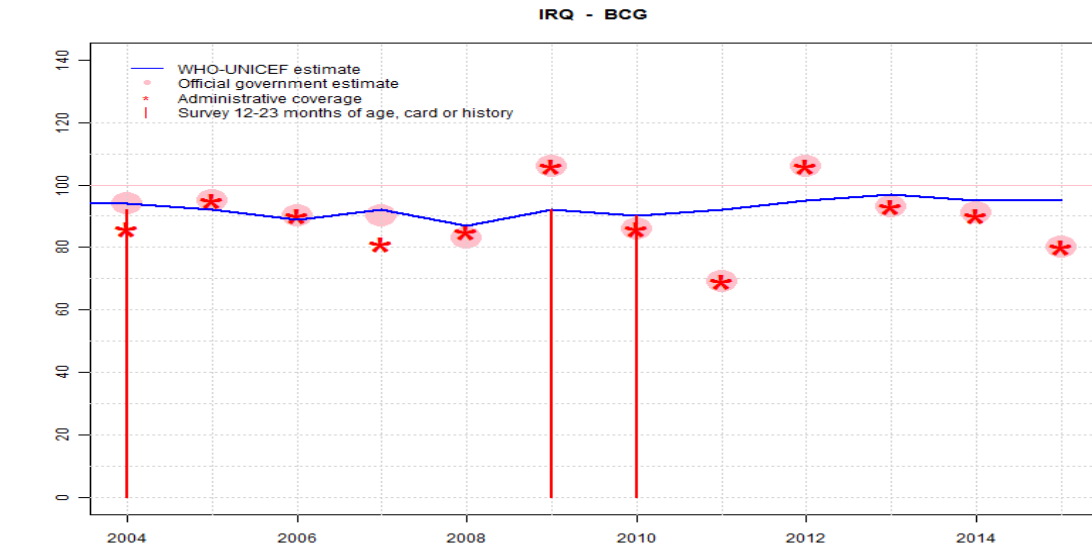


Iraq - BCG



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 94 | 92 | 89 | 92 | 87 | 92 | 90 | 92 | 95 | 97 | 95 | 95 |
| Estimate GoC | ●●● | ● | ● | ●● | ●● | ● | ● | ● | ● | ●● | ●● | ● |
| Official | 94 | 95 | 90 | 90 | 83 | 106 | 86 | 69 | 106 | 93 | 91 | 80 |
| Administrative | 86 | 95 | 90 | 81 | 85 | 106 | 86 | 69 | 106 | 93 | 90 | 80 |
| Survey | 92 | NA | NA | NA | NA | 92 | 90 | 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.

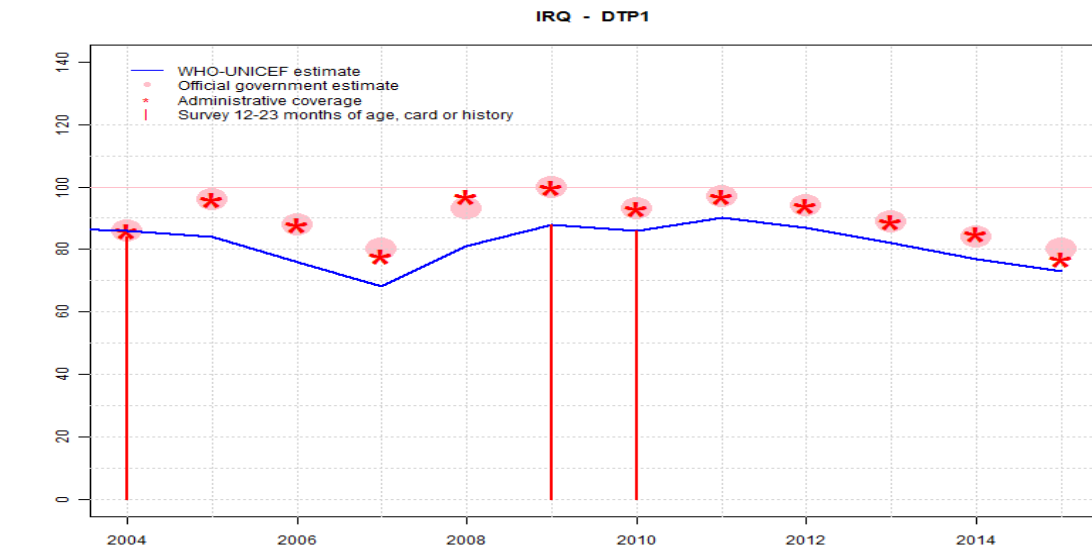
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 92 percent based on 1 survey(s). GoC=R+ S+ D+
- 2005: Service and reporting system effected by local situation Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2009 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2009 levels. GoC=S+ D+
- 2009: Estimate is based on survey results. Reported data excluded. 106 percent greater than 100 percent. Reported data excluded. Unexplained increase from 83 percent to 106 percent with decrease 86 percent. Estimate challenged by: D-R-
- 2010: Estimate is based on survey results. Estimate challenged by: R-
- 2011: Reported data calibrated to 2010 levels. Reported data excluded. Decline in reported coverage from 86 percent to 69 percent with increase to 106 percent. Estimate challenged by: D-
- 2012: Reported data calibrated to 2010 levels. Reported data excluded. 106 percent greater than 100 percent. Reported data excluded. Unexplained increase from 69 percent to 106 percent with decrease 93 percent. Estimate challenged by: D-
- 2013: Reported data calibrated to 2010 levels. GoC=D+
- 2014: Reported data calibrated to 2010 levels. GoC=D+
- 2015: Reported data calibrated to 2010 levels. Reported data excluded. Change in reported coverage from 91 level to 80 percent. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

Iraq - DTP1



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 86 | 84 | 76 | 68 | 81 | 88 | 86 | 90 | 87 | 82 | 77 | 73 |
| Estimate GoC | ••• | • | • | • | • | • | • | • | • | • | • | •• |
| Official | 86 | 96 | 88 | 80 | 93 | 100 | 93 | 97 | 94 | 89 | 84 | 80 |
| Administrative | 86 | 96 | 88 | 78 | 97 | 100 | 93 | 97 | 94 | 89 | 85 | 77 |
| Survey | 84 | NA | NA | NA | NA | 88 | 86 | NA | NA | NA | NA | NA |

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 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.

