World Health Organization

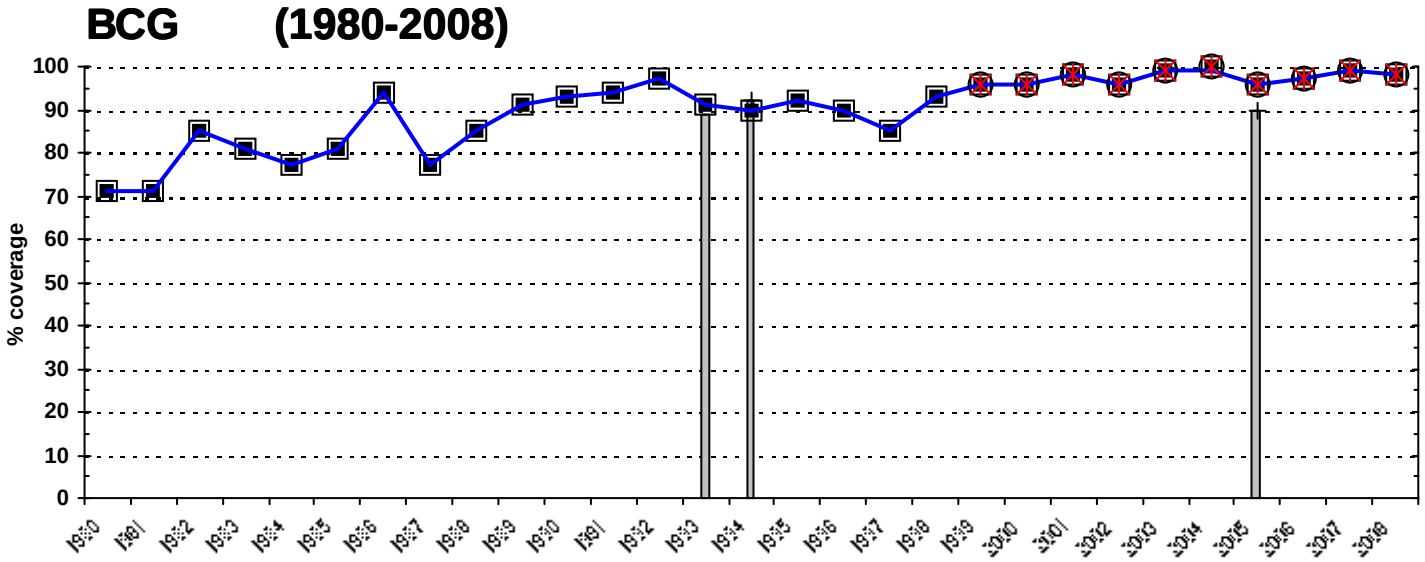
unicef

WHO/UNICEF
Review of National Immunization Coverage
1980-2008

Belize

July, 2009

Belize



Description of trend

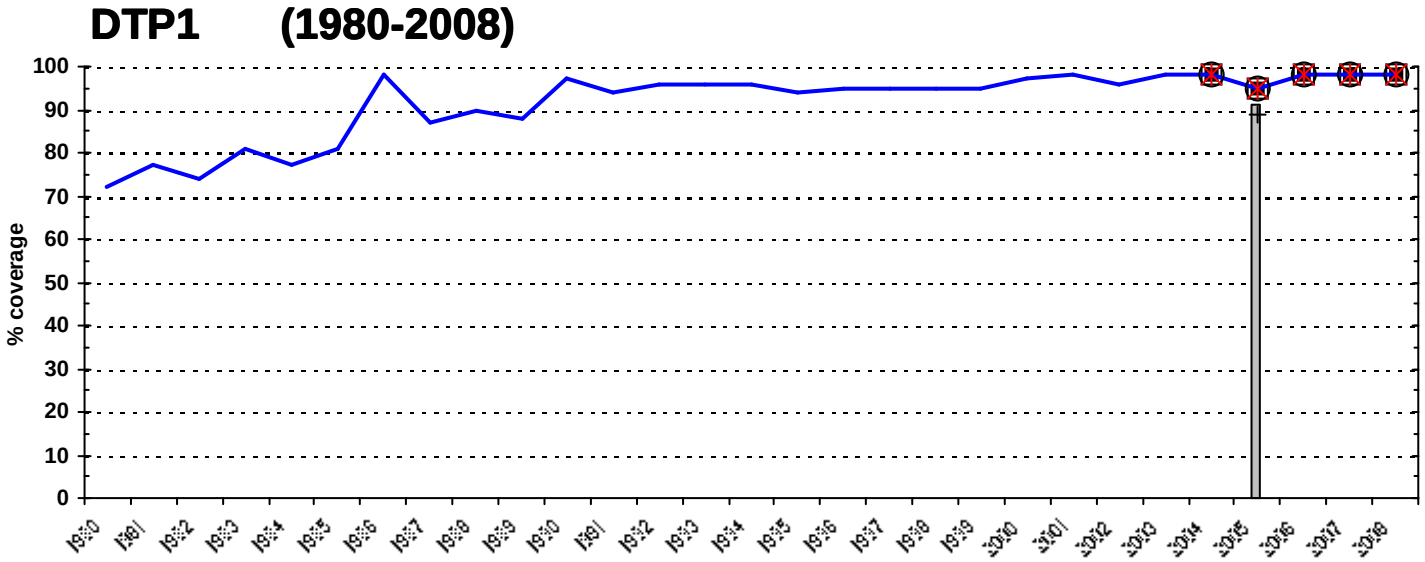
Trend follows WHO officially reported data. The high levels of coverage in the 1990s are supported by survey data. WHO/UNICEF recomme conducting a high quality survey to verify reported levels of coverage. 2005 MICS survey results are not considered; the sample size is less t 200 and card only coverage for third dose of DTP-HebB-Hib and polio vaccine is higher than for the first dose.

