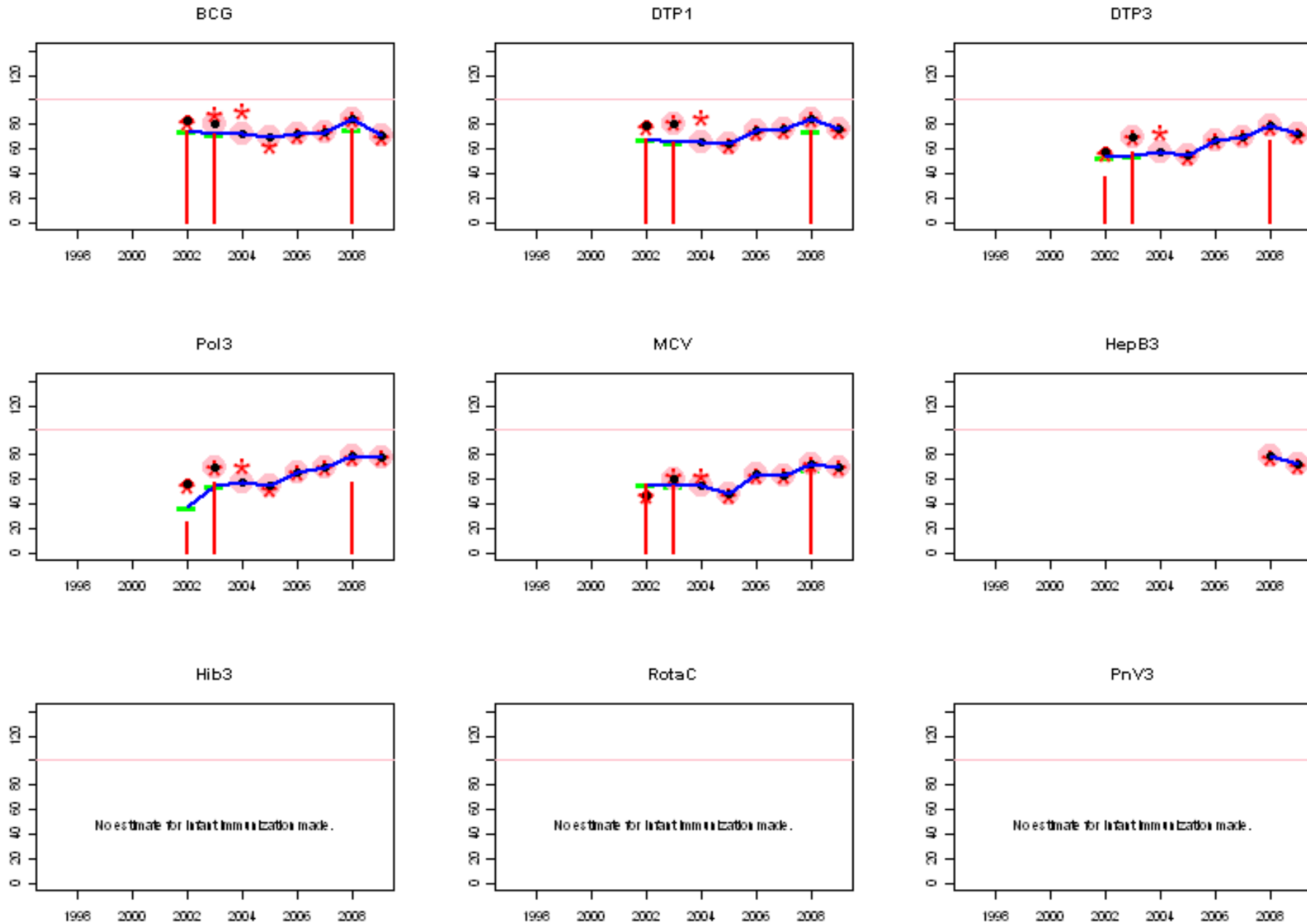
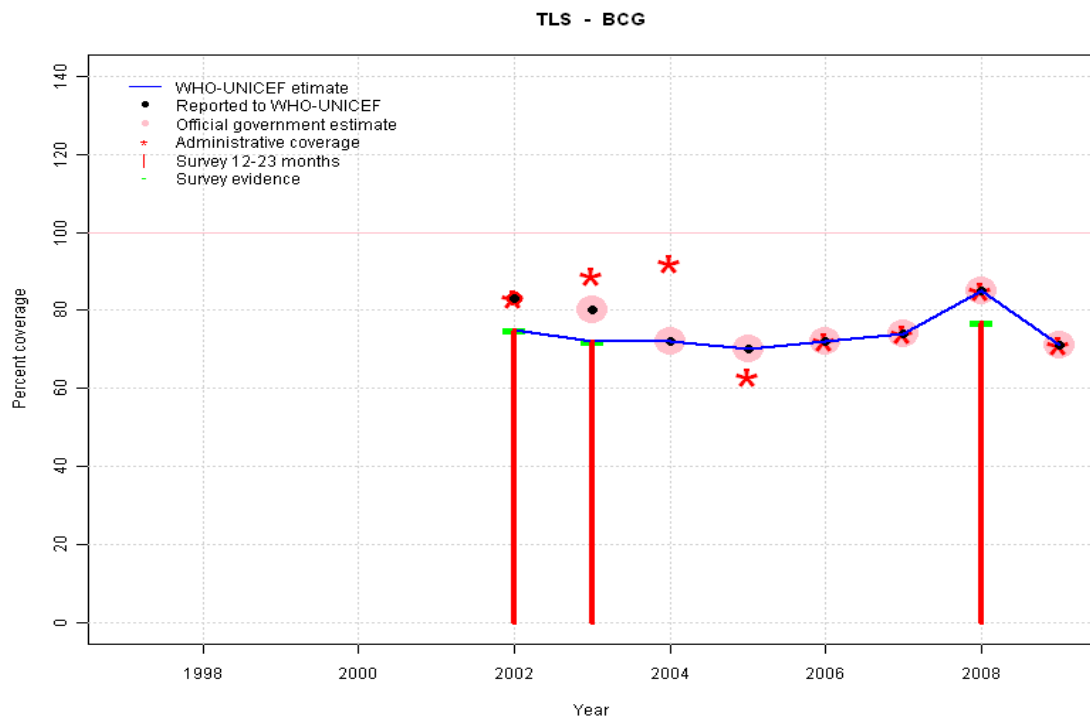