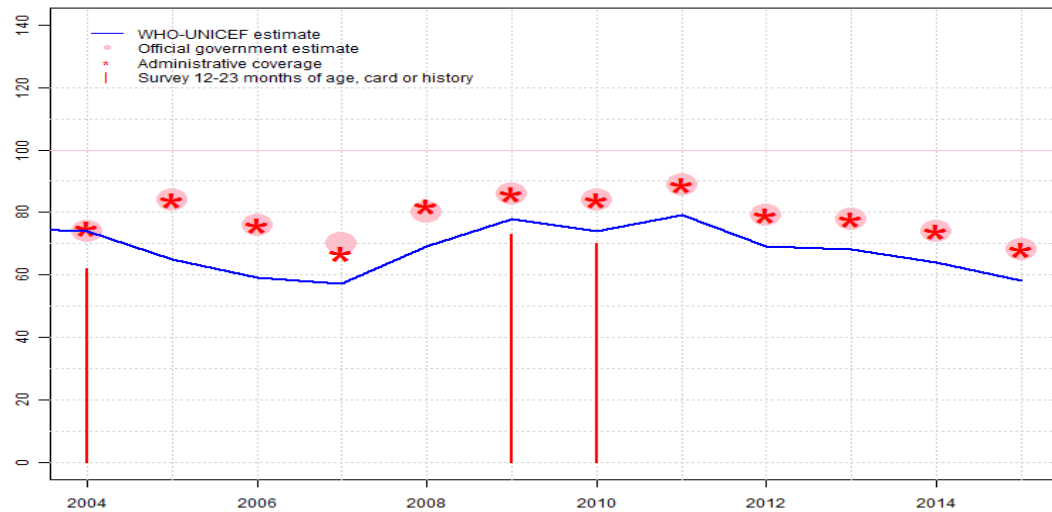
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 84 percent based on 1 survey(s). GoC=R+ S+ D+
- 2005: Service and reporting system effected by local situation Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2008: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2009: Estimate is based on survey results. Estimate challenged by: D-R-
- 2010: Estimate is based on survey results. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2012: Reported data calibrated to 2010 levels. DTP-HepB-Hib pentavalent and DTP-Hib tetravalent vaccines introduced in 2012. Estimate challenged by: D-
- 2013: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2014: Reported data calibrated to 2010 levels. Programme reports four months stock-out at national level. Reported number of children vaccinated is increasing since 2012 but continues to fall short of the reported number of children vaccinated with DTP containing vaccines during 2011. Estimate challenged by: D-
- 2015: Reported data calibrated to 2010 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports a 5 month national level stock-out of DTP-HepB-Hib vaccine. GoC=D+

Iraq - DTP3

IRQ - DTP3



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 74 | 65 | 59 | 57 | 69 | 78 | 74 | 79 | 69 | 68 | 64 | 58 |
| Estimate GoC | ●●● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Official | 74 | 84 | 76 | 70 | 80 | 86 | 84 | 89 | 79 | 78 | 74 | 68 |
| Administrative | 75 | 84 | 76 | 67 | 82 | 86 | 84 | 89 | 79 | 78 | 74 | 68 |
| Survey | 62 | NA | NA | NA | NA | 73 | 70 | 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.

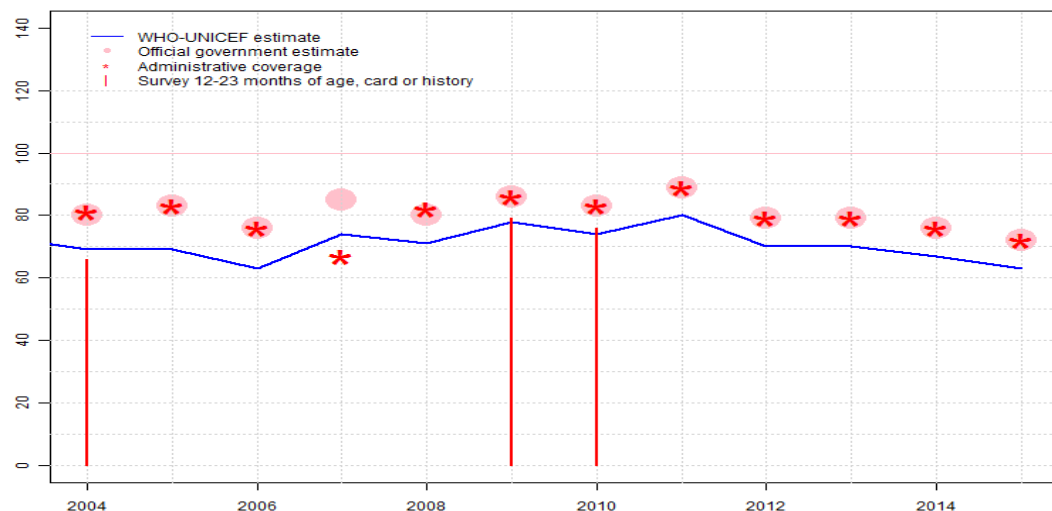
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

- 2004: Estimate based on coverage reported by national government supported by survey. Survey evidence of 65 percent based on 1 survey(s). Iraq Multiple Indicator Cluster Survey 2006 card or history results of 62 percent modified for recall bias to 65 percent based on 1st dose card or history coverage of 84 percent, 1st dose card only coverage of 49 percent and 3d dose card only coverage of 38 percent. GoC=R+ S+ D+
- 2005: Service and reporting system effected by local situation Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2008: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2009: Estimate is based on survey results. Iraq Multiple Indicator Cluster Survey 2011 card or history results of 73 percent modified for recall bias to 78 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 63 percent and 3d dose card only coverage of 56 percent. Estimate challenged by: D-R-
- 2010: Estimate is based on survey results. Iraq Multiple Indicator Cluster Survey 2011 card or history results of 70 percent modified for recall bias to 74 percent based on 1st dose card or history coverage of 86 percent, 1st dose card only coverage of 66 percent and 3d dose card only coverage of 57 percent. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2012: Reported data calibrated to 2010 levels. DTP-HepB-Hib pentavalent and DTP-Hib tetravalent vaccines introduced in 2012. Estimate challenged by: D-
- 2013: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2014: Reported data calibrated to 2010 levels. Programme reports four months stock-out at national level. Reported number of children vaccinated is increasing since 2012 but continues to fall short of the reported number of children vaccinated with DTP containing vaccines during 2011. Estimate challenged by: D-
- 2015: Reported data calibrated to 2010 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports a 5 month national level stock-out of DTP-HepB-Hib vaccine. Estimate challenged by: D-

