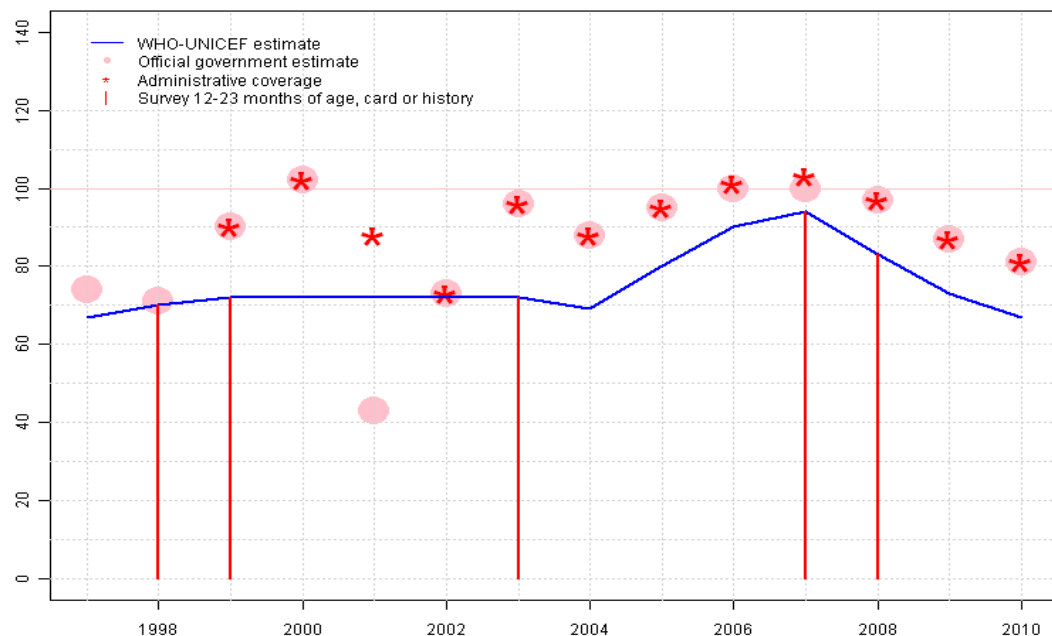


# Madagascar - BCG

MDG - BCG



|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | 67   | 70   | 72   | 72   | 72   | 72   | 72   | 69   | 80   | 90   | 94   | 83   | 73   | 67   |
| Official       | 74   | 71   | 90   | 102  | 43   | 73   | 96   | 88   | 95   | 100  | 100  | 97   | 87   | 81   |
| Administrative | NA   | NA   | 90   | 102  | 88   | 73   | 96   | 88   | 95   | 101  | 103  | 97   | 87   | 81   |
| Survey         | NA   | 70   | 72   | NA   | NA   | NA   | 72   | NA   | NA   | NA   | 94   | 83   | NA   | NA   |

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. Survey results not accepted. Sample size 0 less than 300. Fluctuating and inconsistent data suggest poor reporting.

1999: Estimate based on survey results. Survey results not accepted. Sample size 0 less than 300.

2000: Estimate based on interpolation between 1999 and 2003. Reported data of 102 percent greater than 100 percent. Reported data not accepted due to an increase from 90 percent to 102 percent with a subsequent decrease to 43 percent. Fluctuating and inconsistent data suggest poor reporting.

2001: Estimate based on interpolation between 1999 and 2003. Reported data not accepted due to a decline from 102 percent to 43 percent with a subsequent increase to 73 percent. Fluctuating and inconsistent data suggest poor reporting.

2002: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Estimate based on survey results. 72 percent survey results does not support reported data of 96 percent.

2004: Reported data calibrated to 2003 and 2007 levels.

2005: Reported data calibrated to 2003 and 2007 levels.

2006: Reported data calibrated to 2003 and 2007 levels.

2007: Estimate based on survey results.

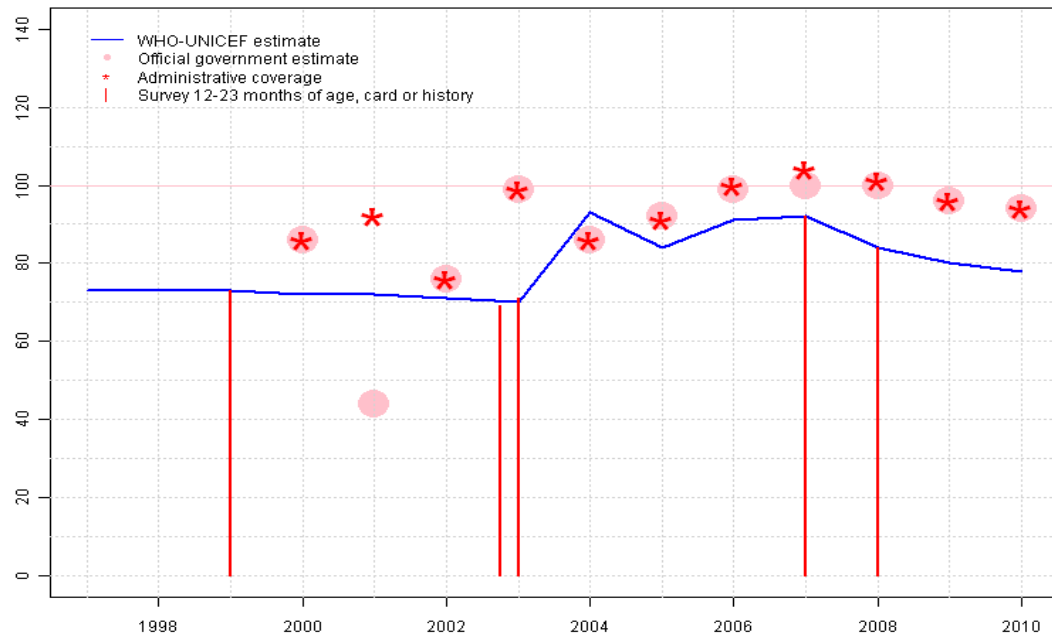
2008: Estimate based on survey results. 83 percent survey results does not support reported data of 97 percent.

