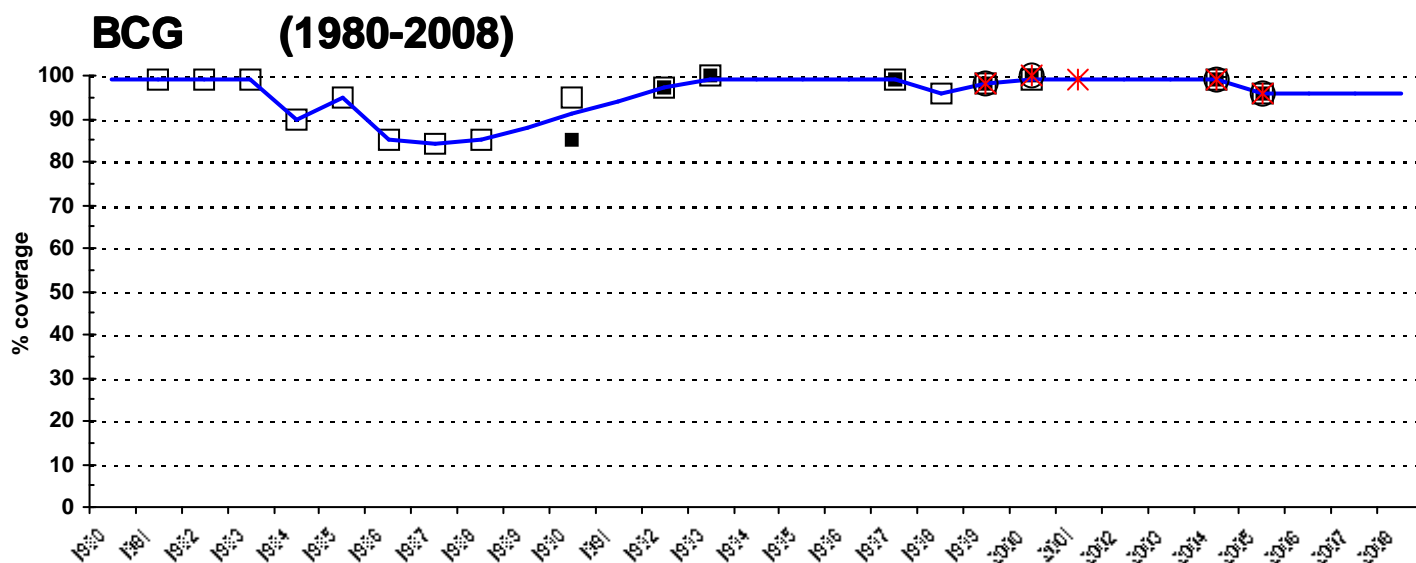


**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Brunei Darussalam

July, 2009

Brunei Darussalam



Description of trend

Estimated immunization coverage levels are based on reported data. For missing data between years the imputed coverage is the linear interpolation between the two reported coverage rates. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