Iraq - Pol3

IRQ - Pol3



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 69 | 69 | 63 | 74 | 71 | 78 | 74 | 80 | 70 | 70 | 67 | 63 |
| Estimate GoC | • | • | • | •• | • | • | • | • | • | • | • | • |
| Official | 80 | 83 | 76 | 85 | 80 | 86 | 83 | 89 | 79 | 79 | 76 | 72 |
| Administrative | 81 | 83 | 76 | 67 | 82 | 86 | 83 | 89 | 79 | 79 | 76 | 72 |
| Survey | 66 | NA | NA | NA | NA | 79 | 76 | 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.

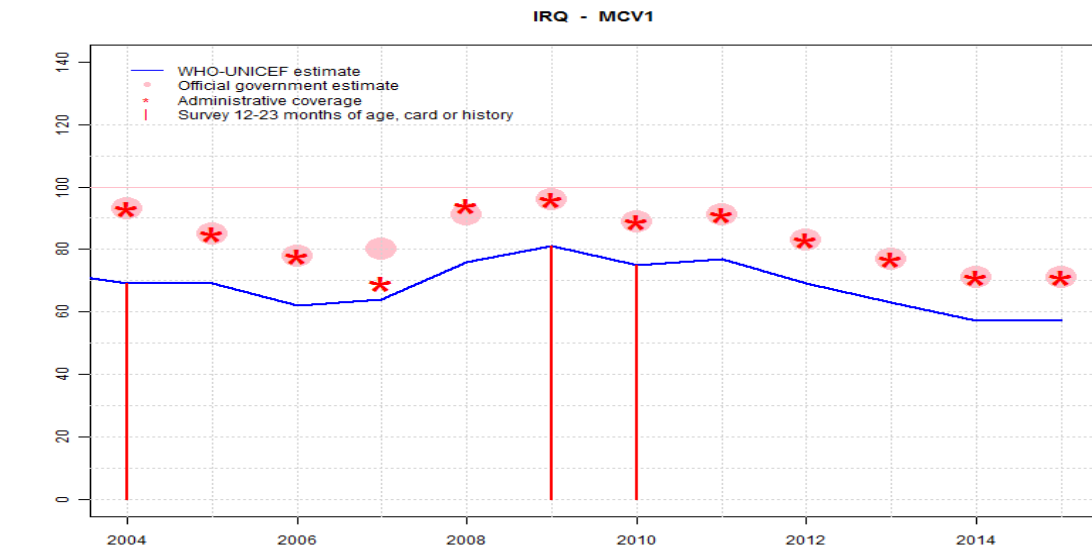
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2004: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 69 percent based on 1 survey(s). Iraq Multiple Indicator Cluster Survey 2006 card or history results of 66 percent modified for recall bias to 69 percent based on 1st dose card or history coverage of 91 percent, 1st dose card only coverage of 49 percent and 3d dose card only coverage of 37 percent. Estimate challenged by: D-R-
- 2005: Service and reporting system effected by local situation Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2009 levels. GoC=S+ D+
- 2008: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-S-
- 2009: Card-based evidence from the 2010 MICS results shows identical coverage levels for Pol3 and DTP3. Estimate follows estimated DTP3 coverage. Iraq Multiple Indicator Cluster Survey 2011 card or history results of 79 percent modified for recall bias to 82 percent based on 1st dose card or history coverage of 92 percent, 1st dose card only coverage of 63 percent and 3d dose card only coverage of 56 percent. Estimate challenged by: D-R-S-
- 2010: Card-based evidence from the 2010 MICS results shows identical coverage levels for Pol3 and DTP3. Estimate follows estimated DTP3 coverage. Iraq Multiple Indicator Cluster Survey 2011 results ignored by working group. Recall-based survey results likely include campaign doses. Survey results ignored. Iraq Multiple Indicator Cluster Survey 2011 card or history results of 76 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 91 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 57 percent. Estimate challenged by: D-R-S-
- 2011: Reported data calibrated to 2010 levels. Estimate challenged by: D-S-
- 2012: Reported data calibrated to 2010 levels. Estimate challenged by: D-S-
- 2013: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2014: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2015: Reported data calibrated to 2010 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

Iraq - MCV1



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 69 | 69 | 62 | 64 | 76 | 81 | 75 | 77 | 69 | 63 | 57 | 57 |
| Estimate GoC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Official | 93 | 85 | 78 | 80 | 91 | 96 | 89 | 91 | 83 | 77 | 71 | 71 |
| Administrative | 93 | 85 | 78 | 69 | 94 | 96 | 89 | 91 | 83 | 77 | 71 | 71 |
| Survey | 69 | NA | NA | NA | NA | 81 | 75 | 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.