Timor-Leste: WHO and UNICEF estimates of immunization coverage, 1997 - 2009



# Timor-Leste - BCG



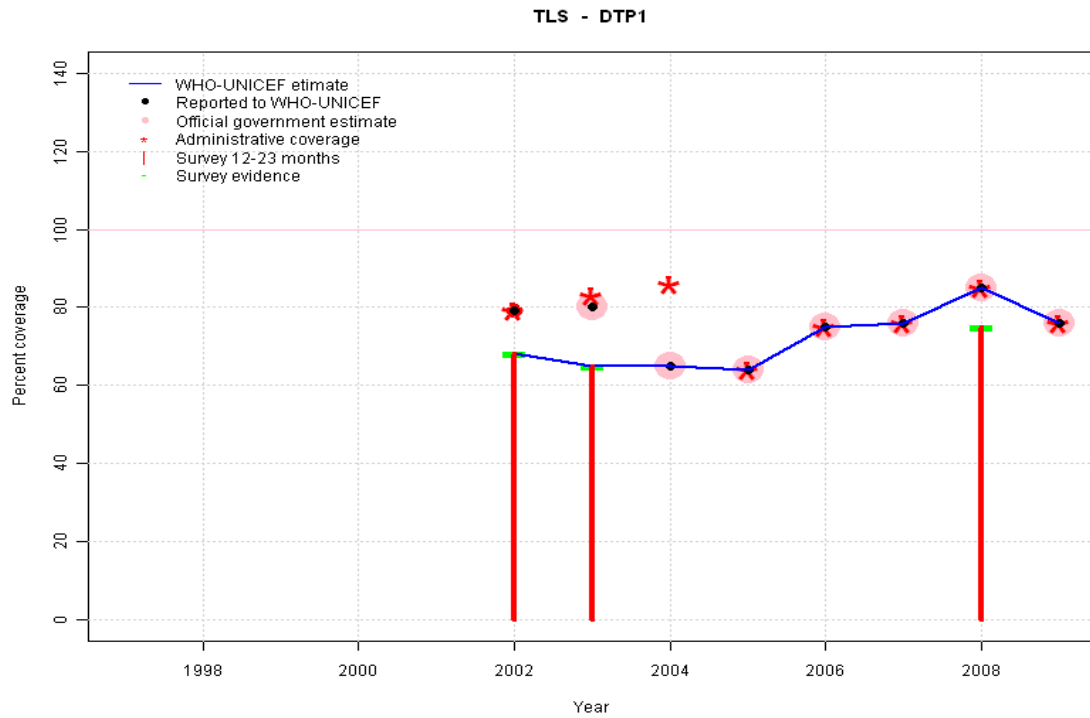
## Description:

- 2002: Subsequent revision of denominator based on 2005 census
- 2003: Subsequent revision of denominator based on 2005 census
- 2004: Subsequent revision of denominator based on 2005 census
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data (85 percent) confirmed by survey (77 percent). Trends in coverage from 2007 to 2009 consistent with trends in other antigens.
- 2009: Estimate based on reported data. Trends in coverage from 2007 to 2009 consistent with trends in other antigens.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	75	72	72	70	72	74	85	71
Reported	NA	NA	NA	NA	NA	83	80	72	70	72	74	85	71
Official	NA	NA	NA	NA	NA	NA	80	72	70	72	74	85	71
Administrative	NA	NA	NA	NA	NA	83	89	92	63	72	74	85	71
Survey	NA	NA	NA	NA	NA	75	72	NA	NA	NA	NA	77	NA

# Timor-Leste - DTP1

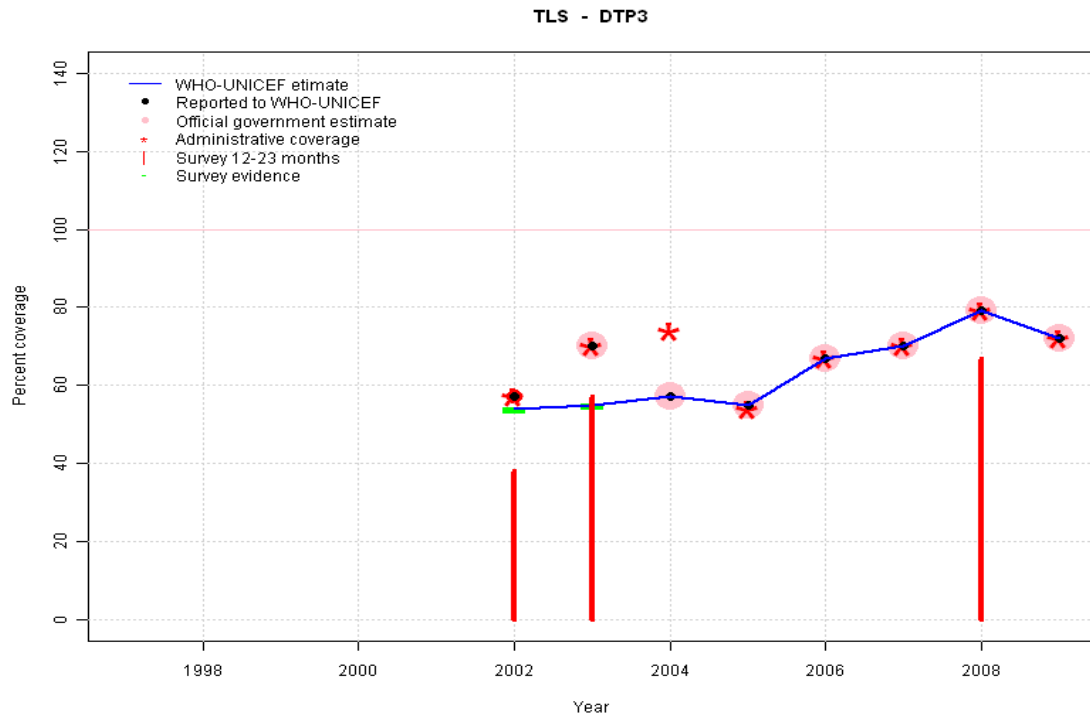
## Description:



- 2002: Subsequent revision of denominator based on 2005 census
- 2003: Subsequent revision of denominator based on 2005 census
- 2004: Subsequent revision of denominator based on 2005 census
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data (85 percent) confirmed by survey (75 percent).
- 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	68	65	65	64	75	76	85	76
Reported	NA	NA	NA	NA	NA	79	80	65	64	75	76	85	76
Official	NA	NA	NA	NA	NA	NA	80	65	64	75	76	85	76
Administrative	NA	NA	NA	NA	NA	79	83	86	64	75	76	85	76
Survey	NA	NA	NA	NA	NA	68	65	NA	NA	NA	NA	75	NA

# Timor-Leste - DTP3



## Description:

2002: Subsequent revision of denominator based on 2005 census Survey results (38 percent) adjusted for recall bias to 54 percent based on first dose card or history coverage (68 percent) and documented drop-out between first (64 percent) and third (51 percent) doses.