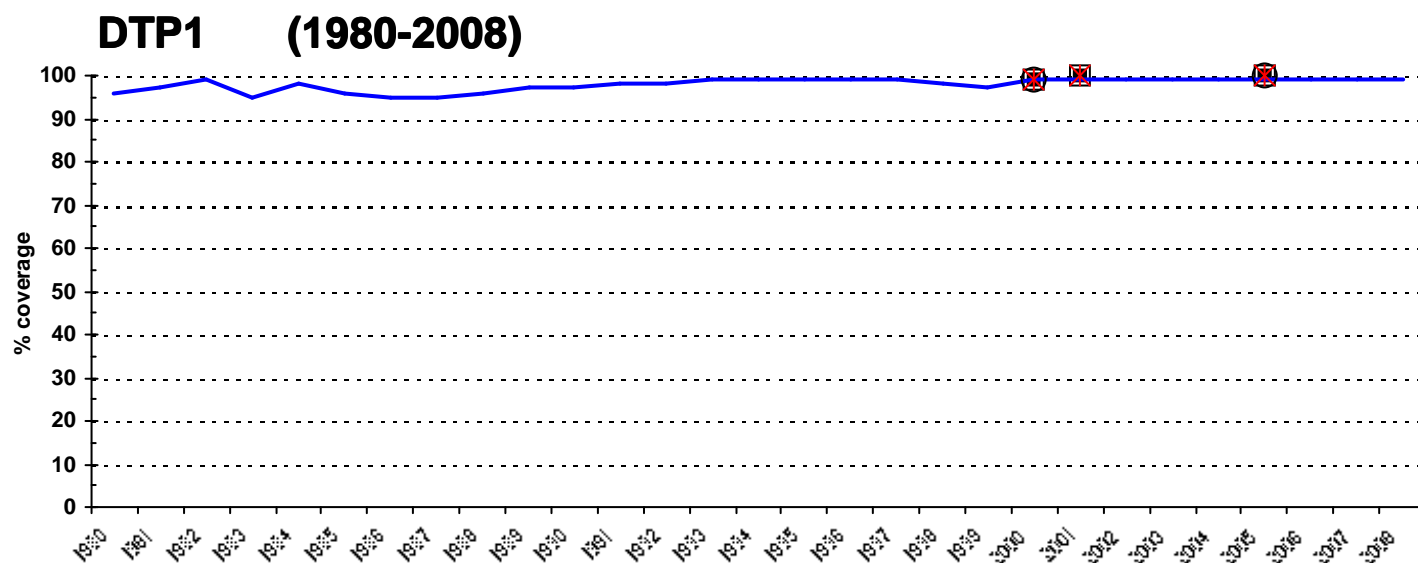
Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	99						
1981	99	99					
1982	99	99					
1983	99	99					
1984	90	90					
1985	95	95					
1986	85	85					
1987	84	84					
1988	85	85					
1989	88						
1990	91	95	85				
1991	94						
1992	97	97	97				
1993	99	100	100				
1994	99						
1995	99						
1996	99						
1997	99	99	99				
1998	96	96					
1999	98	98	98	98	98		
2000	99	99	100	100	100		
2001	99				99		
2002	99						
2003	99						
2004	99	99	99	99	99		
2005	96	96	96	96	96		
2006	96						
2007	96						
2008	96						

*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam



Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001 and have received national reports reflecting DTP1 coverage from 2001 onward. The DTP1 estimates from 2000 onward are based on these reports. For years prior to 2000 the estimates are derived from the WHO/UNICEF estimates of DTP3 and the relationship between the levels of DTP3 coverage and the drop-out between DTP1 and DTP3. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%) —	Reported to:*		Government official estimate (%) ○	Reported doses administered (%)** ✕	Survey data (%)***	
		WHO (%) □	UNICEF (%) ■			Survey 12-23 months 	Survey <12 months +
1980	96						
1981	97						
1982	99						
1983	95						
1984	98						
1985	96						
1986	95						
1987	95						
1988	96						
1989	97						
1990	97						
1991	98						
1992	98						
1993	99						
1994	99						
1995	99						
1996	99						
1997	99						
1998	98						
1999	97						
2000	99	99	99	99	99		
2001	99	100	100		100		
2002	99						
2003	99						
2004	99	101	101	101	101		
2005	99	100	100	100	100		
2006	99						
2007	99						
2008	99						