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	71	71	71				
1981	71	71	71				
1982	85	85	85				
1983	81	81	81				
1984	77	77	77				
1985	81	81	81				
1986	94	94	94				
1987	77	77	77				
1988	85	85	85				
1989	91	91	91				
1990	93	93	93				
1991	94	94	94				
1992	97	97	97				
1993	91	91	91			89	
1994	90	90	90			92	92
1995	92	92	92				
1996	90	90	90				
1997	85	85	85				
1998	93	93	93				
1999	96	96	96	96	96		
2000	96	96	96	96	96		
2001	98	98	98	98	98		
2002	96	96	96	96	96		
2003	99	99	99	99	99		
2004	99	100	100	100	100		
2005	96	96	96	96	96	90	90
2006	97	97	97	97	97		
2007	99	99	99	99	99		
2008	98	98	98	98	98		

*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.

Belize



Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001 and have received national reports reflecting DTP1 coverage from 200 onward. The DTP1 estimates from 2002 onward are based on these reports. For years prior to 2002 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. Thi relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004. WHO/UNICE recommend conducting a high quality survey to verify reported levels of coverage. 2005 MICS survey results are not considered; the sample is less than 200 and card only coverage for third dose of DTP-HebB-Hib and polio vaccine is higher than for the first dose.

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	72						
1981	77						
1982	74						
1983	81						
1984	77						
1985	81						
1986	98						
1987	87						
1988	90						
1989	88						
1990	97						
1991	94						
1992	96						
1993	96						
1994	96						
1995	94						
1996	95						
1997	95						
1998	95						
1999	95						
2000	97						
2001	98						
2002	96						
2003	98						
2004	98	98	98	98	98		
2005	95	95	95	95	95	91	89
2006	98	98	98	98	98		
2007	98	98	98	98	98		
2008	98	98	98	98	98		

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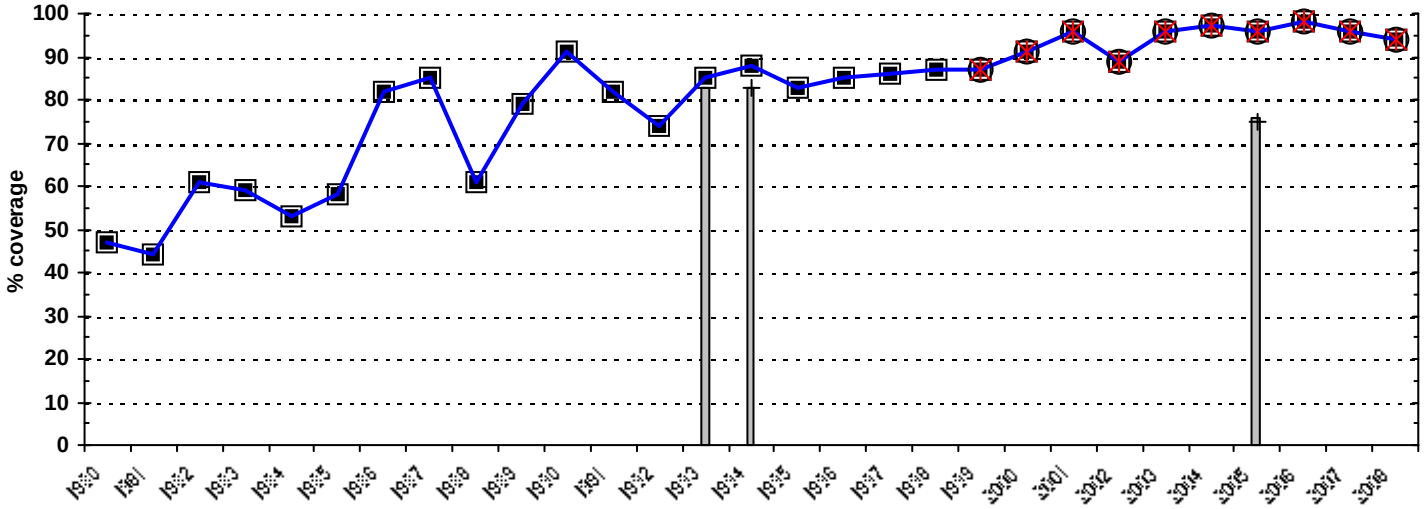
Belize