2003: Subsequent revision of denominator based on 2005 census Survey results (57 percent) adjusted for recall bias to 55 percent based on first dose card or history coverage (65 percent) and documented drop-out between first (20 percent) and third (17 percent) doses. 2003 reported data (70 percent) inconsistent with data from other years.

2004: Subsequent revision of denominator based on 2005 census

2005: Estimate based on reported data.

2006: Estimate based on reported data.

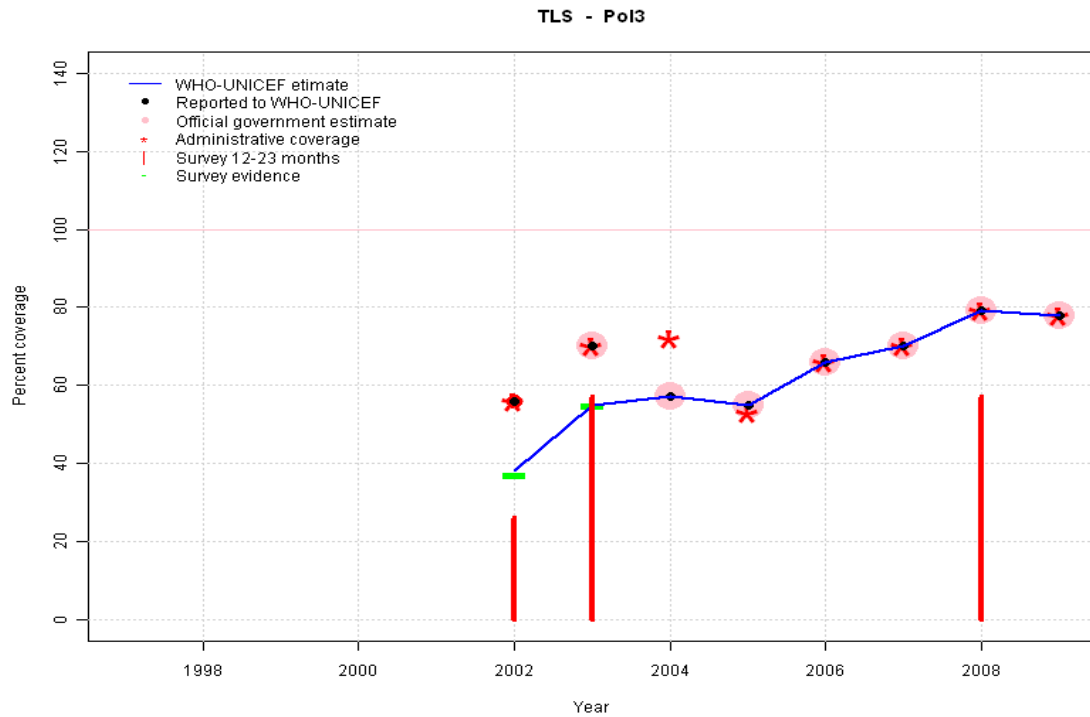
2007: Estimate based on reported data.

2008: Estimate based on reported data. Survey results of 67 percent ignored by working group. Preliminary survey report, insufficient information to calculate recall bias.

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	54	55	57	55	67	70	79	72
Reported	NA	NA	NA	NA	NA	57	70	57	55	67	70	79	72
Official	NA	NA	NA	NA	NA	NA	70	57	55	67	70	79	72
Administrative	NA	NA	NA	NA	NA	57	70	74	54	67	70	79	72
Survey	NA	NA	NA	NA	NA	54	55	NA	NA	NA	NA	NA	NA

