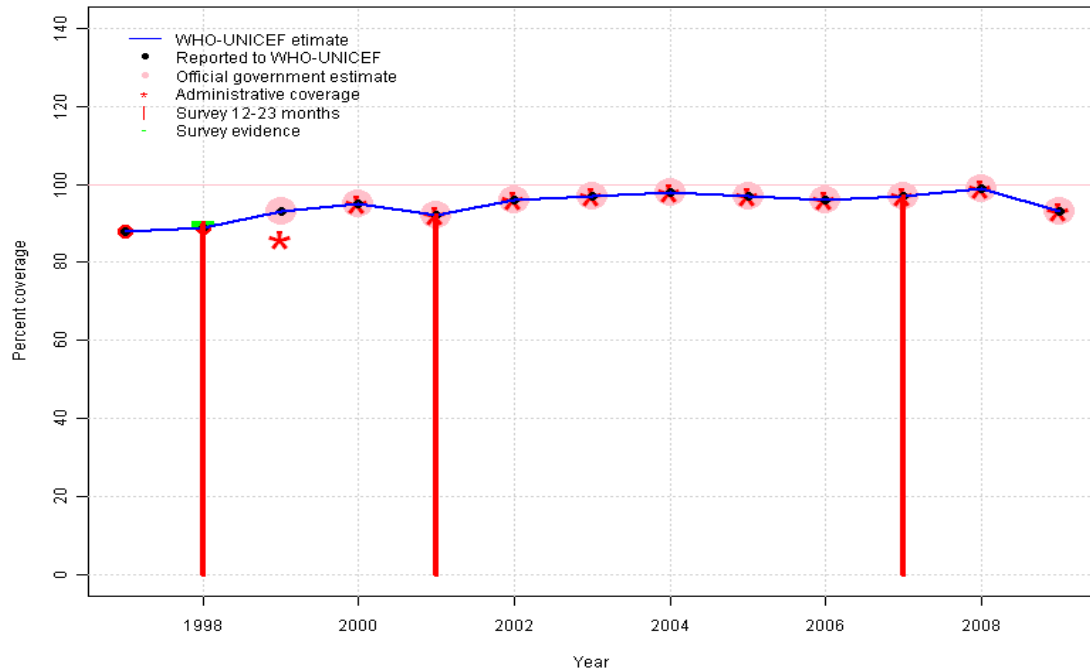


Guatemala - BCG

GTM - BCG



| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 88 | 89 | 93 | 95 | 92 | 96 | 97 | 98 | 97 | 96 | 97 | 99 | 93 |
| Reported | 88 | 89 | 93 | 95 | 92 | 96 | 97 | 98 | 97 | 96 | 97 | 99 | 93 |
| Official | NA | NA | 93 | 95 | 92 | 96 | 97 | 98 | 97 | 96 | 97 | 99 | 93 |
| Administrative | NA | NA | 86 | 95 | 92 | 96 | 97 | 98 | 97 | 96 | 97 | 99 | 93 |
| Survey | NA | 90 | NA | NA | 92 | NA | NA | NA | NA | NA | 97 | NA | NA |

Description:

1997: Legacy estimate.

1998: Estimate based on reported data (89 percent) confirmed by survey (90 percent).

1999: Estimate based on reported data.

2000: Estimate based on reported data.

2001: Estimate based on reported data (92 percent) confirmed by survey (92 percent).

2002: Estimate based on reported data.

2003: Estimate based on reported data.

2004: Estimate based on reported data.

2005: Estimate based on reported data.