DTP3 (1980-2008)



Description of trend

Trend follows WHO officially reported data. In 1986 a special vaccination campaign of all antigens was implemented. The high coverage rate that year resulted from the increased vaccination activities. The high levels of coverage in the 1990s (around 88%) are supported by survey d (Maternal and Child Mortality Reports 1994 and 1995). 2005 MICS survey results are not considered; the sample size is less than 200 and ca only coverage for third dose of DTP-HebB-Hib and polio vaccine is higher than for the first dose. WHO/UNICEF recommend conducting a hig 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	47	47	47				
1981	44	44	44				
1982	61	61	61				
1983	59	59	59				
1984	53	53	53				
1985	58	58	58				
1986	82	82	82				
1987	85	85	85				
1988	61	61	61				
1989	79	79	79				
1990	91	91	91				
1991	82	82	82				
1992	74	74	74				
1993	85	85	85			83	
1994	88	88	88			83	83
1995	83	83	83				
1996	85	85	85				
1997	86	86	86				
1998	87	87	87				
1999	87	87	87	87	87		
2000	91	91	91	91	91		
2001	96	96	96	96	96		
2002	89	89	89	89	89		
2003	96	96	96	96	96		
2004	97	97	97	97	97		
2005	96	96	96	96	96	76	75
2006	98	98	98	98	98		
2007	96	96	96	96	96		
2008	94	94	94	94	94		

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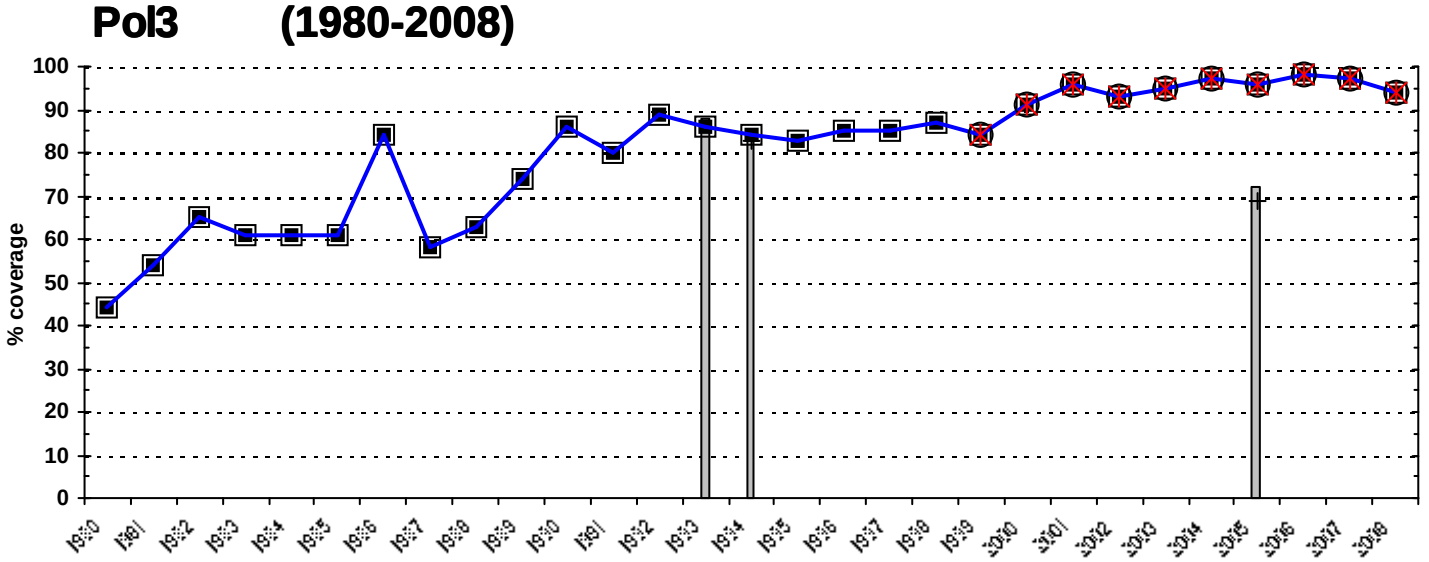