# Timor-Leste - Pol3



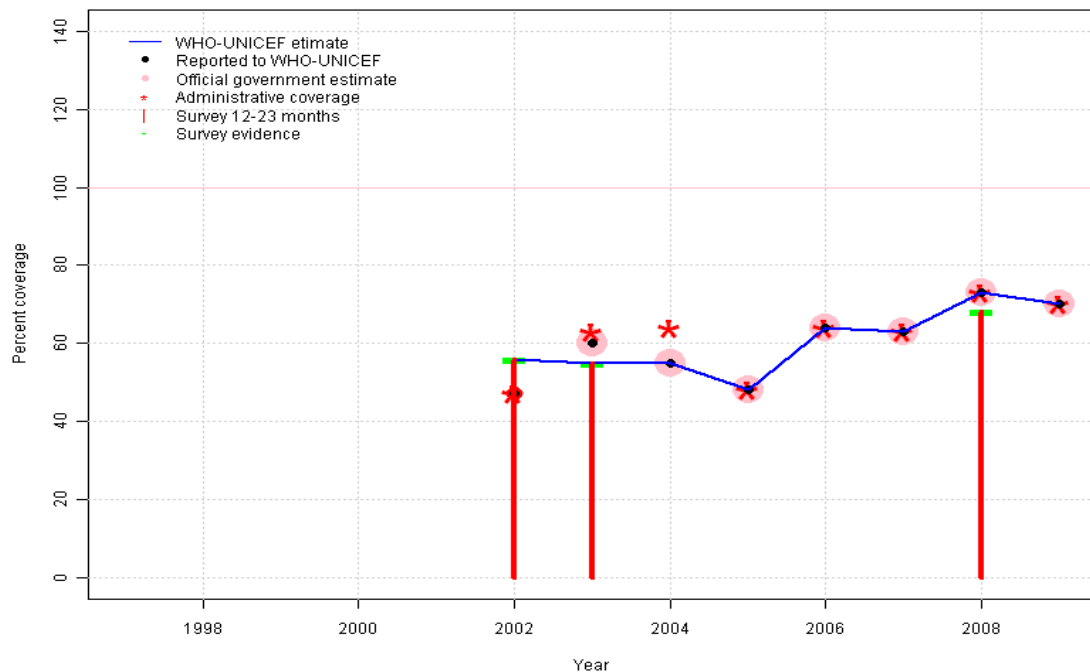
## Description:

- 2002: Subsequent revision of denominator based on 2005 census Survey results (26 percent) adjusted for recall bias to 37 percent based on first dose card or history coverage (69 percent) and documented drop-out between first (89 percent) and third (48 percent) doses.
- 2003: Subsequent revision of denominator based on 2005 census Survey results (57 percent) adjusted for recall bias to 55 percent based on first dose card or history coverage (65 percent) and documented drop-out between first (20 percent) and third (17 percent) doses. 2003 reported data (70 percent) inconsistent with data from other years.
- 2004: Subsequent revision of denominator based on 2005 census
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data. Survey results of 57 percent ignored by working group. Preliminary survey report, insufficient information to calculate recall bias.
- 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	38	55	57	55	66	70	79	78
Reported	NA	NA	NA	NA	NA	56	70	57	55	66	70	79	78
Official	NA	NA	NA	NA	NA	NA	70	57	55	66	70	79	78
Administrative	NA	NA	NA	NA	NA	56	70	72	53	66	70	79	78
Survey	NA	NA	NA	NA	NA	37	55	NA	NA	NA	NA	NA	NA

# Timor-Leste - MCV

TLS - MCV



## Description:

- 2002: Subsequent revision of denominator based on 2005 census
- 2003: Subsequent revision of denominator based on 2005 census
- 2004: Subsequent revision of denominator based on 2005 census
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data (73 percent) confirmed by survey (68 percent).
- 2009: Estimate based on reported data.