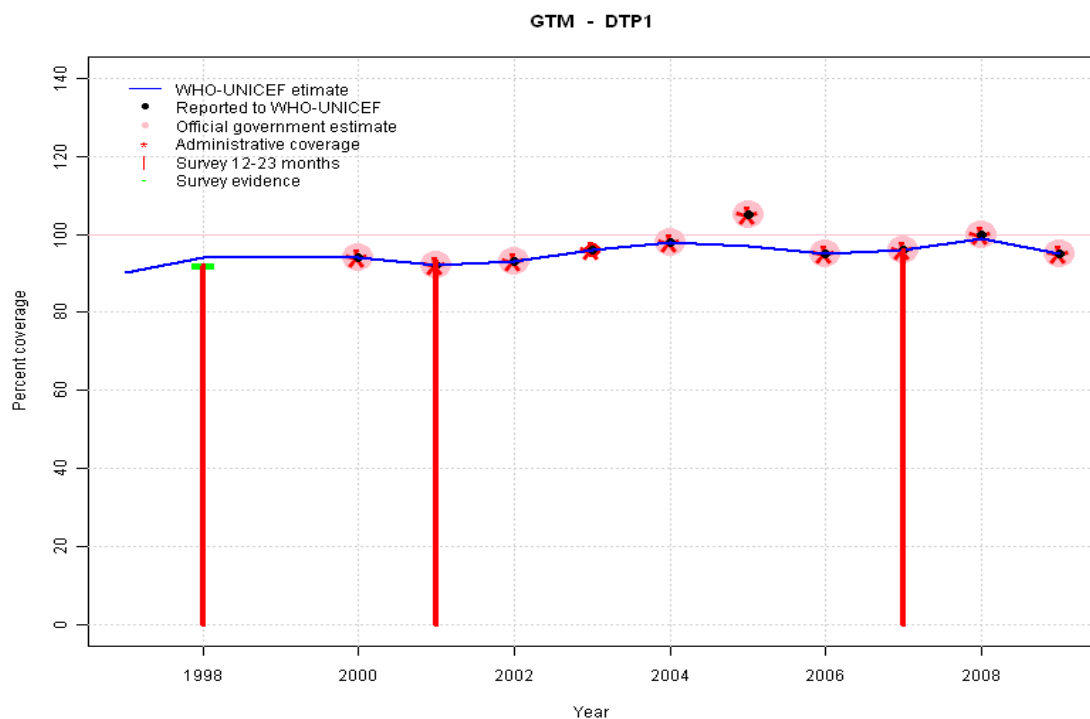
2006: Estimate based on reported data.

2007: Estimate based on reported data (97 percent) confirmed by survey (97 percent).

2008: Estimate based on reported data.

2009: Estimate based on reported data.

Guatemala - DTP1



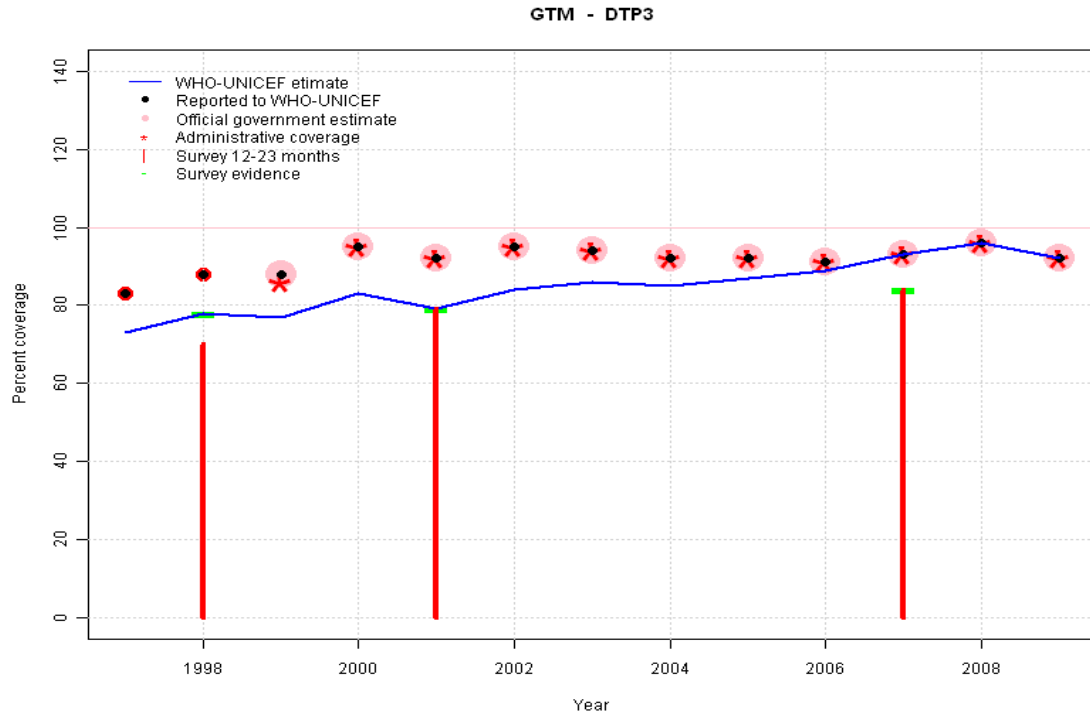
Description:

- 1997: Legacy estimate.
- 1998: Estimate based on interpolated value between reported data. Survey (92 percent) confirms trend in reported data.
- 1999: Estimate based on trend in reported data. Missing or ignored reported value estimated by extrapolation from 2000 reported value of 94 percent.
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data (92 percent) confirmed by survey (93 percent).
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data.
- 2005: Estimate based on trend in reported data. Missing or ignored reported value estimated by interpolation between reported values of 98 percent in 2004 and 95 percent in 2006. 2005 reported data (105 percent) ignored; greater than 100 percent.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data (96 percent) confirmed by survey (96 percent).
- 2008: Estimate based on reported data.
- 2009: Estimate based on reported data.

