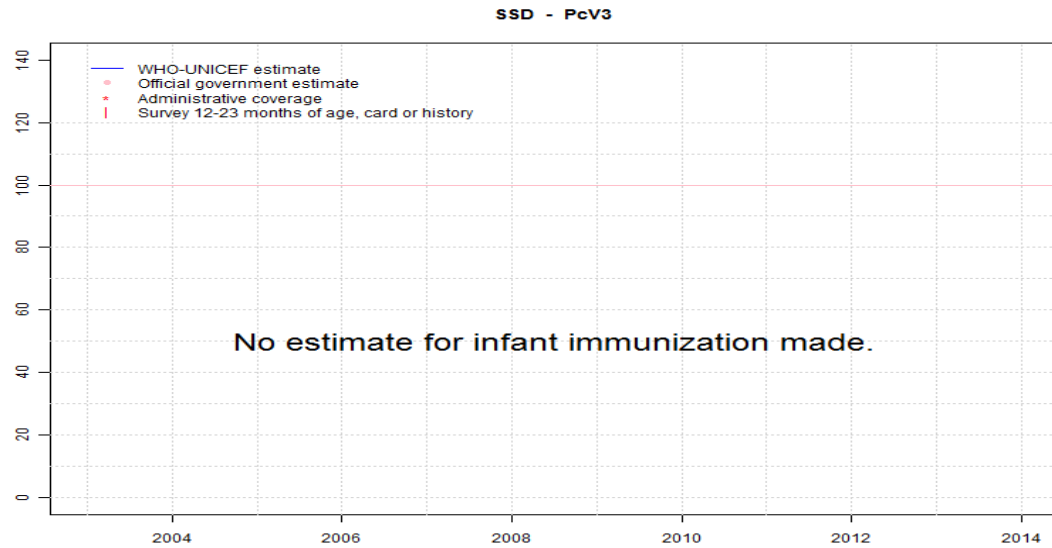
|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

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

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

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

# South Sudan - PcV3



|                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Estimate GoC   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

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

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

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

# South Sudan - survey details

## 2011 Republic of South Sudan EPI Coverage Survey 2011-2012

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | C or H <12 months   | 71       | 12-23 m    | 2246   | 50         |
| BCG     | Card                | 30       | 12-23 m    | -      | 50         |
| BCG     | Card or History     | 75       | 12-23 m    | 2246   | 50         |
| DTP1    | C or H <12 months   | 73       | 12-23 m    | 2246   | 50         |
| DTP1    | Card                | 31       | 12-23 m    | -      | 50         |
| DTP1    | Card or History     | 79       | 12-23 m    | 2246   | 50         |
| DTP3    | C or H <12 months   | 46       | 12-23 m    | 2246   | 50         |
| DTP3    | Card                | 24       | 12-23 m    | -      | 50         |
| DTP3    | Card or History     | 55       | 12-23 m    | 2246   | 50         |
| MCV1    | C or H <12 months   | 46       | 12-23 m    | 2246   | 50         |
| MCV1    | Card                | 23       | 12-23 m    | -      | 50         |
| MCV1    | Card or History     | 62       | 12-23 m    | 2246   | 50         |
| Pol1    | C or H <12 months   | 73       | 12-23 m    | 2246   | 50         |
| Pol1    | Card                | 29       | 12-23 m    | -      | 50         |
| Pol1    | Card or History     | 80       | 12-23 m    | 2246   | 50         |
| Pol3    | C or H <12 months   | 46       | 12-23 m    | 2246   | 50         |
| Pol3    | Card                | 24       | 12-23 m    | -      | 50         |
| Pol3    | Card or History     | 58       | 12-23 m    | 2246   | 50         |