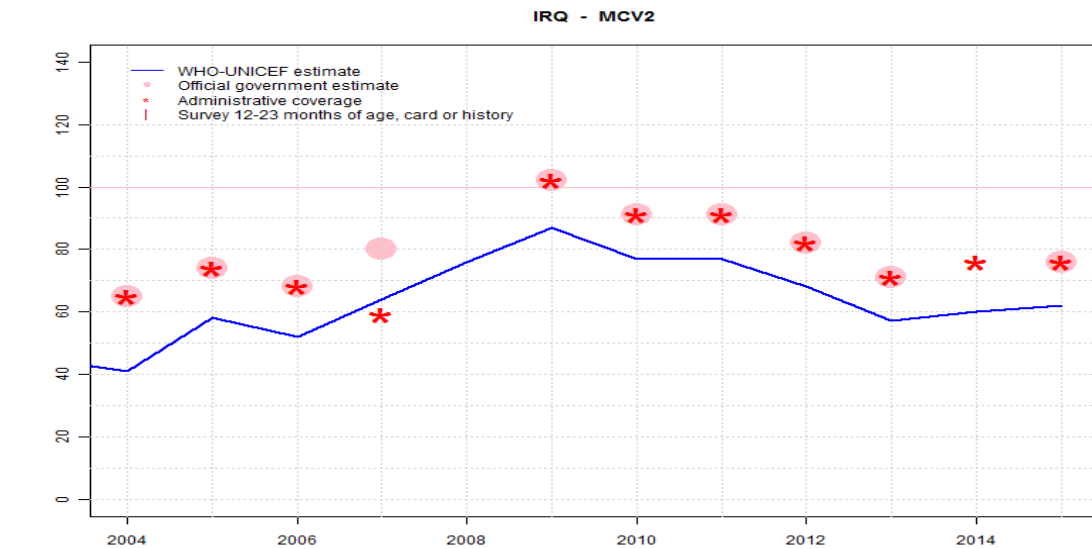
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2004: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 69 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2005: Service and reporting system effected by local situation Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2008: Reported data calibrated to 2005 and 2009 levels. Estimate challenged by: D-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 81 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2010: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 75 percent based on 1 survey(s). Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2012: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2013: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2014: Reported data calibrated to 2010 levels. Programme reports five months stock-out of measles containing vaccine at national level. Estimate challenged by: D-
- 2015: Reported data calibrated to 2010 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

Iraq - MCV2



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 41 | 58 | 52 | 64 | 76 | 87 | 77 | 77 | 68 | 57 | 60 | 62 |
| Estimate GoC | • | • | • | • | • | • | • | • | • | • | • | • |
| Official | 65 | 74 | 68 | 80 | NA | 102 | 91 | 91 | 82 | 71 | NA | 76 |
| Administrative | 65 | 74 | 68 | 59 | NA | 102 | 91 | 91 | 82 | 71 | 76 | 76 |
| 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.

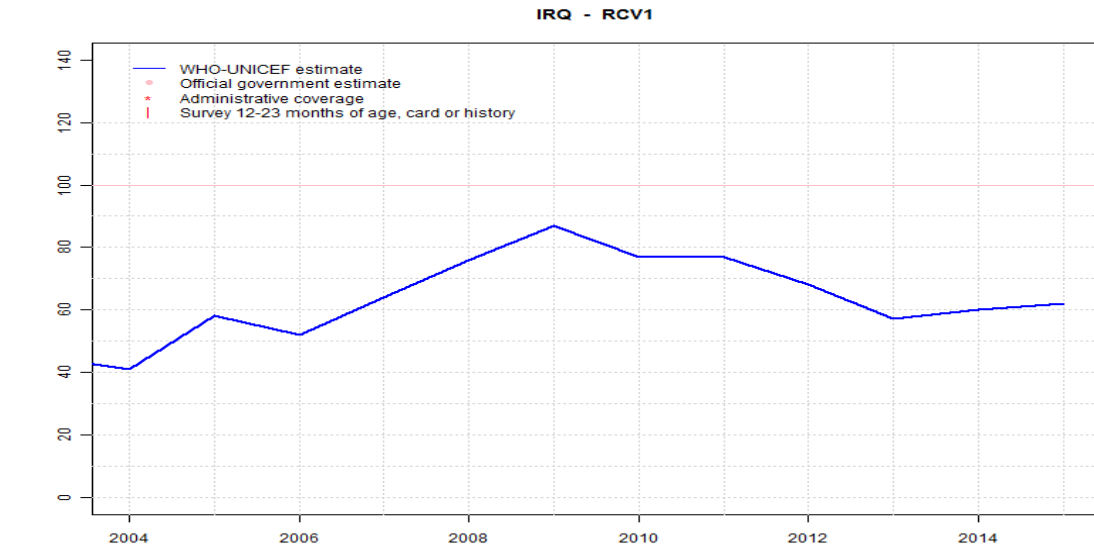
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

- 2004: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2005: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2006: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2007: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: R-
- 2008: Reported data calibrated to 2007 and 2009 levels. GoC=No accepted empirical data
- 2009: Estimate follows reported data calibrated based on MCV adjustment factor. Reported data excluded. 102 percent greater than 100 percent. Estimate challenged by: D-
- 2010: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2011: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2012: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2013: Estimate follows reported data calibrated based on MCV adjustment factor. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2013 levels. Reported data excluded. Programme reports five months stock-out of measles containing vaccine at national level. There is no apparent impact of the stock-out on reported coverage. In fact, counterintuitively the reported administrative coverage increased. Estimate of 60 percent changed from previous revision value of 57 percent. Estimate challenged by: D-
- 2015: Reported data calibrated to 2013 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

Iraq - RCV1



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 41 | 58 | 52 | 64 | 76 | 87 | 77 | 77 | 68 | 57 | 60 | 62 |
| Estimate GoC | • | • | • | • | • | • | • | • | • | • | • | • |
| Official | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Administrative | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Survey | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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

- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

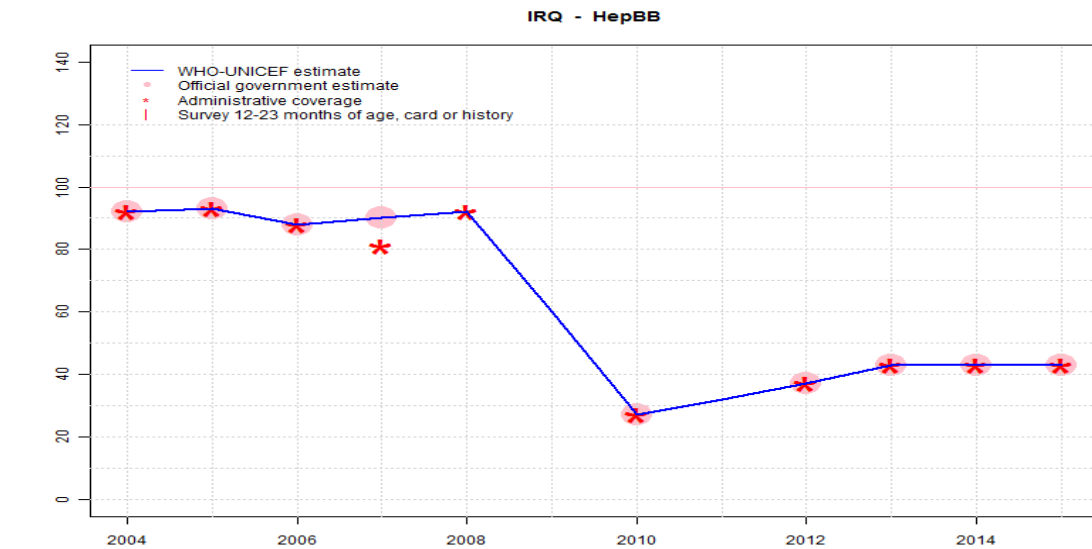
In all cases these estimates should be used with caution and should be assessed in light of the objective for which they are being used.

Description:

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

- 2004: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2005: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2006: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2007: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: R-
- 2008: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate GoC=No accepted empirical data
- 2009: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-
- 2010: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2011: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2012: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2013: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-R-
- 2014: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate Estimate challenged by: D-
- 2015: First dose of rubella vaccine given with second dose of measles containing vaccine. Estimate based on MCV2 estimate No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

Iraq - HepBB



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 92 | 93 | 88 | 90 | 92 | 60 | 27 | 32 | 37 | 43 | 43 | 43 |
| Estimate GoC | • | • | • | •• | • | • | •• | • | •• | •• | •• | •• |
| Official | 92 | 93 | 88 | 90 | NA | NA | 27 | NA | 37 | 43 | 43 | 43 |
| Administrative | 92 | 93 | 88 | 81 | 92 | NA | 27 | NA | 37 | 43 | 43 | 43 |
| 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.

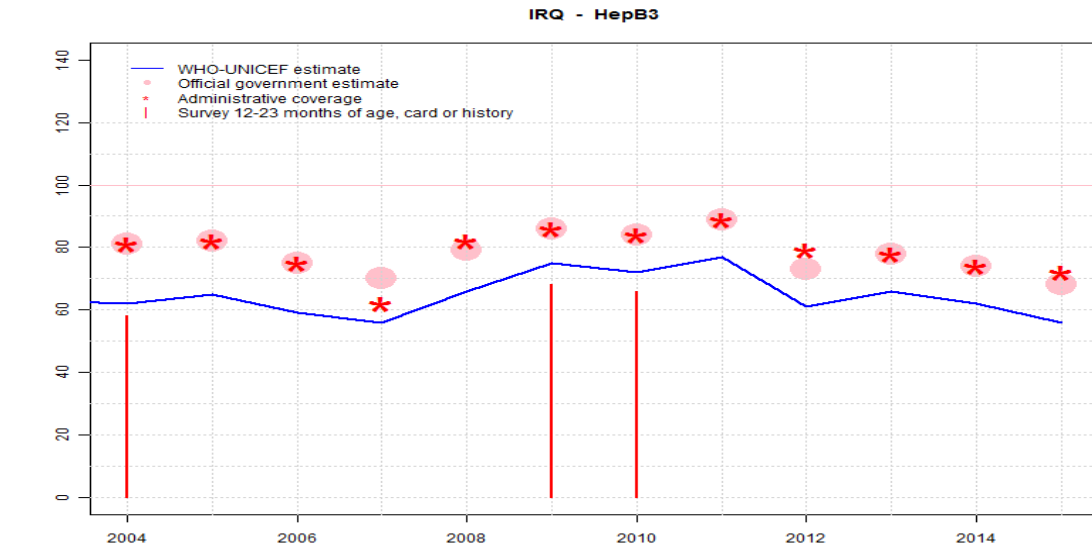
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2004: Estimate based on coverage reported by national government. HepB birth dose introduced 2004. Estimate challenged by: D-
- 2005: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2006: Estimate based on coverage reported by national government. Estimate challenged by: D-
- 2007: Estimate based on coverage reported by national government. GoC=R+ D+
- 2008: Estimate based on reported administrative estimate. Estimate challenged by: D-
- 2009: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2010: Estimate based on coverage reported by national government. Decline in coverage is unexplained. GoC=R+ D+
- 2011: Estimate based on interpolation between reported values. GoC=No accepted empirical data
- 2012: Estimate based on coverage reported by national government. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. GoC=R+ D+
- 2014: Estimate based on coverage reported by national government. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. GoC=R+ D+

Iraq - HepB3



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 62 | 65 | 59 | 56 | 66 | 75 | 72 | 77 | 61 | 66 | 62 | 56 |
| Estimate GoC | • | • | • | • | • | • | • | • | • | • | • | • |
| Official | 81 | 82 | 75 | 70 | 79 | 86 | 84 | 89 | 73 | 78 | 74 | 68 |
| Administrative | 81 | 82 | 75 | 62 | 82 | 86 | 84 | 89 | 79 | 78 | 74 | 72 |
| Survey | 58 | NA | NA | NA | NA | 68 | 66 | 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.