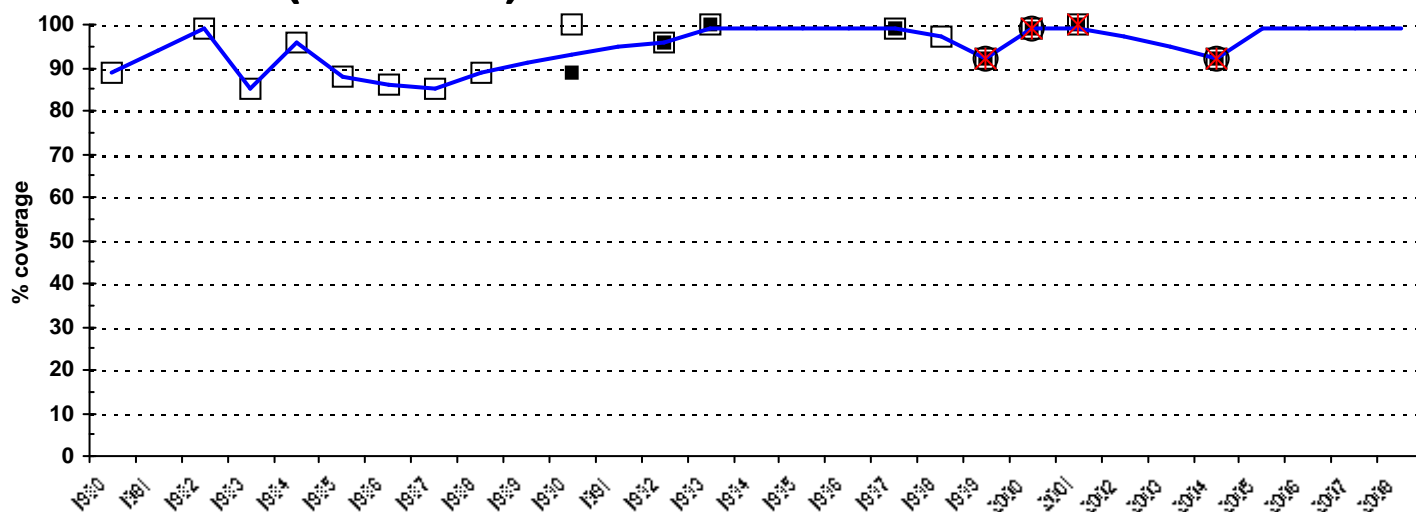
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam

DTP3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data. For missing data between two years the imputed coverage is the linear interpolation between the two reported coverage rates. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	89	89					
1981	94						
1982	99	99					
1983	85	85					
1984	96	96					
1985	88	88					
1986	86	86					
1987	85	85					
1988	89	89					
1989	91						
1990	93	100	89				
1991	95						
1992	96	96	96				
1993	99	100	100				
1994	99						
1995	99						
1996	99						
1997	99	99	99				
1998	97	97					
1999	92	92	92	92	92		
2000	99	99	99	99	99		
2001	99	100	100		100		
2002	97						
2003	95						
2004	92	92	92	92	92		
2005	99	108	108	108	108		
2006	99						
2007	99						
2008	99						

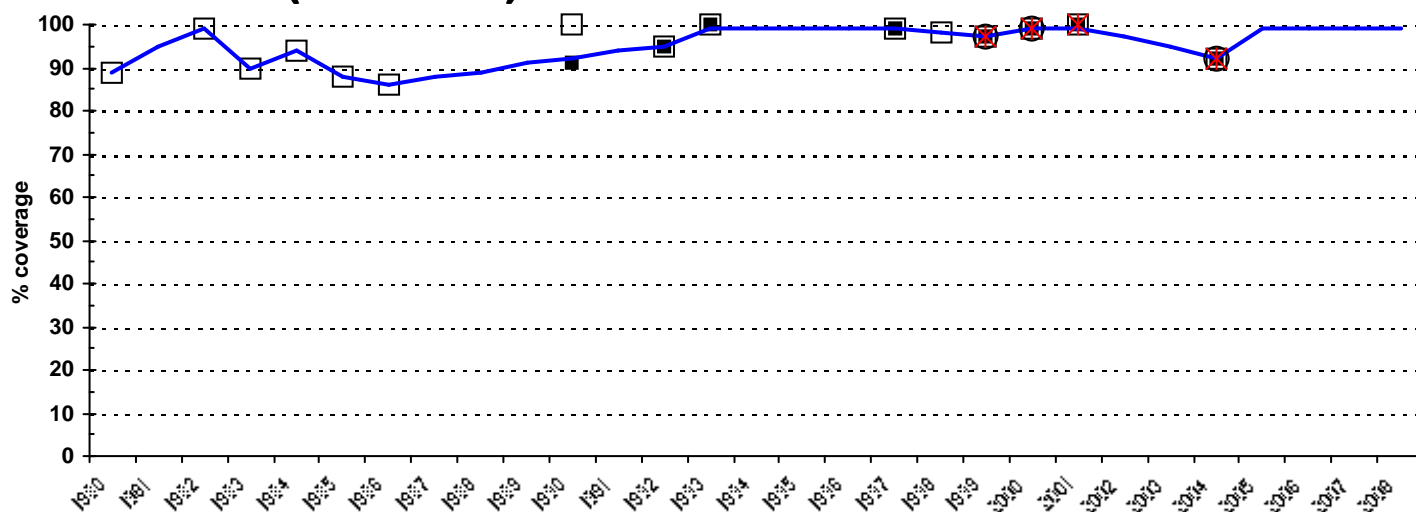
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam

Pol3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data. For missing data between years the imputed coverage is the linear inter between the two reported coverage rates. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

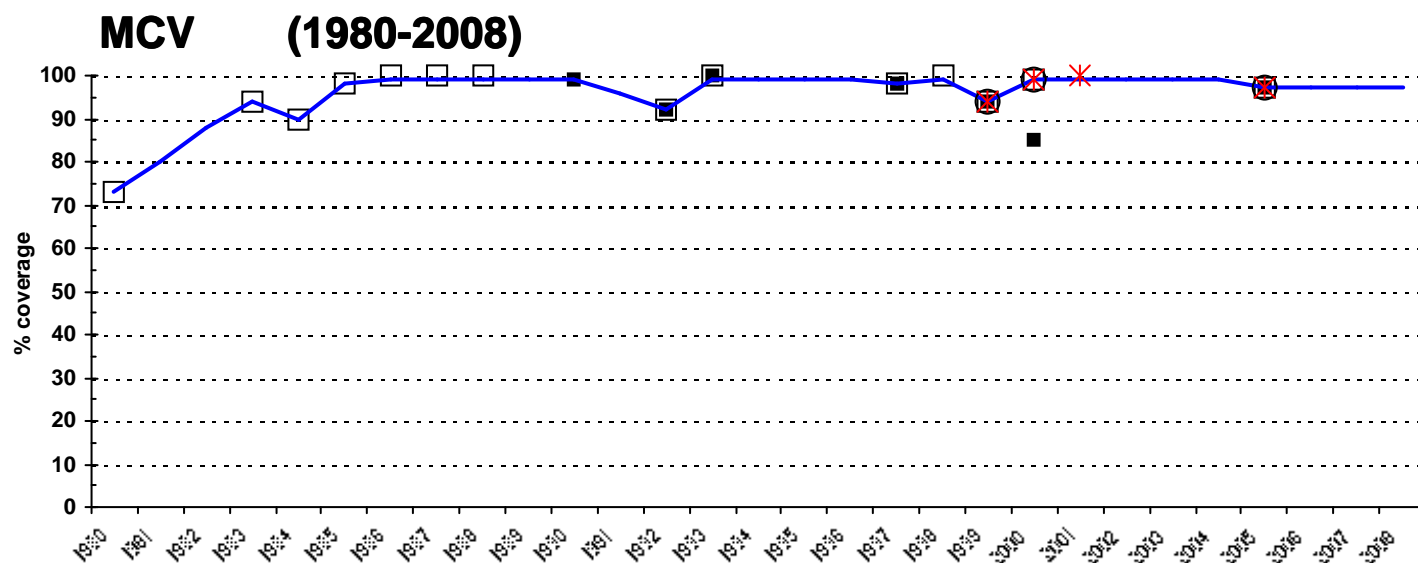
Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	89	89					
1981	95						
1982	99	99					
1983	90	90					
1984	94	94					
1985	88	88					
1986	86	86					
1987	88						
1988	89						
1989	91						
1990	92	100	91				
1991	94						
1992	95	95	95				
1993	99	100	100				
1994	99						
1995	99						
1996	99						
1997	99	99	99				
1998	98	98					
1999	97	97	97	97	97		
2000	99	99	99	99	99		
2001	99	100	100		100		
2002	97						
2003	95						
2004	92	92	92	92	92		
2005	99	109	109	109	109		
2006	99						
2007	99						
2008	99						