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 90 | 94 | 94 | 94 | 92 | 93 | 96 | 98 | 97 | 95 | 96 | 99 | 95 |
| Reported | NA | NA | NA | 94 | 92 | 93 | 96 | 98 | 105 | 95 | 96 | 100 | 95 |
| Official | NA | NA | NA | 94 | 92 | 93 | NA | 98 | 105 | 95 | 96 | 100 | 95 |
| Administrative | NA | NA | NA | 94 | 92 | 93 | 96 | 98 | 105 | 95 | 96 | 100 | 95 |
| Survey | NA | 92 | NA | NA | 93 | NA | NA | NA | NA | NA | 96 | NA | NA |

Guatemala - DTP3

Description:



1997: Legacy estimate.

1998: Estimate based on survey results adjusted for recall bias. Survey results (70 percent) adjusted for recall bias to 78 percent based on first dose card or history coverage (92 percent) and documented drop-out between first (66 percent) and third (56 percent) doses.

1999: Reported data (88 percent) calibrated to 1998 and 2001 levels.

2000: Reported data (95 percent) calibrated to 1998 and 2001 levels.

2001: Estimate based on survey results. Reported data (92 percent) not consistent with survey results (79 percent).

2002: Reported data (95 percent) calibrated to 2001 and 2007 levels.

2003: Reported data (94 percent) calibrated to 2001 and 2007 levels.

2004: Reported data (92 percent) calibrated to 2001 and 2007 levels.

2005: Reported data (92 percent) calibrated to 2001 and 2007 levels.

2006: Reported data (91 percent) calibrated to 2001 and 2007 levels.

2007: Estimate based on reported data (93 percent) confirmed by survey (84 percent).

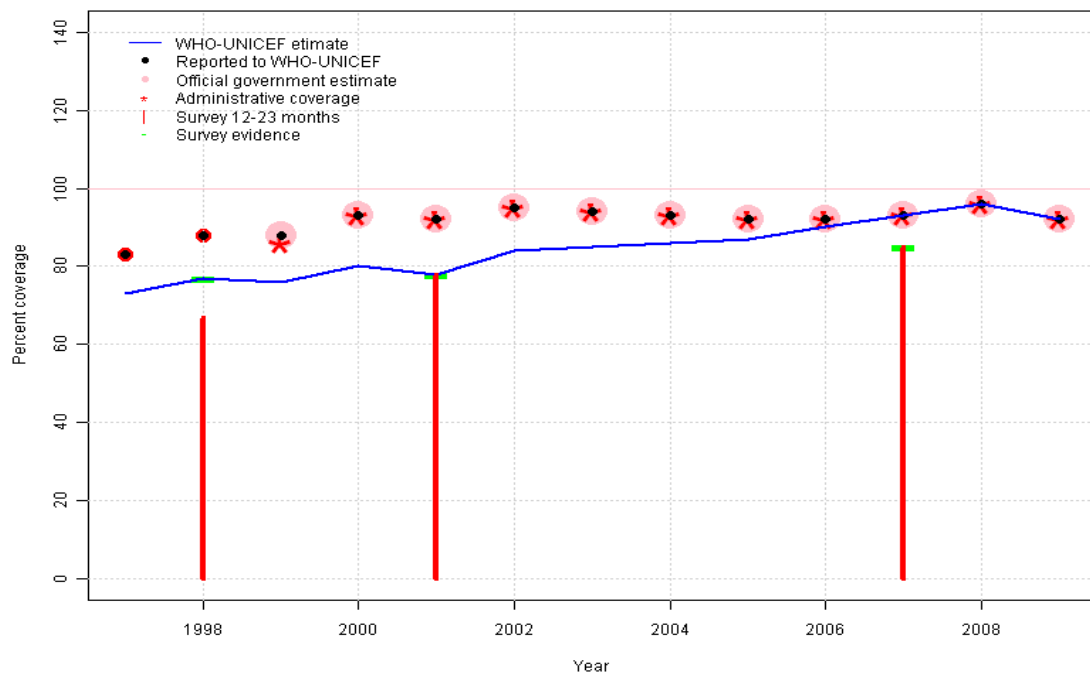
2008: Estimate based on reported data.

2009: Estimate based on reported data.