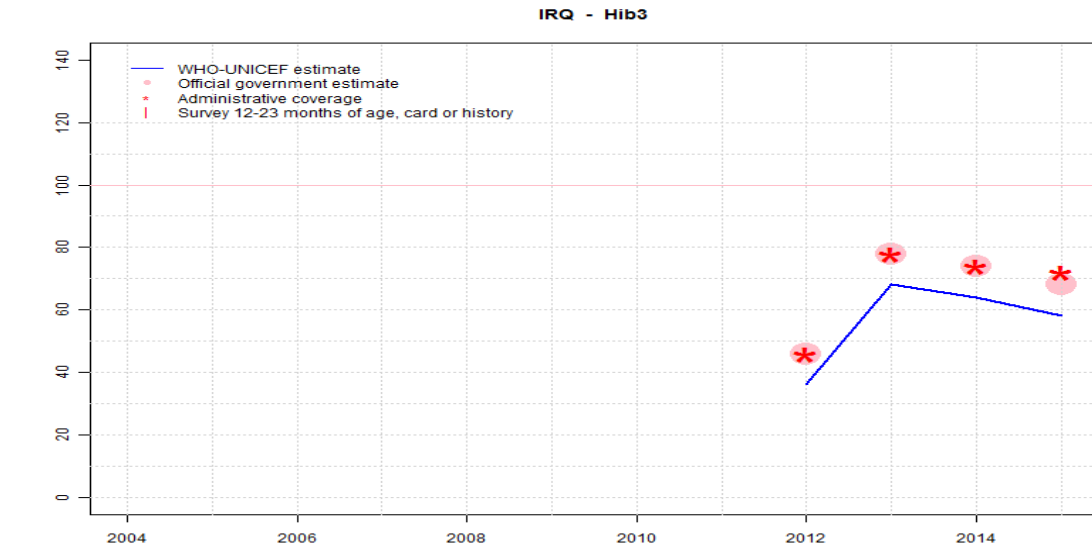
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk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

- 2004: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 62 percent based on 1 survey(s). Iraq Multiple Indicator Cluster Survey 2006 card or history results of 58 percent modified for recall bias to 62 percent based on 1st dose card or history coverage of 88 percent, 1st dose card only coverage of 54 percent and 3d dose card only coverage of 38 percent. Estimate challenged by: D-R-
- 2005: Estimate based on interpolation between 2004 and 2009 levels. Service and reporting system effected by local situation Estimate challenged by: D-R-
- 2006: Reported data calibrated to 2004 and 2009 levels. Estimate challenged by: D-
- 2007: Reported data calibrated to 2004 and 2009 levels. Estimate challenged by: D-
- 2008: Reported data calibrated to 2004 and 2009 levels. Estimate challenged by: D-
- 2009: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 75 percent based on 1 survey(s). Iraq Multiple Indicator Cluster Survey 2011 card or history results of 68 percent modified for recall bias to 75 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 66 percent and 3d dose card only coverage of 55 percent. Estimate challenged by: D-R-
- 2010: Survey evidence does not support reported data. Estimate based on survey results. Survey evidence of 72 percent based on 1 survey(s). Iraq Multiple Indicator Cluster Survey 2011 card or history results of 66 percent modified for recall bias to 72 percent based on 1st dose card or history coverage of 89 percent, 1st dose card only coverage of 70 percent and 3d dose card only coverage of 57 percent. Estimate challenged by: D-R-
- 2011: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2012: Reported data calibrated to 2010 levels. DTP-HepB-Hib pentavalent vaccine introduced in 2012. Estimate challenged by: D-
- 2013: Reported data calibrated to 2010 levels. Estimate challenged by: D-
- 2014: Reported data calibrated to 2010 levels. Programme reports four months stock-out at national level. Estimate challenged by: D-
- 2015: Reported data calibrated to 2010 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports a 5 month national level stock-out of DTP-HepB-Hib vaccine. Estimate challenged by: D-

Iraq - Hib3



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | NA | NA | NA | NA | NA | NA | NA | NA | 36 | 68 | 64 | 58 |
| Estimate GoC | NA | NA | NA | NA | NA | NA | NA | NA | • | • | • | • |
| Official | NA | NA | NA | NA | NA | NA | NA | NA | 46 | 78 | 74 | 68 |
| Administrative | NA | NA | NA | NA | NA | NA | NA | NA | 46 | 78 | 74 | 72 |
| Survey | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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

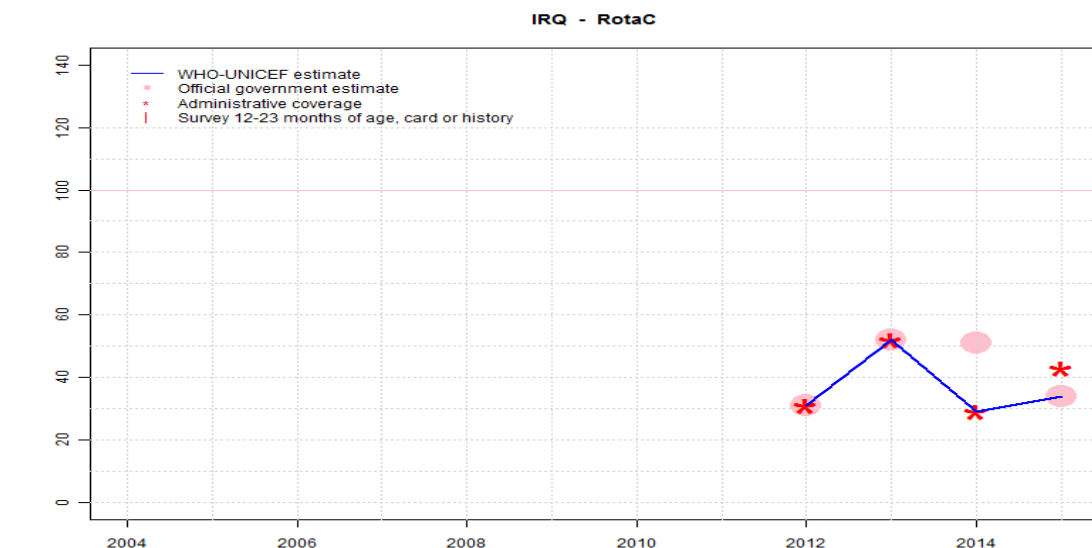
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2012: Reported data calibrated to 2013 levels. Hib vaccine introduced in 2012. The presentations are DTP-Hib and DTP-HepB-Hib. Estimate challenged by: D-
- 2013: Estimate is based on DTP3 coverage level. Estimate challenged by: D-R-
- 2014: Reported data calibrated to 2013 levels. Programme reports four months stock-out at national level. Estimate challenged by: D-
- 2015: Reported data calibrated to 2013 levels. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Programme reports a 5 month national level stock-out of DTP-HepB-Hib vaccine. Estimate challenged by: D-