*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam



Description of trend

Estimated immunization coverage levels are based on reported data. For missing data between the two reported coverage rates the imputed coverage is the linear interpolation between the two reported coverage rates. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	73	73					
1981	80						
1982	88						
1983	94	94					
1984	90	90					
1985	98	98					
1986	99	100					
1987	99	100					
1988	99	100					
1989	99						
1990	99		99				
1991	96						
1992	92	92	92				
1993	99	100	100				
1994	99						
1995	99						
1996	99						
1997	98	98	98				
1998	99	100					
1999	94	94	94	94	94		
2000	99	99	85	99	99		
2001	99				100		
2002	99						
2003	99						
2004	99	101	101	101	101		
2005	97	97	97	97	97		
2006	97						
2007	97						
2008	97						

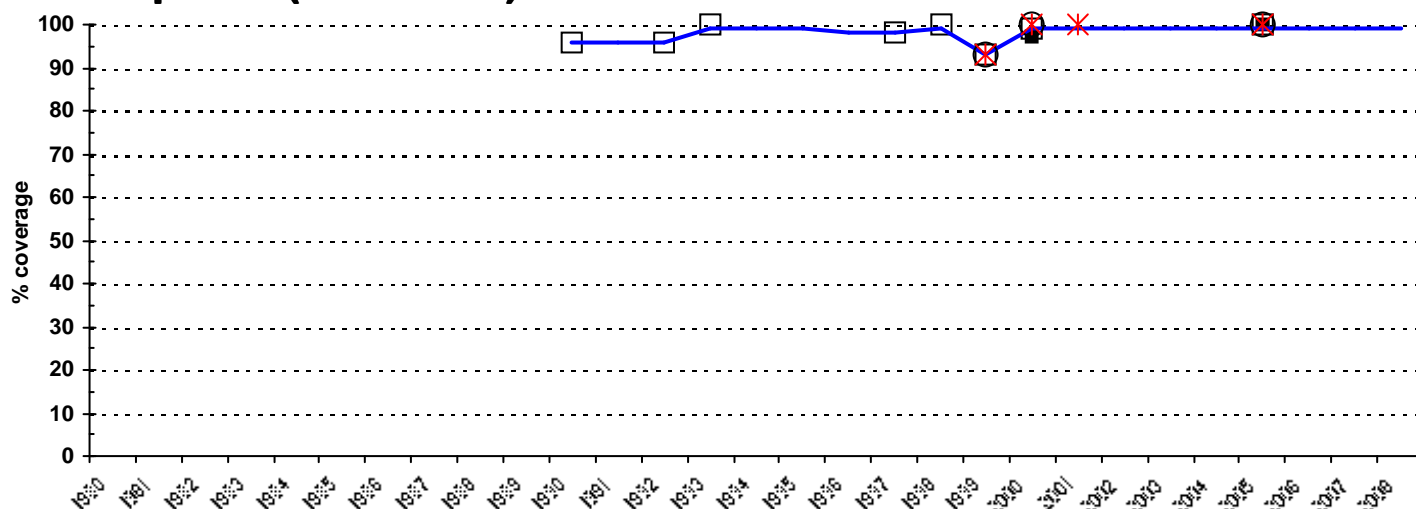
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam

HepB3 (1980-2008)



Description of trend

The hepatitis vaccine was introduced in 1990. Estimated immunization coverage levels are based on reported data. For missing data between years the imputed coverage is the linear interpolation between the two reported coverage rates. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990	96	96					
1991	96						
1992	96	96					
1993	99	100					
1994	99						
1995	99						
1996	98						
1997	98	98					
1998	99	100					
1999	93	93		93	93		
2000	99	99	97	100	100		
2001	99				100		
2002	99						
2003	99						
2004	99	101	101	101	101		
2005	99	100	100	100	100		
2006	99						
2007	99						
2008	99						

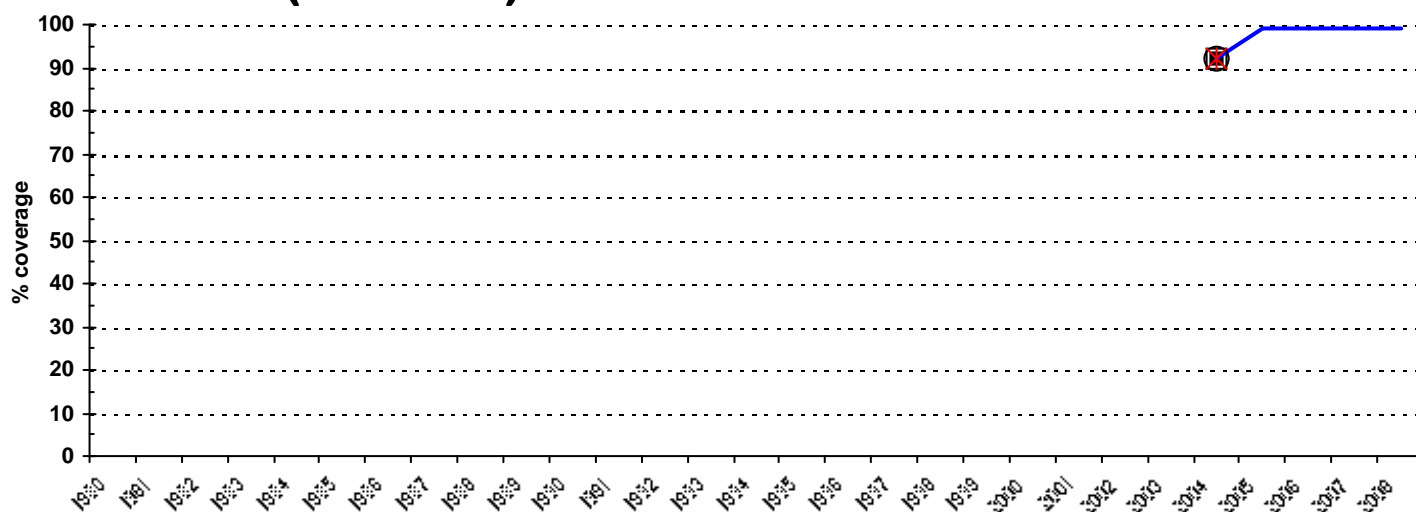
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam

Hib3 (1980-2008)



Description of trend

Hib vaccine introduced in 2002. Estimated immunization coverage levels are based on reported data. For missing data between years the imputed coverage is the linear interpolation between the two reported coverage rates. No survey data are available. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003							
2004	92	92	92	92	92		
2005	99	108	108	108	108		
2006	99						
2007	99						
2008	99						

*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**Coverage based on registration of doses administered by health care providers.

***In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

Brunei Darussalam

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.

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.

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Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	30
1984	48
1985	51
1986	50
1987	45
1988	43
1989	42
1990	40
1991	38
1992	57
1993	58
1994	64
1995	69
1996	74
1997	79
1998	66
1999	62
2000	77
2001	78
2002	79
2003	80
2004	68
2005	64
2006	64
2007	64
2008	65