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 73 | 78 | 77 | 83 | 79 | 84 | 86 | 85 | 87 | 89 | 93 | 96 | 92 |
| Reported | 83 | 88 | 88 | 95 | 92 | 95 | 94 | 92 | 92 | 91 | 93 | 96 | 92 |
| Official | NA | NA | 88 | 95 | 92 | 95 | 94 | 92 | 92 | 91 | 93 | 96 | 92 |
| Administrative | NA | NA | 86 | 95 | 92 | 95 | 94 | 92 | 92 | 91 | 93 | 96 | 92 |
| Survey | NA | 78 | NA | NA | 79 | NA | NA | NA | NA | NA | 84 | NA | NA |

Guatemala - Pol3

GTM - Pol3



| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 73 | 77 | 76 | 80 | 78 | 84 | 85 | 86 | 87 | 90 | 93 | 96 | 92 |
| Reported | 83 | 88 | 88 | 93 | 92 | 95 | 94 | 93 | 92 | 92 | 93 | 96 | 92 |
| Official | NA | NA | 88 | 93 | 92 | 95 | 94 | 93 | 92 | 92 | 93 | 96 | 92 |
| Administrative | NA | NA | 86 | 93 | 92 | 95 | 94 | 93 | 92 | 92 | 93 | 96 | 92 |
| Survey | NA | 77 | NA | NA | 78 | NA | NA | NA | NA | NA | 85 | NA | NA |

Description:

1997: Legacy estimate.

1998: Estimate based on survey results. Reported data (88 percent) not consistent with survey results (77 percent). Survey results (67 percent) adjusted for recall bias to 77 percent based on first dose card or history coverage (92 percent) and documented drop-out between first (67 percent) and third (56 percent) doses.

1999: Reported data (88 percent) calibrated to 1998 and 2001 levels.

2000: Reported data (93 percent) calibrated to 1998 and 2001 levels.

2001: Estimate based on survey results. Reported data (92 percent) not consistent with survey results (78 percent).

2002: Reported data (95 percent) calibrated to 2001 and 2007 levels.

2003: Reported data (94 percent) calibrated to 2001 and 2007 levels.

2004: Reported data (93 percent) calibrated to 2001 and 2007 levels.

2005: Reported data (92 percent) calibrated to 2001 and 2007 levels.

2006: Reported data (92 percent) calibrated to 2001 and 2007 levels.

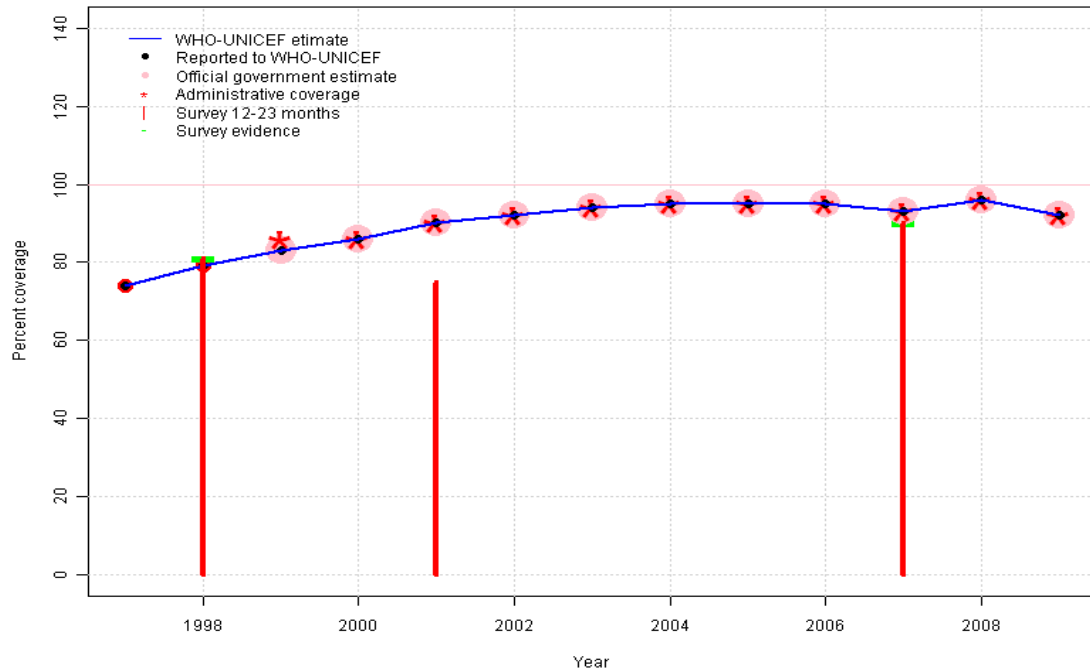
2007: Estimate based on reported data (93 percent) confirmed by survey (85 percent).

2008: Estimate based on reported data.

2009: Estimate based on reported data.