Iraq - RotaC



| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | NA | NA | NA | NA | NA | NA | NA | NA | 31 | 52 | 29 | 34 |
| Estimate GoC | NA | NA | NA | NA | NA | NA | NA | NA | •• | •• | •• | • |
| Official | NA | NA | NA | NA | NA | NA | NA | NA | 31 | 52 | 51 | 34 |
| Administrative | NA | NA | NA | NA | NA | NA | NA | NA | 31 | 52 | 29 | 43 |
| Survey | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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

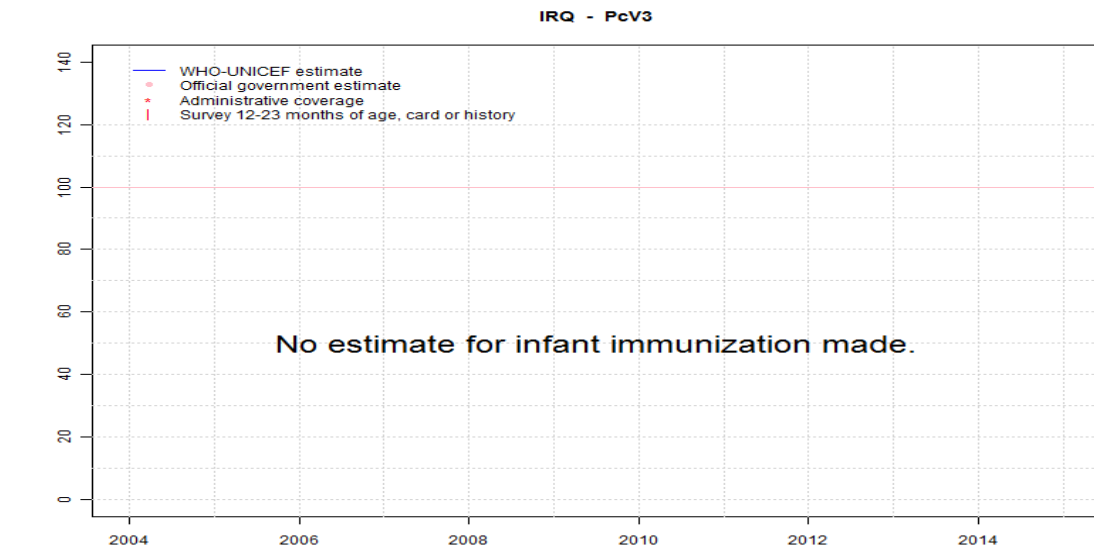
- Estimate is supported by reported data [R+], coverage recalculated with an independent denominator from the World Population Prospects: 2015 revision from the UN Population Division (D+), and at least one supporting survey within 2 years [S+]. While well supported, the estimate still carries a risk of being wrong.
- Estimate is supported by at least one data source; [R+], [S+], or [D+]; and no data source, [R-], [D-], or [S-], challenges the estimate.
- There are no directly supporting data; or data from at least one source; [R-], [D-], [S-]; challenge the estimate.

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

Description:

- 2012: Estimate based on coverage reported by national government. Rotavirus vaccine introduced in 2012. GoC=R+ D+
- 2013: Estimate based on coverage reported by national government. Estimate is based on reported data. GoC=R+ D+
- 2014: Estimate based on reported administrative estimate. Estimate is based on reported data. Programme reports five months stock-out at national level. GoC=R+ D+
- 2015: Estimate based on coverage reported by national government. No nationally representative household survey within the last 5 years. WHO and UNICEF recommend a high-quality survey to confirm reported levels of coverage. Estimate challenged by: D-

Iraq - PcV3



| | 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.

Iraq - survey details

2010 Iraq Multiple Indicator Cluster Survey 2011

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | C or H <12 months | 90 | 12-23 m | - | 70 |
| BCG | Card | 68 | 12-23 m | - | 70 |
| BCG | Card or History | 90 | 12-23 m | 7487 | 70 |
| BCG | History | 22 | 12-23 m | - | 70 |
| DTP1 | C or H <12 months | 85 | 12-23 m | - | 70 |
| DTP1 | Card | 66 | 12-23 m | - | 70 |
| DTP1 | Card or History | 86 | 12-23 m | 7487 | 70 |
| DTP1 | History | 20 | 12-23 m | - | 70 |
| DTP3 | C or H <12 months | 65 | 12-23 m | - | 70 |
| DTP3 | Card | 57 | 12-23 m | - | 70 |
| DTP3 | Card or History | 70 | 12-23 m | 7487 | 70 |
| DTP3 | History | 13 | 12-23 m | - | 70 |
| HepB1 | C or H <12 months | 88 | 12-23 m | - | 70 |
| HepB1 | Card | 70 | 12-23 m | - | 70 |
| HepB1 | Card or History | 89 | 12-23 m | 7487 | 70 |
| HepB1 | History | 19 | 12-23 m | - | 70 |
| HepB3 | C or H <12 months | 61 | 12-23 m | - | 70 |
| HepB3 | Card | 57 | 12-23 m | - | 70 |
| HepB3 | Card or History | 66 | 12-23 m | 7487 | 70 |
| HepB3 | History | 9 | 12-23 m | - | 70 |
| MCV1 | C or H <12 months | 66 | 12-23 m | - | 70 |
| MCV1 | Card | 54 | 12-23 m | - | 70 |
| MCV1 | Card or History | 75 | 12-23 m | 7487 | 70 |
| MCV1 | History | 21 | 12-23 m | - | 70 |
| Pol1 | C or H <12 months | 90 | 12-23 m | - | 70 |
| Pol1 | Card | 67 | 12-23 m | - | 70 |
| Pol1 | Card or History | 91 | 12-23 m | 7487 | 70 |
| Pol1 | History | 24 | 12-23 m | - | 70 |
| Pol3 | C or H <12 months | 71 | 12-23 m | - | 70 |
| Pol3 | Card | 57 | 12-23 m | - | 70 |
| Pol3 | Card or History | 76 | 12-23 m | 7487 | 70 |
| Pol3 | History | 19 | 12-23 m | - | 70 |