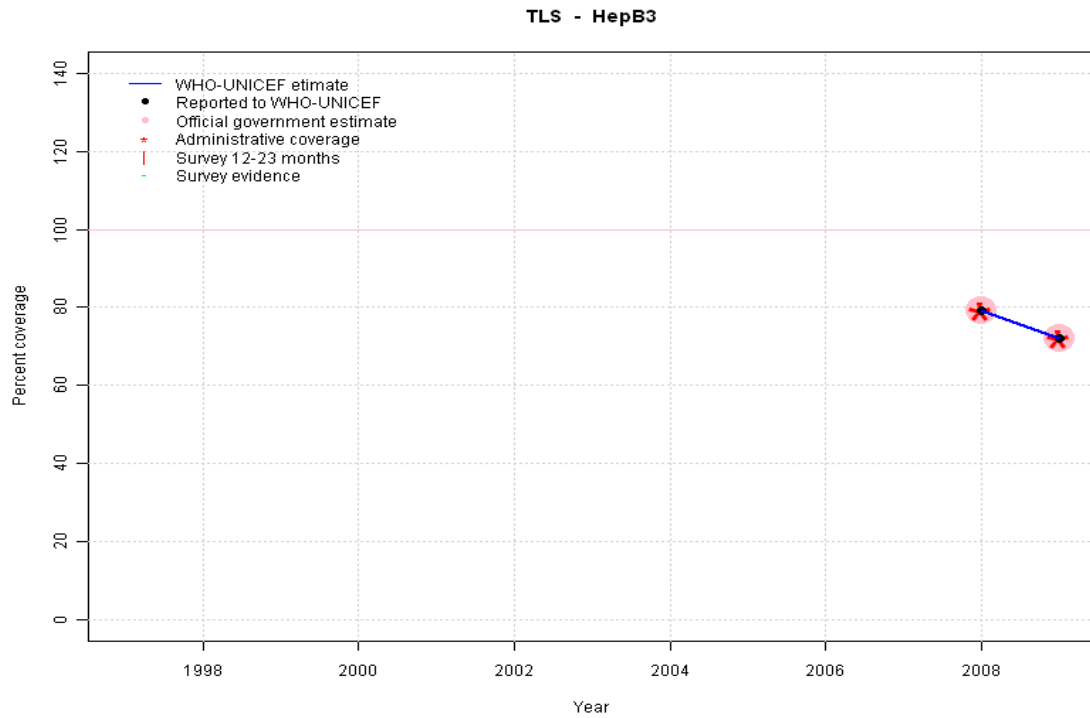
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	56	55	55	48	64	63	73	70
Reported	NA	NA	NA	NA	NA	47	60	55	48	64	63	73	70
Official	NA	NA	NA	NA	NA	NA	60	55	48	64	63	73	70
Administrative	NA	NA	NA	NA	NA	47	63	64	48	64	63	73	70
Survey	NA	NA	NA	NA	NA	56	55	NA	NA	NA	NA	68	NA

# Timor-Leste - HepB3

## Description:

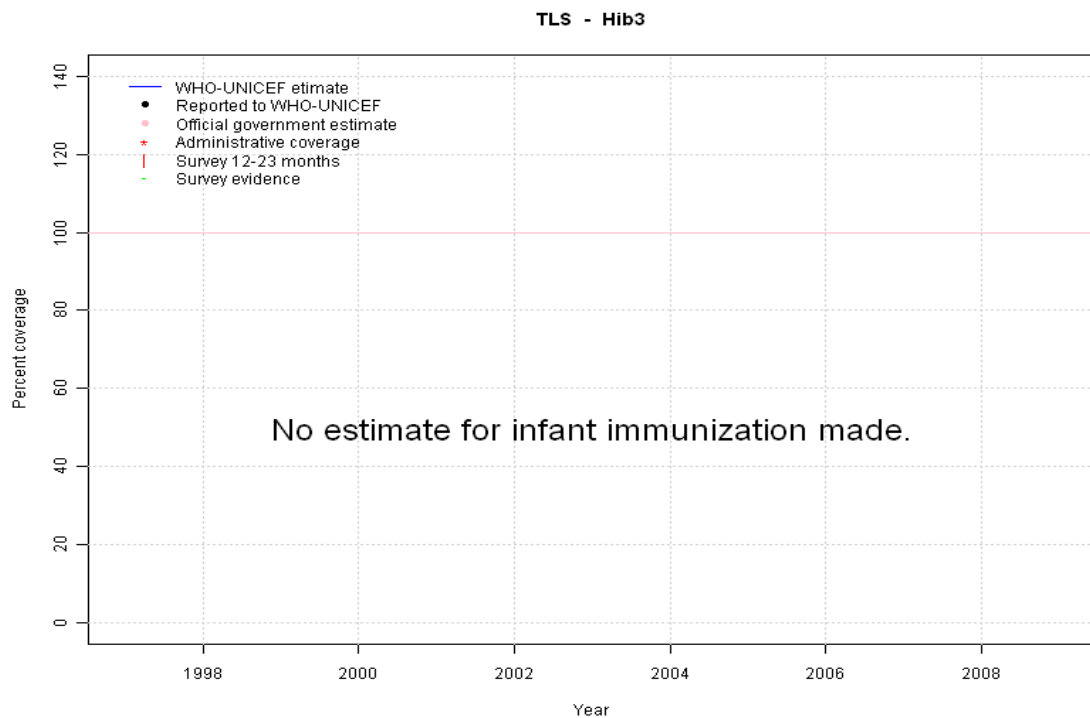
2008: Estimate based on reported data. HepB introduced in 2007. Reporting started in 2008. Vaccine presentation is DTP-HepB.

2009: Estimate based on reported data.