2009: Estimate based on 2008 estimate calibrated to match the change in reported data from 2008 to 2009. Ministry of Health reports 15 days of vaccine shortage.

2010: Reported data 81 percent calibrated to 2009 levels.

# Madagascar - DTP1

MDG - DTP1



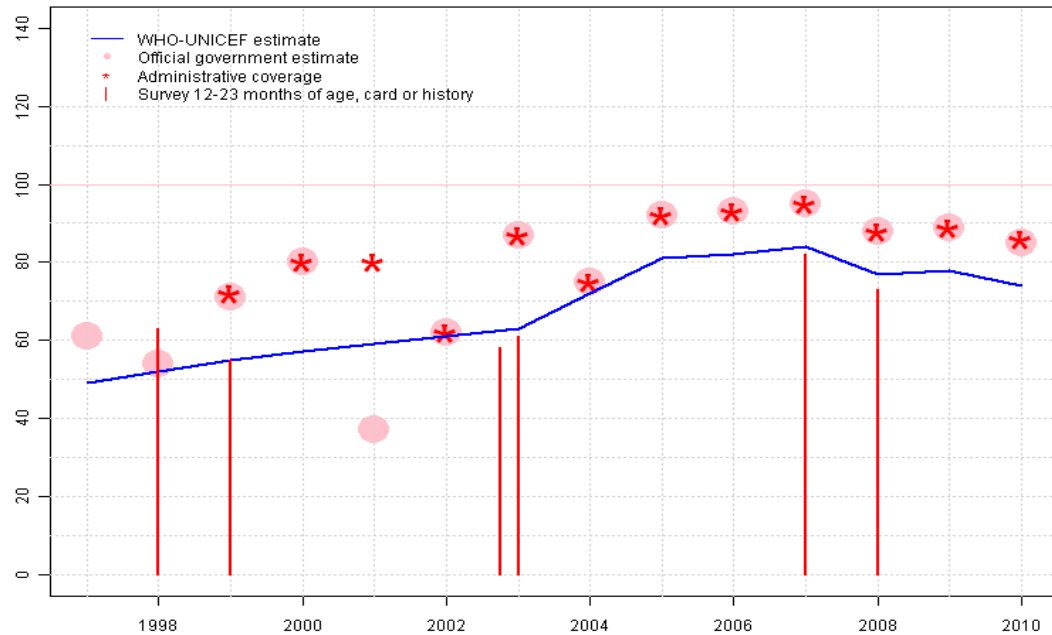
|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | 73   | 73   | 73   | 72   | 72   | 71   | 70   | 93   | 84   | 91   | 92   | 84   | 80   | 78   |
| Official       | NA   | NA   | NA   | 86   | 44   | 76   | 99   | 86   | 92   | 99   | 100  | 100  | 96   | 94   |
| Administrative | NA   | NA   | NA   | 86   | 92   | 76   | 99   | 86   | 91   | 100  | 104  | 101  | 96   | 94   |
| Survey         | NA   | NA   | 73   | NA   | NA   | NA   | *    | NA   | NA   | NA   | 92   | 84   | NA   | NA   |

## Description:

- 1997: Legacy estimate.
- 1998: Estimate based on interpolation between 1997 and 1999.
- 1999: Estimate based on survey results. Survey results not accepted. Sample size 0 less than 300.
- 2000: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.
- 2001: Estimate based on interpolation between 1999 and 2003. Reported data not accepted due to a decline from 86 percent to 44 percent with a subsequent increase to 76 percent. Fluctuating and inconsistent data suggest poor reporting.
- 2002: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.
- 2003: Estimate based on survey results. Reported data not accepted due to an increase from 76 percent to 99 percent with a subsequent decrease to 86 percent.
- 2004: Estimated DTP3 coverage of 82 percent greater than DTP1 coverage of 78 percent. Estimated based on relationship between DTP1 and DTP3. Current estimate of 93 percent changed from previous revision value of 76 percent.
- 2005: Reported data calibrated to 2003 and 2007 levels. Current estimate of 84 percent changed from previous revision value of 83 percent.
- 2006: Reported data calibrated to 2003 and 2007 levels.
- 2007: Estimate based on survey results.
- 2008: Estimate based on survey results. 84 percent survey results does not support reported data of 100 percent.
- 2009: Estimate based on 2008 estimate calibrated to match the change in reported data from 2008 to 2009.
- 2010: Reported data 94 percent calibrated to 2009 levels.