2009 Iraq Multiple Indicator Cluster Survey 2011

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | C or H <12 months | 91 | 18-29 m | - | 70 |
| BCG | Card | 65 | 18-29 m | - | 70 |
| BCG | Card or History | 92 | 18-29 m | 7524 | 70 |
| BCG | History | 27 | 18-29 m | - | 70 |
| DTP1 | C or H <12 months | 86 | 18-29 m | - | 70 |
| DTP1 | Card | 63 | 18-29 m | - | 70 |
| DTP1 | Card or History | 88 | 18-29 m | 7524 | 70 |
| DTP1 | History | 25 | 18-29 m | - | 70 |
| DTP3 | C or H <12 months | 65 | 18-29 m | - | 70 |
| DTP3 | Card | 56 | 18-29 m | - | 70 |
| DTP3 | Card or History | 73 | 18-29 m | 7524 | 70 |
| DTP3 | History | 18 | 18-29 m | - | 70 |
| HepB1 | C or H <12 months | 89 | 18-29 m | - | 70 |
| HepB1 | Card | 66 | 18-29 m | - | 70 |
| HepB1 | Card or History | 90 | 18-29 m | 7524 | 70 |
| HepB1 | History | 24 | 18-29 m | - | 70 |
| HepB3 | C or H <12 months | 60 | 18-29 m | - | 70 |
| HepB3 | Card | 55 | 18-29 m | - | 70 |
| HepB3 | Card or History | 68 | 18-29 m | 7524 | 70 |
| HepB3 | History | 13 | 18-29 m | - | 70 |
| MCV1 | C or H <18 months | 77 | 18-29 m | - | 70 |
| MCV1 | Card | 55 | 18-29 m | - | 70 |
| MCV1 | Card or History | 81 | 18-29 m | 7524 | 70 |
| MCV1 | History | 26 | 18-29 m | - | 70 |
| Pol1 | C or H <12 months | 90 | 18-29 m | - | 70 |
| Pol1 | Card | 63 | 18-29 m | - | 70 |
| Pol1 | Card or History | 92 | 18-29 m | 7524 | 70 |
| Pol1 | History | 29 | 18-29 m | - | 70 |
| Pol3 | C or H <12 months | 70 | 18-29 m | - | 70 |
| Pol3 | Card | 56 | 18-29 m | - | 70 |
| Pol3 | Card or History | 79 | 18-29 m | 7524 | 70 |
| Pol3 | History | 23 | 18-29 m | - | 70 |

2004 Iraq Multiple Indicator Cluster Survey 2006

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | C or H <12 months | 91 | 18-29 m | 3329 | 55 |
| BCG | Card | 54 | 18-29 m | 3329 | 55 |

Iraq - survey details

| | | | | | |
|-------|-------------------|----|---------|------|----|
| BCG | Card or History | 92 | 18-29 m | 3329 | 55 |
| BCG | History | 39 | 18-29 m | 3329 | 55 |
| DTP1 | C or H <12 months | 82 | 18-29 m | 3329 | 55 |
| DTP1 | Card | 49 | 18-29 m | 3329 | 55 |
| DTP1 | Card or History | 84 | 18-29 m | 3329 | 55 |
| DTP1 | History | 36 | 18-29 m | 3329 | 55 |
| DTP3 | C or H <12 months | 53 | 18-29 m | 3329 | 55 |
| DTP3 | Card | 38 | 18-29 m | 3329 | 55 |
| DTP3 | Card or History | 62 | 18-29 m | 3329 | 55 |
| DTP3 | History | 24 | 18-29 m | 3329 | 55 |
| HepB1 | C or H <12 months | 87 | 18-29 m | 3329 | 55 |
| HepB1 | Card | 54 | 18-29 m | 3329 | 55 |
| HepB1 | Card or History | 88 | 18-29 m | 3329 | 55 |
| HepB1 | History | 34 | 18-29 m | 3329 | 55 |
| HepB3 | C or H <12 months | 49 | 18-29 m | 3329 | 55 |
| HepB3 | Card | 38 | 18-29 m | 3329 | 55 |
| HepB3 | Card or History | 58 | 18-29 m | 3329 | 55 |
| HepB3 | History | 19 | 18-29 m | 3329 | 55 |
| MCV1 | Card | 39 | 18-29 m | 3329 | 55 |
| MCV1 | Card or History | 69 | 18-29 m | 3329 | 55 |
| MCV1 | History | 31 | 18-29 m | 3329 | 55 |

| | | | | | |
|------|-------------------|----|---------|------|----|
| Pol1 | C or H <12 months | 88 | 18-29 m | 3329 | 55 |
| Pol1 | Card | 49 | 18-29 m | 3329 | 55 |
| Pol1 | Card or History | 91 | 18-29 m | 3329 | 55 |
| Pol1 | History | 42 | 18-29 m | 3329 | 55 |
| Pol3 | C or H <12 months | 57 | 18-29 m | 3329 | 55 |
| Pol3 | Card | 37 | 18-29 m | 3329 | 55 |
| Pol3 | Card or History | 66 | 18-29 m | 3329 | 55 |
| Pol3 | History | 28 | 18-29 m | 3329 | 55 |

1999 Iraq Multiple Indicator Cluster Survey 2000

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | Card or History | 93 | 12-23 m | 434 | 78 |
| DTP1 | Card or History | 93 | 12-23 m | 434 | 78 |
| DTP3 | Card or History | 81 | 12-23 m | 434 | 78 |
| MCV1 | Card or History | 90 | 12-23 m | 434 | 78 |
| Pol1 | Card or History | 96 | 12-23 m | 434 | 78 |
| Pol3 | Card or History | 87 | 12-23 m | 434 | 78 |

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

Iraq

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 | 88 |
| 2005 | 71 |
| 2006 | 70 |
| 2007 | 69 |
| 2008 | 69 |
| 2009 | 69 |
| 2010 | 80 |
| 2011 | 85 |
| 2012 | 85 |
| 2013 | 72 |
| 2014 | 72 |
| 2015 | 72 |

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