Guatemala - MCV

GTM - MCV



| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | 74 | 79 | 83 | 86 | 90 | 92 | 94 | 95 | 95 | 95 | 93 | 96 | 92 |
| Reported | 74 | 79 | 83 | 86 | 90 | 92 | 94 | 95 | 95 | 95 | 93 | 96 | 92 |
| Official | NA | NA | 83 | 86 | 90 | 92 | 94 | 95 | 95 | 95 | 93 | 96 | 92 |
| Administrative | NA | NA | 86 | 86 | 90 | 92 | 94 | 95 | 95 | 95 | 93 | 96 | 92 |
| Survey | NA | 81 | NA | NA | NA | NA | NA | NA | NA | NA | 90 | NA | NA |

Description:

1997: Legacy estimate.

1998: Estimate based on reported data (79 percent) confirmed by survey (81 percent).

1999: Estimate based on reported data.

2000: Estimate based on reported data.

2001: Estimate based on reported data. Survey results of 75 percent ignored by working group. In 2001 the recommended age of administration changed from 9 months of age with measles vaccine to 12 months of age with MMR. The 2001 coverage survey does not include immunizations given during part of 2001.

2002: Estimate based on reported data.

2003: Estimate based on reported data.

2004: Estimate based on reported data.

2005: Estimate based on reported data.

2006: Estimate based on reported data.

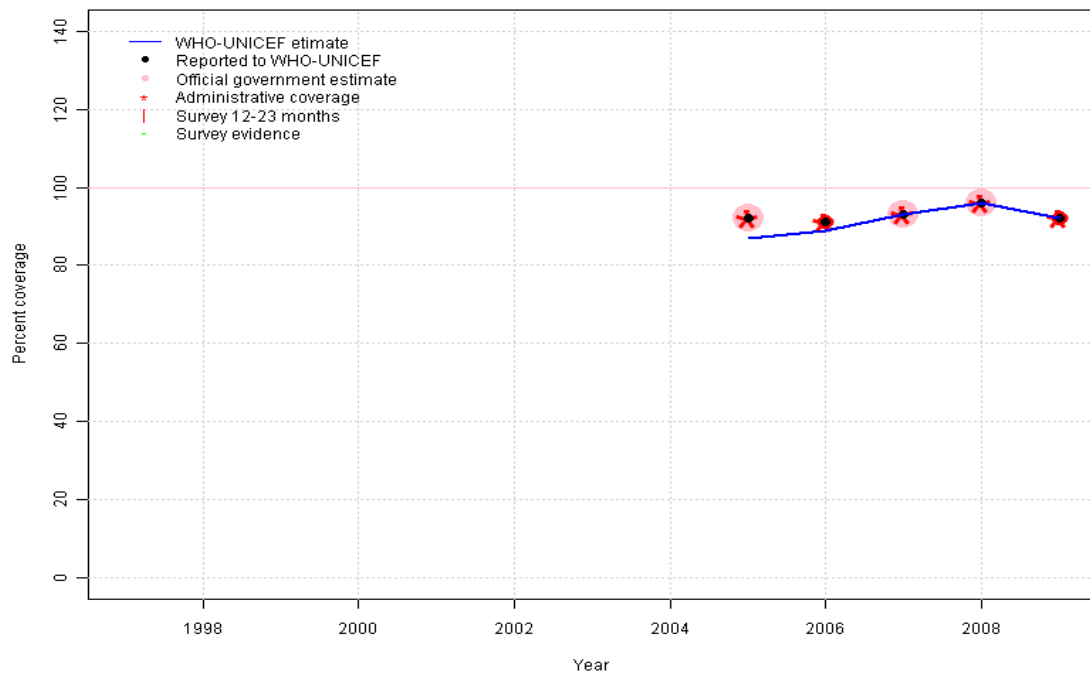
2007: Estimate based on reported data (93 percent) confirmed by survey (90 percent). Survey result of 90 percent for age group 24-35 m supports reported data

2008: Estimate based on reported data.

2009: Estimate based on reported data.