# Madagascar - DTP3

MDG - DTP3



|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | 49   | 52   | 55   | 57   | 59   | 61   | 63   | 72   | 81   | 82   | 84   | 77   | 78   | 74   |
| Official       | 61   | 54   | 71   | 80   | 37   | 62   | 87   | 75   | 92   | 93   | 95   | 88   | 89   | 85   |
| Administrative | NA   | NA   | 72   | 80   | 80   | 62   | 87   | 75   | 92   | 93   | 95   | 88   | 89   | 86   |
| Survey         | NA   | 63   | 55   | NA   | NA   | NA   | *    | NA   | NA   | NA   | 82   | 73   | NA   | NA   |

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. Survey results not accepted. Sample size 0 less than 300. Fluctuating and inconsistent data suggest poor reporting.

1999: Estimate based on survey results. Survey results not accepted. Sample size 0 less than 300.

2000: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2001: Estimate based on interpolation between 1999 and 2003. Reported data not accepted due to a decline from 80 percent to 37 percent with a subsequent increase to 62 percent. Fluctuating and inconsistent data suggest poor reporting.

2002: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Estimate based on survey results. Reported data not accepted due to an increase from 62 percent to 87 percent with a subsequent decrease to 75 percent. Survey results of 61 percent modified for recall bias to 64 percent based on 1st dose card or history coverage of 71 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 43 percent. Survey results of 58 percent modified for recall bias to 64 percent based on 1st dose card or history coverage of 71 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 43 percent. Survey results of 61 percent modified for recall bias to 62 percent based on 1st dose card or history coverage of 69 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 43 percent. Survey results of 58 percent modified for recall bias to 62 percent based on 1st dose card or history coverage of 69 percent, 1st dose card only coverage of 48 percent and 3d dose card only coverage of 43 percent.

2004: Estimate based on interpolation between 2003 and 2005. Reported data not accepted due to a decline from 87 percent to 75 percent with a subsequent increase to 92 percent.

2005: Reported data calibrated to 2003 and 2007 levels. Current estimate of 81 percent changed from previous revision value of 82 percent.

2006: Reported data calibrated to 2003 and 2007 levels. Current estimate of 82 percent changed from previous revision value of 83 percent.

2007: Estimate based on survey results. 84 percent survey results does not support reported data of 95 percent. Survey results of 82 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 92 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 61 percent.

2008: Estimate based on survey results. 77 percent survey results does not sup-

# Madagascar - DTP3

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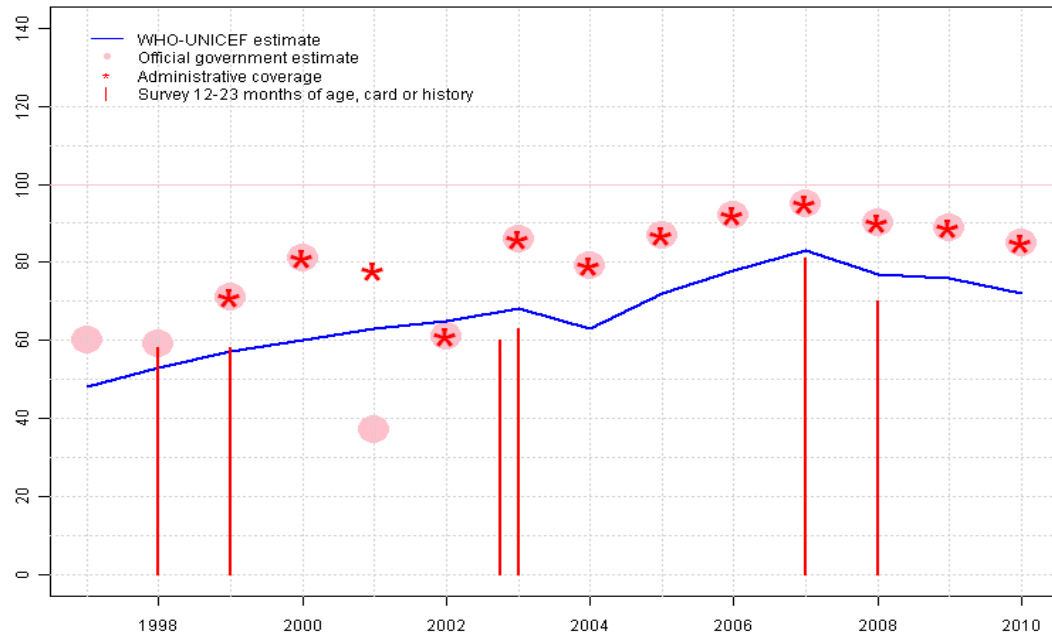
port reported data of 88 percent. Survey results of 73 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 84 percent, 1st dose card only coverage of 60 percent and 3d dose card only coverage of 55 percent.

2009: Estimate based on 2008 estimate calibrated to match the change in reported data from 2008 to 2009.

2010: Reported data 85 percent calibrated to 2009 levels.

# Madagascar - Pol3

MDG - Pol3



|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | 48   | 53   | 57   | 60   | 63   | 65   | 68   | 63   | 72   | 78   | 83   | 77   | 76   | 72   |
| Official       | 60   | 59   | 71   | 81   | 37   | 61   | 86   | 79   | 87   | 92   | 95   | 90   | 89   | 85   |
| Administrative | NA   | NA   | 71   | 81   | 78   | 61   | 86   | 79   | 87   | 92   | 95   | 90   | 89   | 85   |
| Survey         | NA   | 58   | 58   | NA   | NA   | NA   | *    | NA   | NA   | NA   | 81   | 70   | NA   | NA   |

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. Survey results not accepted. Sample size 0 less than 300. Fluctuating and inconsistent data suggest poor reporting.

1999: Estimate based on survey results. Survey results not accepted. Sample size 0 less than 300.