|      |                   |    |         |      |    |
|------|-------------------|----|---------|------|----|
| DTP1 | Card              | 7  | 12-23 m | -    | 10 |
| DTP1 | Card or History   | 28 | 12-23 m | 1704 | 10 |
| DTP1 | History           | 21 | 12-23 m | -    | 10 |
| DTP3 | C or H <12 months | 13 | 12-23 m | 1704 | 10 |
| DTP3 | Card              | 5  | 12-23 m | -    | 10 |
| DTP3 | Card or History   | 15 | 12-23 m | 1704 | 10 |
| DTP3 | History           | 10 | 12-23 m | -    | 10 |
| MCV1 | C or H <12 months | 20 | 12-23 m | 1704 | 10 |
| MCV1 | Card              | 6  | 12-23 m | -    | 10 |
| MCV1 | Card or History   | 26 | 12-23 m | 1704 | 10 |
| MCV1 | History           | 20 | 12-23 m | -    | 10 |
| Pol1 | C or H <12 months | 35 | 12-23 m | 1704 | 10 |
| Pol1 | Card              | 8  | 12-23 m | -    | 10 |
| Pol1 | Card or History   | 36 | 12-23 m | 1704 | 10 |
| Pol1 | History           | 29 | 12-23 m | -    | 10 |
| Pol3 | C or H <12 months | 13 | 12-23 m | 1704 | 10 |
| Pol3 | Card              | 6  | 12-23 m | -    | 10 |
| Pol3 | Card or History   | 15 | 12-23 m | 1704 | 10 |
| Pol3 | History           | 9  | 12-23 m | -    | 10 |

## 2009 The Republic of South Sudan: The Sudan Household Health Survey 2010

### 2009 South Sudan Household Health Survey 2010 (SHHS 2)

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | C or H <12 months   | 31       | 12-23 m    | 1704   | 10         |
| BCG     | Card                | 9        | 12-23 m    | -      | 10         |
| BCG     | Card or History     | 34       | 12-23 m    | 1704   | 10         |
| BCG     | History             | 26       | 12-23 m    | -      | 10         |
| DTP1    | C or H <12 months   | 25       | 12-23 m    | 1704   | 10         |

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | Card or History     | 34       | 12-23 m    | 1704   | 10         |
| DTP1    | Card or History     | 28       | 12-23 m    | 1704   | 10         |
| DTP3    | Card or History     | 15       | 12-23 m    | 1704   | 10         |
| MCV1    | Card or History     | 26       | 12-23 m    | 1704   | 10         |
| Pol1    | Card or History     | 36       | 12-23 m    | 1704   | 10         |
| Pol3    | Card or History     | 15       | 12-23 m    | 1704   | 10         |

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)

## South Sudan

### WHO/UNICEF Estimates of Protection at Birth (PAB) against tetanus

In countries where tetanus is recommended for girls and women coverage is usually reported as "TT2+", i.e. the proportion of (pregnant) women who have received their second or superior TT dose in a given year. TT2 + coverage, however, can under-represent the actual proportion of births that are protected against tetanus as it does not include women who have previously received protective doses, women who received one dose without documentation of previous doses, and women who received doses in TT (or Td) supplemental immunization activities (SIA). In addition, girls who have received DTP in their childhood and are entering childbearing age, may be protected with TT booster doses.

WHO and UNICEF have developed a model that takes into account the above scenarios, and calculates the proportion of births in a given year that can be considered as having been protected against tetanus - "Protection at Birth".

In this model, annual cohorts of women are followed from infancy through their life. A proportion receives DTP in infancy (estimated based on the WHO-UNICEF estimates of DTP3 coverage). In addition some of these women also receive TT through routine services when they are pregnant and may also receive TT during SIAs. The model also adjusts reported data, taking into account coverage patterns in other years, and/or results available through surveys. The duration of protection is then calculated, based on WHO estimates of the duration of protection by doses ever received. The proportion of births that are protected against tetanus as a result of maternal immunization reflects the tetanus immunization received by the mother throughout her life rather than simply the TT immunizations received during the current pregnancy.

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

| Year | PAB coverage estimate (%) |
|------|---------------------------|
| 2003 |                           |
| 2004 |                           |
| 2005 |                           |
| 2006 |                           |
| 2007 |                           |
| 2008 |                           |
| 2009 |                           |
| 2010 |                           |
| 2011 | 64                        |
| 2012 | 64                        |
| 2013 | 64                        |
| 2014 | 64                        |

<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.