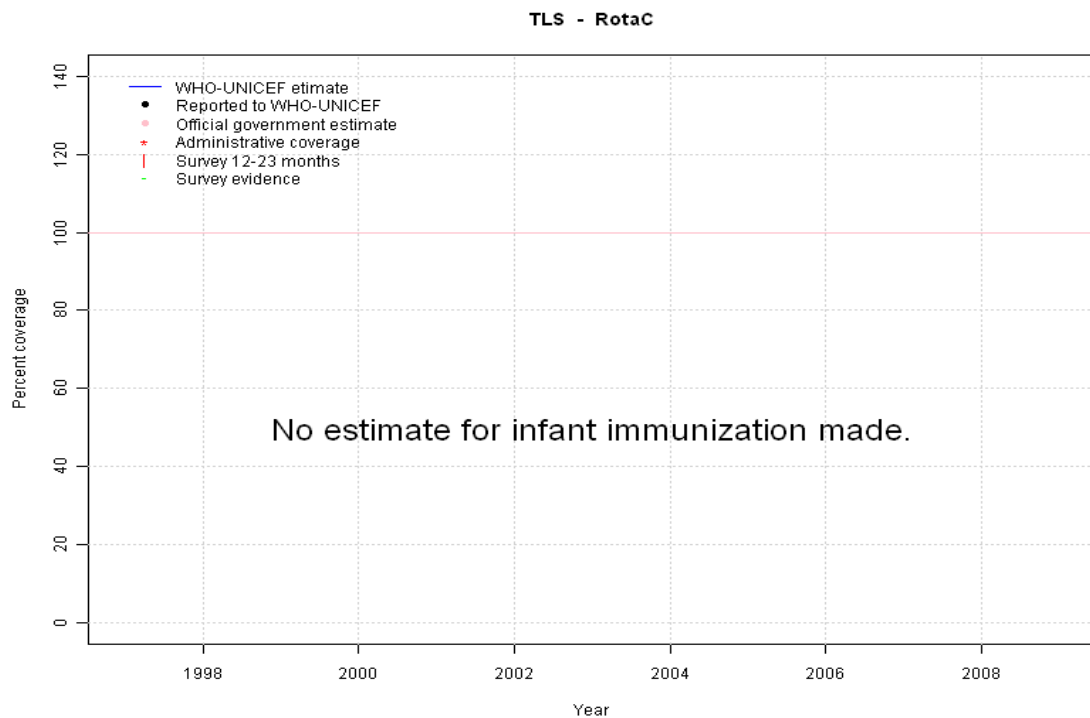
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	72
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	72
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	72
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	72
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

# Timor-Leste - Hib3



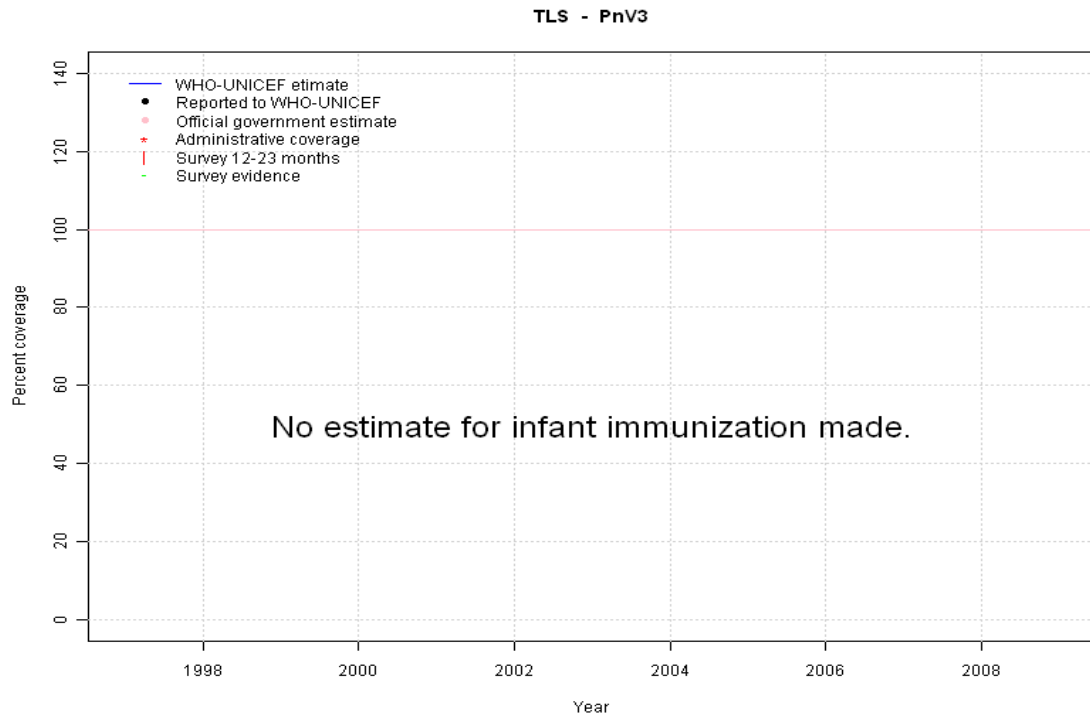
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA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