2000: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2001: Estimate based on interpolation between 1999 and 2003. Reported data not accepted due to a decline from 81 percent to 37 percent with a subsequent increase to 61 percent. Fluctuating and inconsistent data suggest poor reporting.

2002: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Estimate based on survey results. \*Summary survey results of 68 percent based on 8 surveys (see survey summary page) does not support reported data of 86 percent. Survey results of 63 percent modified for recall bias to 69 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 49 percent and 3d dose card only coverage of 44 percent. Survey results of 60 percent modified for recall bias to 69 percent based on 1st dose card or history coverage of 77 percent, 1st dose card only coverage of 49 percent and 3d dose card only coverage of 44 percent. Survey results of 63 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 75 percent, 1st dose card only coverage of 49 percent and 3d dose card only coverage of 44 percent. Survey results of 60 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 75 percent, 1st dose card only coverage of 49 percent and 3d dose card only coverage of 44 percent.

2004: Reported data calibrated to 2003 and 2007 levels.

2005: Reported data calibrated to 2003 and 2007 levels.

2006: Reported data calibrated to 2003 and 2007 levels.

2007: Estimate based on survey results. 83 percent survey results does not support reported data of 95 percent. Survey results of 81 percent modified for recall bias to 83 percent based on 1st dose card or history coverage of 90 percent, 1st dose card only coverage of 65 percent and 3d dose card only coverage of 60 percent.

2008: Estimate based on survey results. 77 percent survey results does not support reported data of 90 percent. Survey results of 70 percent modified for recall bias to 77 percent based on 1st dose card or history coverage of 84 percent, 1st dose card only coverage of 60 percent and 3d dose card only coverage of 55 percent.

# Madagascar - Pol3

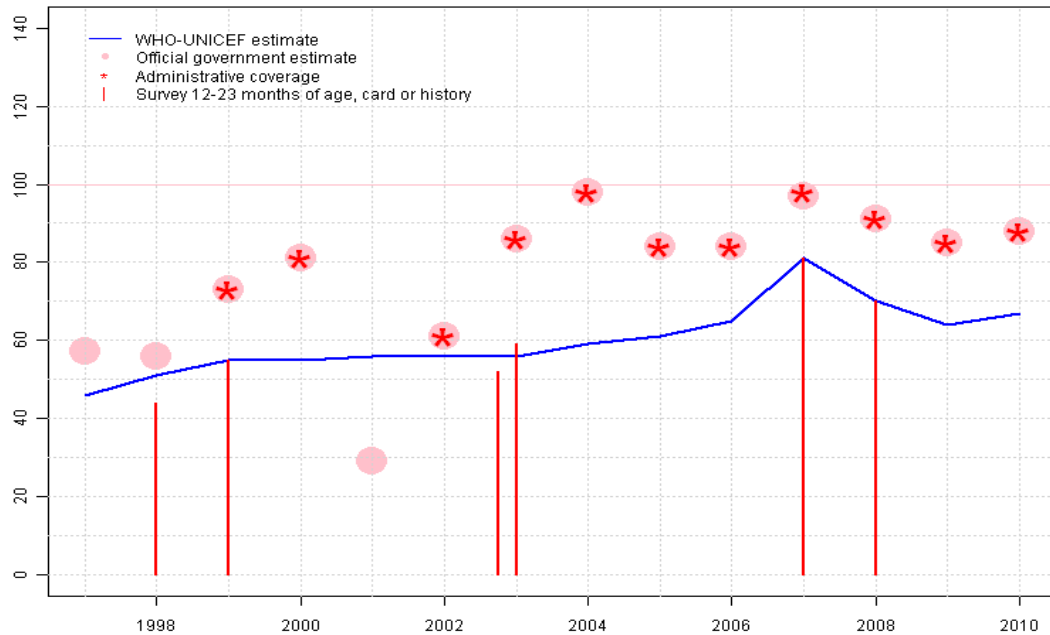
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2009: Estimate based on 2008 estimate calibrated to match the change in reported data from 2008 to 2009.

2010: Reported data 85 percent calibrated to 2009 levels.

# Madagascar - MCV

MDG - MCV



|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | 46   | 51   | 55   | 55   | 56   | 56   | 56   | 59   | 61   | 65   | 81   | 70   | 64   | 67   |
| Official       | 57   | 56   | 73   | 81   | 29   | 61   | 86   | 98   | 84   | 84   | 97   | 91   | 85   | 88   |
| Administrative | NA   | NA   | 73   | 81   | NA   | 61   | 86   | 98   | 84   | 84   | 98   | 91   | 85   | 88   |
| Survey         | NA   | 44   | 55   | NA   | NA   | NA   | *    | NA   | NA   | NA   | 81   | 70   | NA   | NA   |

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. Survey results not accepted. Sample size 0 less than 300. Fluctuating and inconsistent data suggest poor reporting.

1999: Estimate based on survey results. Survey results not accepted. Sample size 0 less than 300.

2000: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2001: Estimate based on interpolation between 1999 and 2003. Reported data not accepted due to a decline from 81 percent to 29 percent with a subsequent increase to 61 percent. Fluctuating and inconsistent data suggest poor reporting.

2002: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Estimate based on survey results. \*Summary survey results of 56 percent based on 2 surveys (see survey summary page) does not support reported data of 86 percent.

2004: Estimate based on interpolation between 2003 and 2005. Reported data not accepted due to an increase from 86 percent to 98 percent with a subsequent decrease to 84 percent. Current estimate of 59 percent changed from previous revision value of 58 percent.