Description of trend

Trend follows WHO officially reported data. In 1986 a special vaccination campaign of all antigens was implemented. The high coverage durin period resulted from the increased vaccination activities. The high levels of coverage in the 1990s are supported by survey data. 2005 MICS results are not considered; the sample size is less than 200 and card only coverage for the third dose of DTP-HebB-Hib and polio vaccine is h than for the first dose. WHO/UNICEF recommend conducting a high quality surveys 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	44	44	44				
1981	54	54	54				
1982	65	65	65				
1983	61	61	61				
1984	61	61	61				
1985	61	61	61				
1986	84	84	84				
1987	58	58	58				
1988	63	63	63				
1989	74	74	74				
1990	86	86	86				
1991	80	80	80				
1992	89	89	89				
1993	86	86	86			88	
1994	84	84	84			83	83
1995	83	83	83				
1996	85	85	85				
1997	85	85	85				
1998	87	87	87				
1999	84	84	84	84	84		
2000	91	91	91	91	91		
2001	96	96	96	96	96		
2002	93	93	93	93	93		
2003	95	95	95	95	95		
2004	97	97	97	97	97		
2005	96	96	96	96	96	72	69
2006	98	98	98	98	98		
2007	97	97	97	97	97		
2008	94	94	94	94	94		

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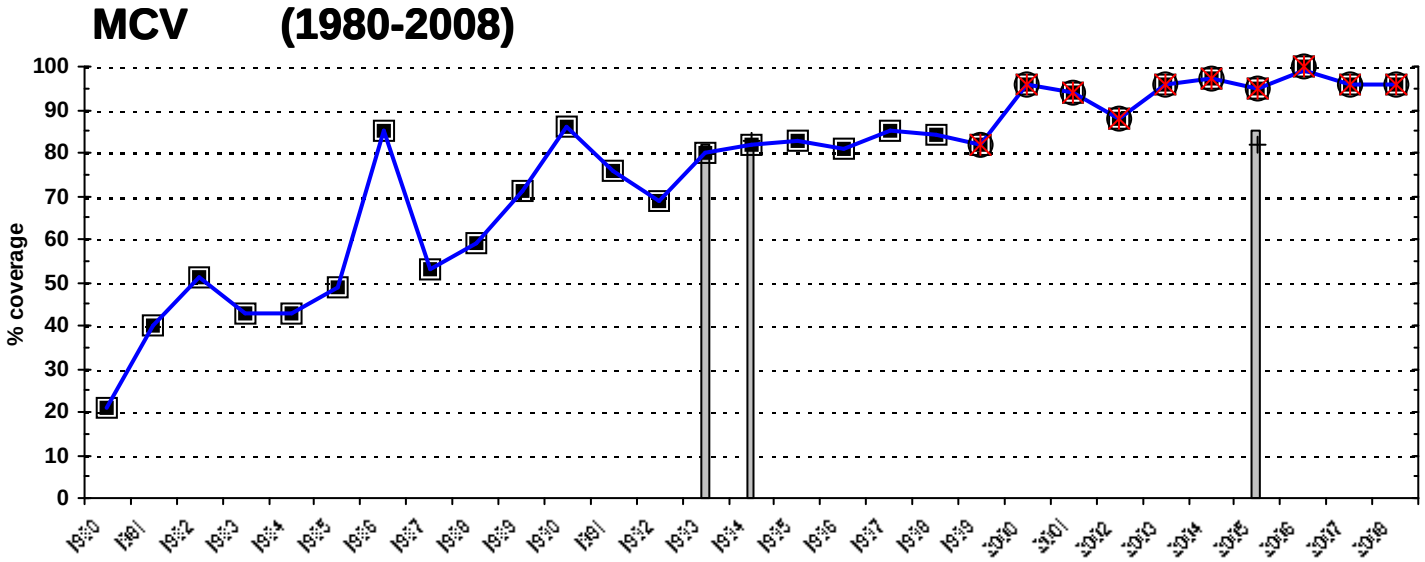