Guatemala - HepB3

GTM - HepB3



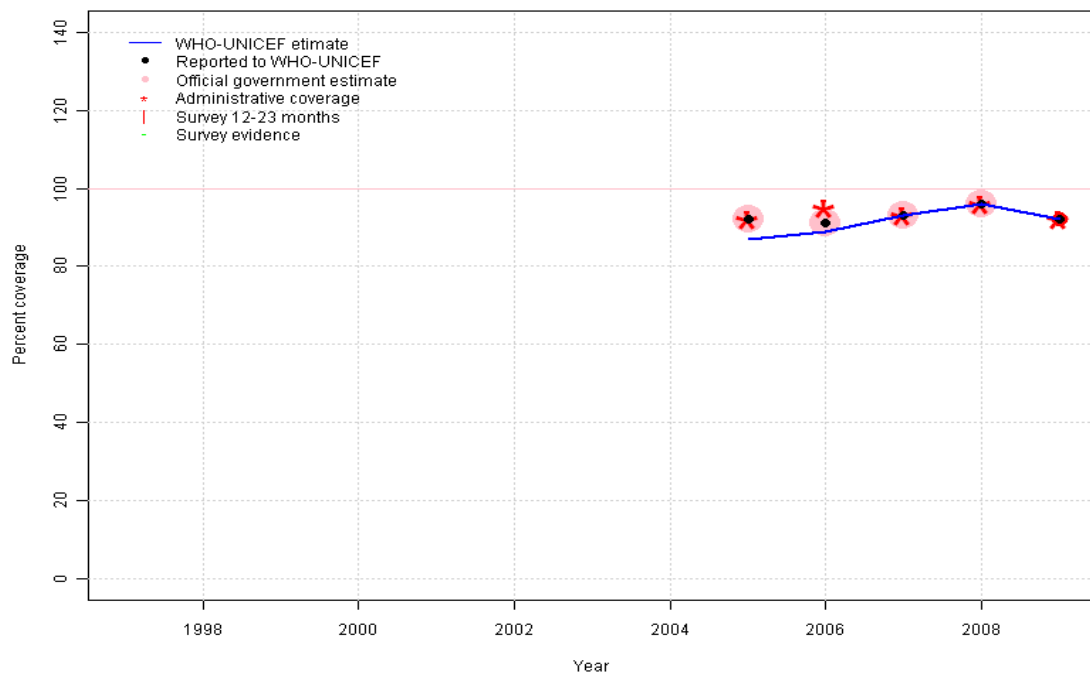
Description:

2005: Estimate adjusted to level of DTP3 estimate. HepB introduced in 2005
 Vaccine presentation is DTP-HepB-Hib.
 2006: Estimate adjusted to level of DTP3 estimate.
 2007: Estimate based on reported data
 2008: Estimate based on reported data.
 2009: Estimate based on reported data.

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | NA | NA | NA | NA | NA | NA | NA | NA | 87 | 89 | 93 | 96 | 92 |
| Reported | NA | NA | NA | NA | NA | NA | NA | NA | 92 | 91 | 93 | 96 | 92 |
| Official | NA | NA | NA | NA | NA | NA | NA | NA | 92 | NA | 93 | 96 | NA |
| Administrative | NA | NA | NA | NA | NA | NA | NA | NA | 92 | 91 | 93 | 96 | 92 |
| Survey | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

Guatemala - Hib3

GTM - Hib3

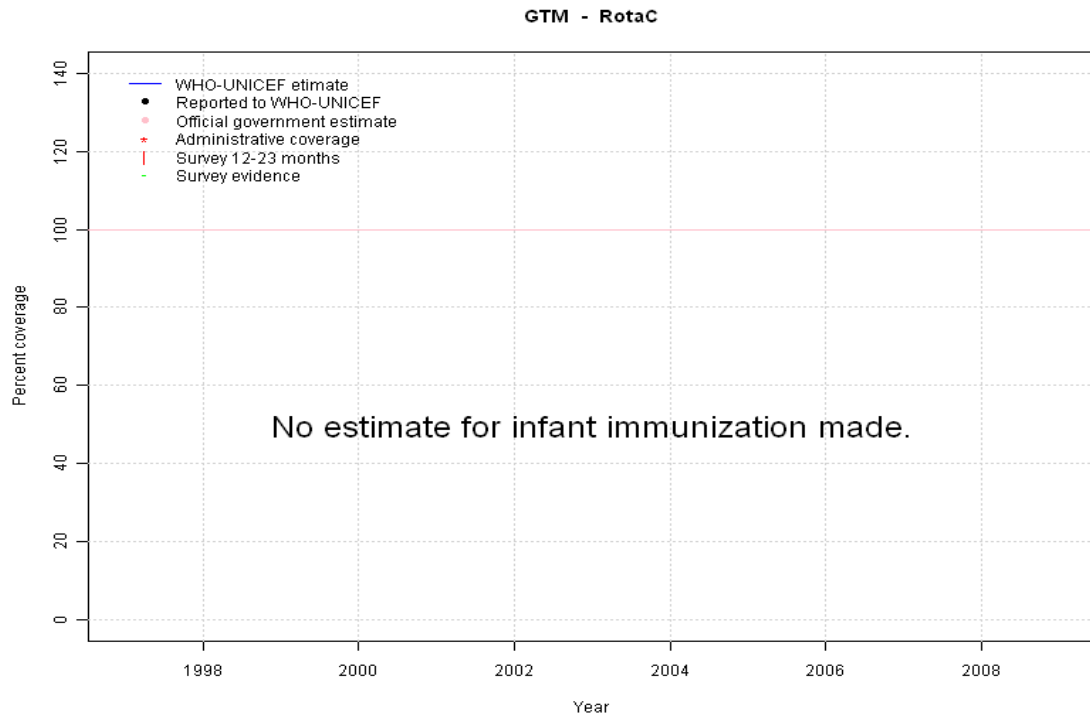


Description:

- 2005: Estimate adjusted to level of DTP3 estimate. Hib introduced in 2005 Vaccine presentation is DTP-HepB-Hib.
- 2006: Estimate adjusted to level of DTP3 estimate.
- 2007: Estimate based on reported data
- 2008: Estimate based on reported data.
- 2009: Estimate based on reported data.

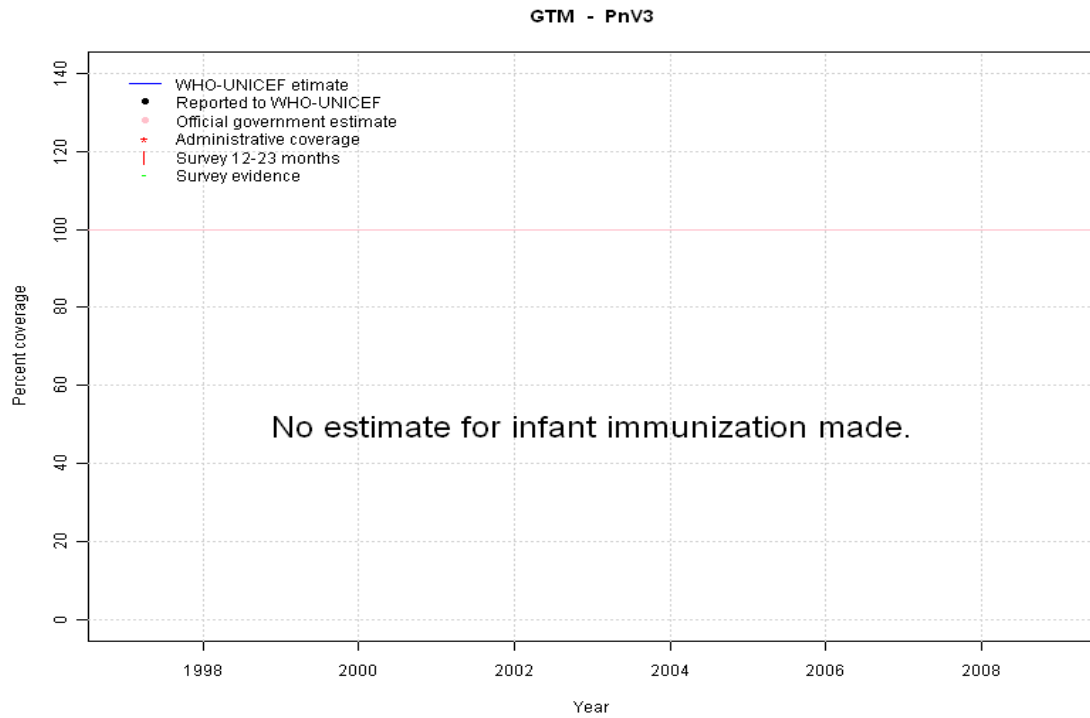
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Estimate | NA | NA | NA | NA | NA | NA | NA | NA | 87 | 89 | 93 | 96 | 92 |
| Reported | NA | NA | NA | NA | NA | NA | NA | NA | 92 | 91 | 93 | 96 | 92 |
| Official | NA | NA | NA | NA | NA | NA | NA | NA | 92 | 91 | 93 | 96 | NA |
| Administrative | NA | NA | NA | NA | NA | NA | NA | NA | 92 | 95 | 93 | 96 | 92 |
| Survey | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

Guatemala - RotaC



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

Guatemala - PnV3



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

Guatemala - survey details

2007 Guatemala, Encuesta Nacional de Salud Materno Infantil 2002

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | Card or History | 97 | 12-23 m | 1861 | 87 |
| DTP1 | Card or History | 96 | 12-23 m | 1861 | 87 |
| DTP3 | Card or History | 84 | 12-23 m | 1861 | 87 |
| MCV | Card or History | 90 | 24-35 m | 1861 | 87 |
| Pol1 | Card or History | 97 | 12-23 m | 1861 | 87 |
| Pol3 | Card or History | 85 | 12-23 m | 1861 | 87 |