2005: Reported data calibrated to 2003 and 2007 levels.

2006: Reported data calibrated to 2003 and 2007 levels.

2007: Estimate based on survey results. 81 percent survey results does not support reported data of 97 percent.

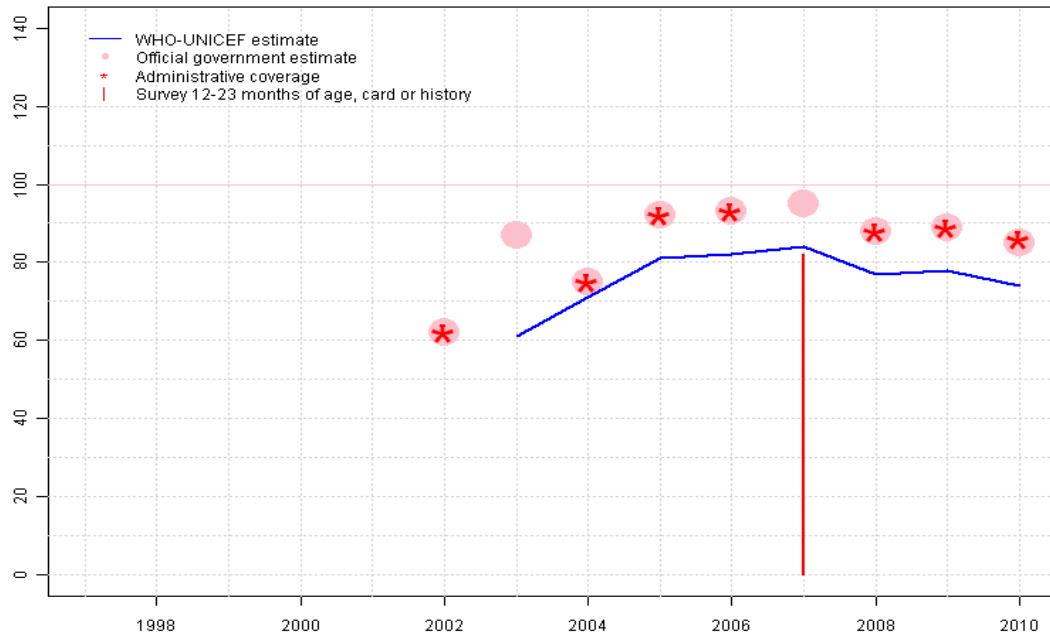
2008: Estimate based on survey results. 70 percent survey results does not support reported data of 91 percent.

2009: Estimate based on 2008 estimate calibrated to match the change in reported data from 2008 to 2009.

2010: Reported data 88 percent calibrated to 2009 levels.

# Madagascar - HepB3

MDG - HepB3



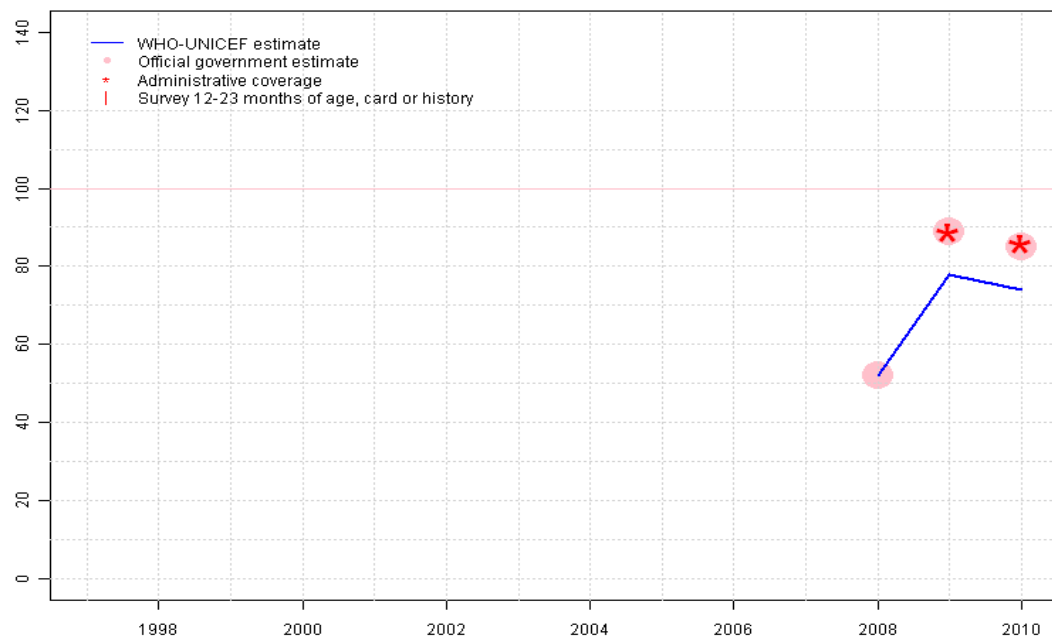
## Description:

- 2003: Estimate based on interpolation between 2002 and 2005. Reported data not accepted due to an increase from 62 percent to 87 percent with a subsequent decrease to 75 percent. HepB introduced in 2002. Reporting started in 2003. Current estimate of 61 percent changed from previous revision value of 59 percent.
- 2004: Estimate based on interpolation between 2002 and 2005. Reported data not accepted due to a decline from 87 percent to 75 percent with a subsequent increase to 92 percent. Current estimate of 71 percent changed from previous revision value of 69 percent.
- 2005: Reported data 92 percent calibrated to 2007 levels. Current estimate of 81 percent changed from previous revision value of 79 percent.
- 2006: Reported data 93 percent calibrated to 2007 levels. Current estimate of 82 percent changed from previous revision value of 80 percent.
- 2007: Estimate based on survey results. 84 percent survey results does not support reported data of 95 percent. Survey results of 82 percent modified for recall bias to 84 percent based on 1st dose card or history coverage of 92 percent, 1st dose card only coverage of 67 percent and 3d dose card only coverage of 61 percent. Current estimate of 84 percent changed from previous revision value of 82 percent.
- 2008: Reported data calibrated to 2007 and 2009 levels. Current estimate of 77 percent changed from previous revision value of 76 percent.
- 2009: Estimate follows DTP3 levels.
- 2010: Reported data 85 percent calibrated to 2009 levels.

|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | 61   | 71   | 81   | 82   | 84   | 77   | 78   | 74   |
| Official       | NA   | NA   | NA   | NA   | NA   | 62   | 87   | 75   | 92   | 93   | 95   | 88   | 89   | 85   |
| Administrative | NA   | NA   | NA   | NA   | NA   | 62   | NA   | 75   | 92   | 93   | NA   | 88   | 89   | 86   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 82   | NA   | NA   | NA   |

# Madagascar - Hib3

MDG - Hib3



## Description:

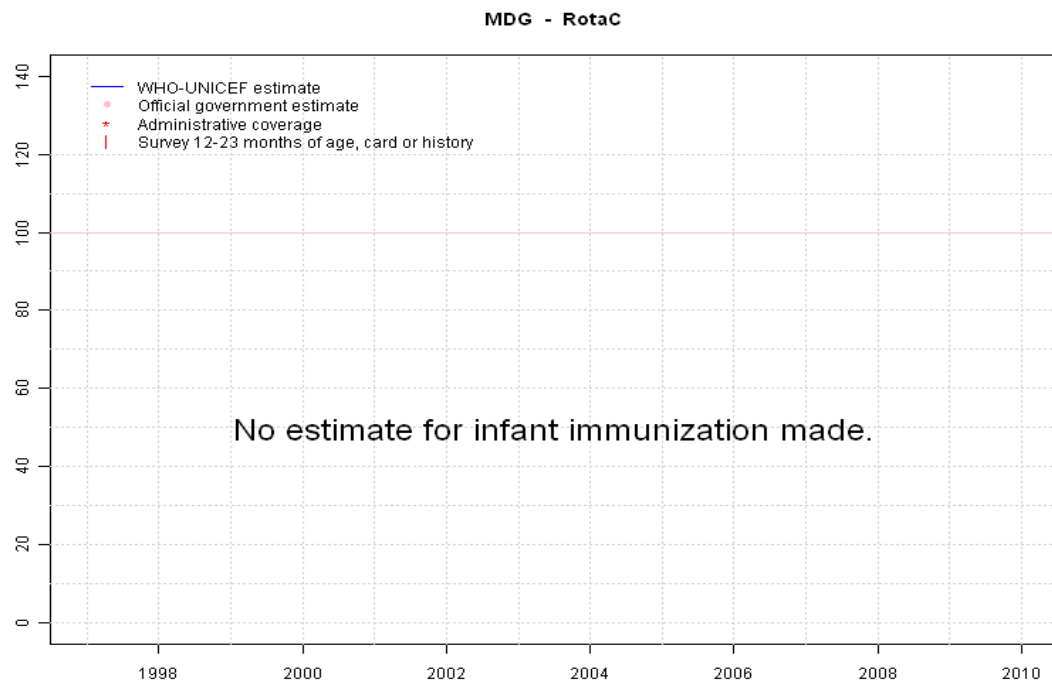
2008: na Hib introduced in 2008 Vaccine presentation is DTP-HepB-Hib.

2009: Estimate follows DTP3 levels.

2010: Reported data 85 percent calibrated to 2009 levels.

|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 52   | 78   | 74   |
| Official       | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 52   | 89   | 85   |
| Administrative | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 89   | 86   |
| Survey         | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   | NA   |