# Timor-Leste - 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

# Timor-Leste - 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

# Timor-Leste - survey details

## 2008 The 2009-2010 Timor-Leste Demographic and Health Survey, Preliminary Report

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	77	12-23 m	1752	50
DTP1	Card or History	75	12-23 m	1752	50
DTP3	Card or History	67	12-23 m	1752	50
MCV	Card or History	68	12-23 m	1752	50
Pol1	Card or History	75	12-23 m	1752	50
Pol3	Card or History	57	12-23 m	1752	50

## 2003 Immunization coverage among women and children 12-23 months in the Democratic Republic of Timor Lest Using the EPI cluster sruvey methodology

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	25	12-23 m	2662	26
BCG	Card or history	72	12-23 m	2662	26
DTP1	Card	20	12-23 m	2662	26
DTP1	Card or history	65	12-23 m	2662	26
DTP3	Card or history	57	12-23 m	2662	26
DTP3	Card	17	12-23 m	2662	26
MCV	Card or history	55	12-23 m	2662	26
MCV	Card	15	12-23 m	2662	26
Pol1	Card	20	12-23 m	2662	26
Pol1	Card or history	65	12-23 m	2662	26
Pol3	Card	17	12-23 m	2662	26
Pol3	Card or history	57	12-23 m	2662	26

## 2002 Timor-Leste 2003 Demographic and Health Survey

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	62	12-23 m	722	12
BCG	Card or History	75	12-23 m	722	12
BCG	History	71	12-23 m	722	12

DTP1	History	63	12-23 m	722	12
DTP1	Card	64	12-23 m	722	12
DTP1	Card or History	68	12-23 m	722	12
DTP3	History	30	12-23 m	722	12
DTP3	Card or History	38	12-23 m	722	12
DTP3	Card	51	12-23 m	722	12
MCV	Card or History	56	12-23 m	722	12
MCV	Card	40	12-23 m	722	12
MCV	History	52	12-23 m	722	12
Pol1	Card	89	12-23 m	722	12
Pol1	Card or History	69	12-23 m	722	12
Pol1	History	62	12-23 m	722	12
Pol3	Card	48	12-23 m	722	12
Pol3	Card or History	26	12-23 m	722	12
Pol3	History	18	12-23 m	722	12

## 2001 Multiple Indicator Cluster Survey Timor-Leste 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	37	12-23 m	988	10
BCG	History	28	12-23 m	988	10
BCG	Card	9	12-23 m	988	10
BCG	C or H <12 months	34	12-23 m	988	10
DTP1	History	26	12-23 m	988	10
DTP1	Card	9	12-23 m	988	10
DTP1	Card or History	35	12-23 m	988	10
DTP1	C or H <12 months	34	12-23 m	988	10
DTP3	History	13	12-23 m	988	10
DTP3	Card or History	18	12-23 m	988	10
DTP3	Card	5	12-23 m	988	10
DTP3	C or H <12 months	17	12-23 m	988	10
MCV	History	22	12-23 m	988	10
MCV	Card or History	28	12-23 m	988	10
MCV	Card	5	12-23 m	988	10
MCV	C or H <12 months	24	12-23 m	988	10
Pol1	Card or History	37	12-23 m	988	10
Pol1	Card	7	12-23 m	988	10
Pol1	History	30	12-23 m	988	10
Pol1	C or H <12 months	34	12-23 m	988	10

# Timor-Leste - survey details

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Pol3	C or H <12 months	16	12-23 m	988	10
Pol3	Card	4	12-23 m	988	10
Pol3	Card or History	16	12-23 m	988	10

Pol3	History	12	12-23 m	988	10
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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)

## Timor-Leste

### 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	
1998	
1999	
2000	
2001	
2002	55
2003	58
2004	64
2005	59
2006	63
2007	59
2008	66
2009	81

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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.