2001 Guatemala, Encuesta Nacional de Salud Materno Infantil 2002

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | Card or History | 92 | 12-23 m | 1487 | 69 |
| DTP1 | Card or History | 93 | 12-23 m | 1487 | 69 |
| DTP3 | Card or History | 79 | 12-23 m | 1487 | 69 |
| MCV | Card or History | 75 | 12-23 m | 1487 | 69 |
| Pol1 | Card or History | 94 | 12-23 m | 1487 | 69 |
| Pol3 | Card or History | 78 | 12-23 m | 1487 | 69 |

1998 Guatemala, Encuesta Nacional de Salud Materno Infantil 1998-1999

| Vaccine | Confirmation method | Coverage | Age cohort | Sample | Cards seen |
|---------|---------------------|----------|------------|--------|------------|
| BCG | Card or History | 90 | 12-23 m | 848 | 68 |
| BCG | C or H <12 months | 82 | 12-23 m | 848 | 68 |
| BCG | History | 26 | 12-23 m | 848 | 68 |
| BCG | Card | 65 | 12-23 m | 848 | 68 |
| BCG | C or H <12 months | 77 | 24-35 m | 868 | 60 |
| BCG | C or H <12 months | 71 | 36-47 m | 849 | 55 |

| | | | | | |
|------|-------------------|----|---------|-----|----|
| BCG | C or H <12 months | 68 | 48-59 m | 843 | 46 |
| DTP1 | Card or History | 92 | 12-23 m | 848 | 68 |
| DTP1 | C or H <12 months | 88 | 12-23 m | 848 | 68 |
| DTP1 | History | 26 | 12-23 m | 848 | 68 |
| DTP1 | Card | 66 | 12-23 m | 848 | 68 |
| DTP1 | C or H <12 months | 80 | 24-35 m | 868 | 60 |
| DTP1 | C or H <12 months | 72 | 36-47 m | 849 | 55 |
| DTP1 | C or H <12 months | 68 | 48-59 m | 843 | 46 |
| DTP3 | History | 15 | 12-23 m | 848 | 68 |
| DTP3 | Card | 56 | 12-23 m | 848 | 68 |
| DTP3 | Card or History | 70 | 12-23 m | 848 | 68 |
| DTP3 | C or H <12 months | 54 | 12-23 m | 848 | 68 |
| DTP3 | C or H <12 months | 51 | 24-35 m | 868 | 60 |
| DTP3 | C or H <12 months | 44 | 36-47 m | 849 | 55 |
| DTP3 | C or H <12 months | 49 | 48-59 m | 843 | 46 |
| MCV | History | 22 | 12-23 m | 848 | 68 |
| MCV | Card or History | 81 | 12-23 m | 848 | 68 |
| MCV | Card | 59 | 12-23 m | 848 | 68 |
| MCV | C or H <12 months | 53 | 12-23 m | 848 | 68 |
| MCV | C or H <12 months | 48 | 24-35 m | 868 | 60 |
| MCV | C or H <12 months | 45 | 36-47 m | 849 | 55 |
| MCV | C or H <12 months | 36 | 48-59 m | 843 | 46 |
| Pol1 | Card | 67 | 12-23 m | 848 | 68 |
| Pol1 | Card or History | 92 | 12-23 m | 848 | 68 |
| Pol1 | C or H <12 months | 59 | 12-23 m | 848 | 68 |
| Pol1 | History | 25 | 12-23 m | 848 | 68 |
| Pol1 | C or H <12 months | 81 | 24-35 m | 868 | 60 |
| Pol1 | C or H <12 months | 73 | 36-47 m | 849 | 55 |
| Pol1 | C or H <12 months | 68 | 48-59 m | 843 | 46 |
| Pol3 | C or H <12 months | 52 | 12-23 m | 848 | 68 |
| Pol3 | Card | 56 | 12-23 m | 848 | 68 |
| Pol3 | Card or History | 67 | 12-23 m | 848 | 68 |
| Pol3 | History | 10 | 12-23 m | 848 | 68 |
| Pol3 | C or H <12 months | 49 | 24-35 m | 868 | 60 |
| Pol3 | C or H <12 months | 39 | 36-47 m | 849 | 55 |
| Pol3 | C or H <12 months | 42 | 48-59 m | 843 | 46 |

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

Guatemala - survey details

http://www.childinfo.org/immunization_countryreports.html

http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html

Guatemala

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 | 58 |
| 1998 | 59 |
| 1999 | 66 |
| 2000 | 67 |
| 2001 | 68 |
| 2002 | 68 |
| 2003 | 69 |
| 2004 | 70 |
| 2005 | 70 |
| 2006 | 70 |
| 2007 | 71 |
| 2008 | 71 |
| 2009 | 71 |

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.