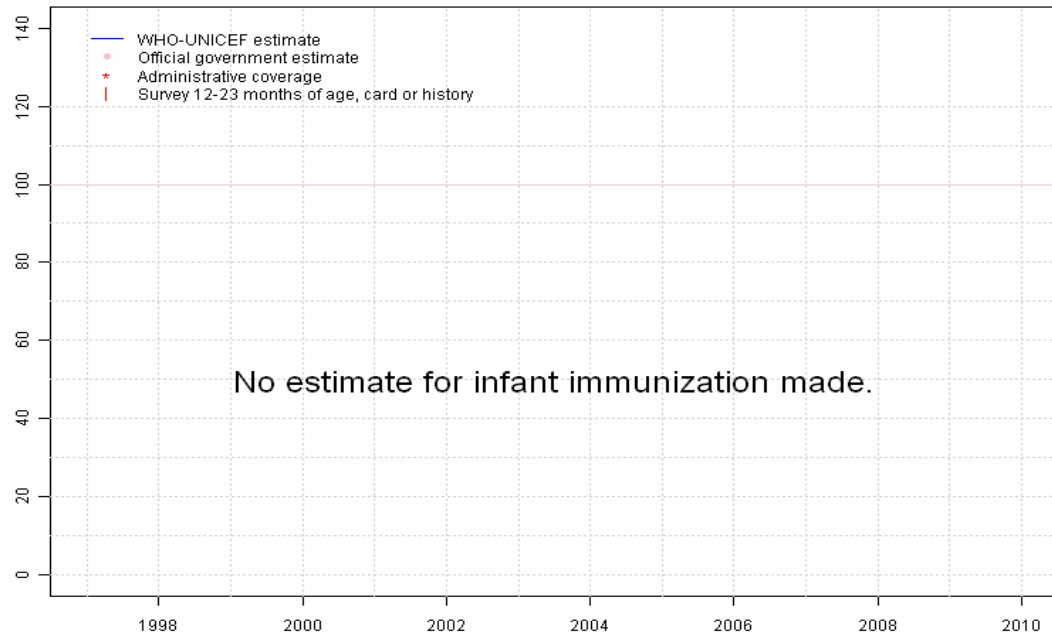
# Madagascar - RotaC



|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | 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   | NA   | NA   |
| Administrative | NA   | NA   | 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   | NA   | NA   |

# Madagascar - PcV3

MDG - PcV3



|                | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate       | NA   | NA   | 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   | NA   | NA   |
| Administrative | NA   | NA   | 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   | NA   | NA   |

# Madagascar - survey details

## 2008 Enquête Démographique et de Santé Madagascar 2008-2009

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | Card                | 58       | 12-23 m    | 2309   | 60         |
| BCG     | History             | 25       | 12-23 m    | 2309   | 60         |
| BCG     | Card or History     | 83       | 12-23 m    | 2309   | 60         |
| BCG     | C or H <12 months   | 82       | 12-23 m    | 2309   | 60         |
| DTP1    | Card or History     | 84       | 12-23 m    | 2309   | 60         |
| DTP1    | History             | 24       | 12-23 m    | 2309   | 60         |
| DTP1    | C or H <12 months   | 84       | 12-23 m    | 2309   | 60         |
| DTP1    | Card                | 60       | 12-23 m    | 2309   | 60         |
| DTP3    | Card                | 55       | 12-23 m    | 2309   | 60         |
| DTP3    | C or H <12 months   | 71       | 12-23 m    | 2309   | 60         |
| DTP3    | Card or History     | 73       | 12-23 m    | 2309   | 60         |
| DTP3    | History             | 18       | 12-23 m    | 2309   | 60         |
| MCV     | Card                | 51       | 12-23 m    | 2309   | 60         |
| MCV     | C or H <12 months   | 62       | 12-23 m    | 2309   | 60         |
| MCV     | History             | 19       | 12-23 m    | 2309   | 60         |
| MCV     | Card or History     | 70       | 12-23 m    | 2309   | 60         |
| Pol1    | History             | 24       | 12-23 m    | 2309   | 60         |
| Pol1    | Card or History     | 84       | 12-23 m    | 2309   | 60         |
| Pol1    | C or H <12 months   | 84       | 12-23 m    | 2309   | 60         |
| Pol1    | Card                | 60       | 12-23 m    | 2309   | 60         |
| Pol3    | History             | 15       | 12-23 m    | 2309   | 60         |
| Pol3    | Card or History     | 70       | 12-23 m    | 2309   | 60         |
| Pol3    | C or H <12 months   | 68       | 12-23 m    | 2309   | 60         |
| Pol3    | Card                | 55       | 12-23 m    | 2309   | 60         |

## 2007 Enquête sur la couverture vaccinale à Madagascar 2008

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | Card                | 86       | 12-23 m    | 6632   | 72         |
| BCG     | Card or History     | 94       | 12-23 m    | 6632   | 72         |
| BCG     | History             | 9        | 12-23 m    | 6632   | 72         |
| DTP1    | Card                | 67       | 12-23 m    | 6632   | 72         |
| DTP1    | Card or History     | 92       | 12-23 m    | 6632   | 72         |
| DTP1    | History             | 25       | 12-23 m    | 6632   | 72         |
| DTP3    | Card                | 61       | 12-23 m    | 6632   | 72         |

|       |                 |    |         |      |    |
|-------|-----------------|----|---------|------|----|
| DTP3  | Card or History | 82 | 12-23 m | 6632 | 72 |
| DTP3  | History         | 21 | 12-23 m | 6632 | 72 |
| HepB1 | History         | 25 | 12-23 m | 6632 | 72 |
| HepB1 | Card            | 67 | 12-23 m | 6632 | 72 |
| HepB1 | Card or History | 92 | 12-23 m | 6632 | 72 |
| HepB3 | History         | 21 | 12-23 m | 6632 | 72 |
| HepB3 | Card or History | 82 | 12-23 m | 6632 | 72 |
| HepB3 | Card            | 61 | 12-23 m | 6632 | 72 |
| MCV   | Card            | 61 | 12-23 m | 6632 | 72 |
| MCV   | Card or History | 81 | 12-23 m | 6632 | 72 |
| MCV   | History         | 20 | 12-23 m | 6632 | 72 |
| Pol1  | Card            | 65 | 12-23 m | 6632 | 72 |
| Pol1  | Card or History | 90 | 12-23 m | 6632 | 72 |
| Pol1  | History         | 25 | 12-23 m | 6632 | 72 |
| Pol3  | Card            | 60 | 12-23 m | 6632 | 72 |
| Pol3  | Card or History | 81 | 12-23 m | 6632 | 72 |
| Pol3  | History         | 21 | 12-23 m | 6632 | 72 |

## 2003 République de Madagascar Enquête Démographique et de Santé 2003-2004

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | Card                | 48       | 12-23 m    | 1287   | 50         |
| BCG     | Card or history     | 72       | 12-23 m    | 1287   | 50         |
| BCG     | C or H <12 months   | 69       | 12-23 m    | 1287   | 50         |
| BCG     | History             | 24       | 12-23 m    | 1287   | 50         |
| DTP1    | History             | 24       | 12-23 m    | 1287   | 50         |
| DTP1    | Card or history     | 71       | 12-23 m    | 1287   | 50         |
| DTP1    | Card                | 48       | 12-23 m    | 1287   | 50         |
| DTP1    | Card or history     | 69       | 12-23 m    | 1287   | 50         |
| DTP3    | History             | 19       | 12-23 m    | 1287   | 50         |
| DTP3    | Card or history     | 58       | 12-23 m    | 1287   | 50         |
| DTP3    | Card or history     | 61       | 12-23 m    | 1287   | 50         |
| DTP3    | Card                | 43       | 12-23 m    | 1287   | 50         |
| MCV     | History             | 17       | 12-23 m    | 1287   | 50         |
| MCV     | Card or history     | 52       | 12-23 m    | 1287   | 50         |
| MCV     | Card or history     | 59       | 12-23 m    | 1287   | 50         |
| MCV     | Card                | 42       | 12-23 m    | 1287   | 50         |
| Pol1    | History             | 28       | 12-23 m    | 1287   | 50         |

# Madagascar - survey details

|      |                 |    |         |      |    |
|------|-----------------|----|---------|------|----|
| Pol1 | Card            | 49 | 12-23 m | 1287 | 50 |
| Pol1 | Card or history | 75 | 12-23 m | 1287 | 50 |
| Pol1 | Card or history | 77 | 12-23 m | 1287 | 50 |
| Pol3 | Card or history | 60 | 12-23 m | 1287 | 50 |
| Pol3 | Card or history | 63 | 12-23 m | 1287 | 50 |
| Pol3 | History         | 19 | 12-23 m | 1287 | 50 |
| Pol3 | Card            | 44 | 12-23 m | 1287 | 50 |

## 1999 Madagascar MICS 2000

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | Card                | 45       | 12-23 m    | 0      | 48         |
| BCG     | Card <12 months     | 42       | 12-23 m    | 0      | 48         |
| BCG     | Card or History     | 72       | 12-23 m    | 0      | 48         |
| BCG     | History             | 26       | 12-23 m    | 0      | 48         |
| DTP1    | Card                | 47       | 12-23 m    | 0      | 48         |
| DTP1    | Card <12 months     | 44       | 12-23 m    | 0      | 48         |
| DTP1    | Card or History     | 73       | 12-23 m    | 0      | 48         |
| DTP1    | History             | 26       | 12-23 m    | 0      | 48         |
| DTP3    | History             | 15       | 12-23 m    | 0      | 48         |
| DTP3    | Card                | 40       | 12-23 m    | 0      | 48         |
| DTP3    | Card <12 months     | 37       | 12-23 m    | 0      | 48         |

|      |                 |    |         |   |    |
|------|-----------------|----|---------|---|----|
| DTP3 | Card or History | 55 | 12-23 m | 0 | 48 |
| MCV  | Card <12 months | 29 | 12-23 m | 0 | 48 |
| MCV  | Card or History | 55 | 12-23 m | 0 | 48 |
| MCV  | History         | 18 | 12-23 m | 0 | 48 |
| MCV  | Card            | 37 | 12-23 m | 0 | 48 |
| Pol1 | History         | 37 | 12-23 m | 0 | 48 |
| Pol1 | Card            | 48 | 12-23 m | 0 | 48 |
| Pol1 | Card <12 months | 44 | 12-23 m | 0 | 48 |
| Pol1 | Card or History | 84 | 12-23 m | 0 | 48 |
| Pol3 | History         | 17 | 12-23 m | 0 | 48 |
| Pol3 | Card or History | 58 | 12-23 m | 0 | 48 |
| Pol3 | Card            | 40 | 12-23 m | 0 | 48 |
| Pol3 | Card <12 months | 37 | 12-23 m | 0 | 48 |

## 1998 Madagascar EPM 1999

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG     | Card or History     | 70       | 12-23 m    | 0      | 0          |
| DTP3    | Card or History     | 63       | 12-23 m    | 0      | 0          |
| MCV     | Card or History     | 44       | 12-23 m    | 0      | 0          |
| Pol3    | Card or History     | 58       | 12-23 m    | 0      | 0          |

Further information and estimates for 1980-1996 are available at:

[http://www.childinfo.org/immunization\\_countryreports.html](http://www.childinfo.org/immunization_countryreports.html)

[http://www.who.int/immunization\\_monitoring/routine/immunization\\_coverage/en/index4.html](http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html)

## Madagascar

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

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

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

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

| Year | PAB coverage estimate (%) |
|------|---------------------------|
| 1997 | 47                        |
| 1998 | 48                        |
| 1999 | 54                        |
| 2000 | 58                        |
| 2001 | 60                        |
| 2002 | 61                        |
| 2003 | 62                        |
| 2004 | 63                        |
| 2005 | 66                        |
| 2006 | 71                        |
| 2007 | 72                        |
| 2008 | 76                        |
| 2009 | 76                        |
| 2010 | 76                        |

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<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.