Description of trend

Trend follows WHO officially reported data. In 1986 a special vaccination campaign of all antigens was implemented. The high coverage duri that period resulted from the increased vaccination activities. The high levels of coverage in the 1990s are supported by survey data. In 199 special outreach activities in response to a rubella outbreak lead to increased levels of coverage with MMR. 2005 MICS survey results are n considered; the sample size is less than 200 and card only coverage for third dose of DTP-HebB-Hib and polio vaccine is higher than for the dose. 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	21	21	21				
1981	40	40	40				
1982	51	51	51				
1983	43	43	43				
1984	43	43	43				
1985	49	49	49				
1986	85	85	85				
1987	53	53	53				
1988	59	59	59				
1989	71	71	71				
1990	86	86	86				
1991	76	76	76				
1992	69	69	69				
1993	80	80	80			82	
1994	82	82	82			83	83
1995	83	83	83				
1996	81	81	81				
1997	85	85	85				
1998	84	84	84				
1999	82	82	82	82	82		
2000	96	96	96	96	96		
2001	94	94	94	94	94		
2002	88	88	88	88	88		
2003	96	96	96	96	96		
2004	97	97	97	97	97		
2005	95	95	95	95	95	85	82
2006	99	100	100	100	100		
2007	96	96	96	96	96		
2008	96	96	96	96	96		

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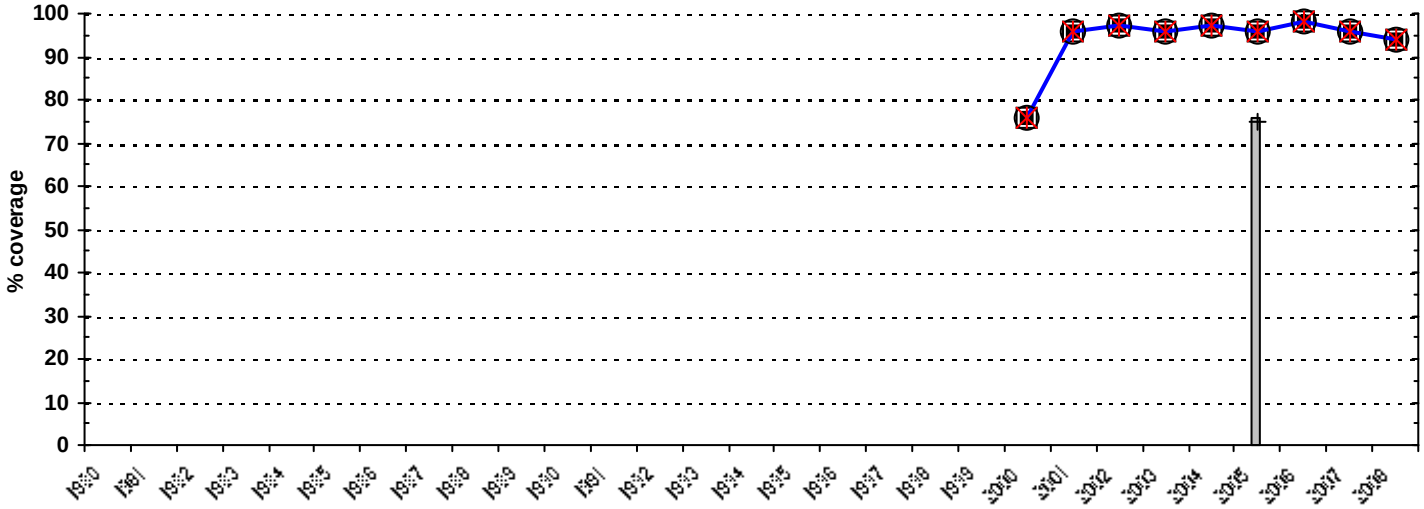
Belize

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine was introduced in 1999. Estimated immunization coverage levels are based on reported data. 2005 MICS survey results not considered; the sample size is less than 200 and card only coverage for the third dose of DTP-HebB-Hib and polio vaccine is higher than the first dose. WHO/UNICEF recommend conducting a high quality surveys 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	76	76	76	76	76		
2001	96	96	96	96	96		
2002	97	97	97	97	97		
2003	96	96	96	96	96		
2004	97	97	97	97	97		
2005	96	96	96	96	96	76	75
2006	98	98	98	98	98		
2007	96	96	96	96	96		
2008	94	94	94	94	94		

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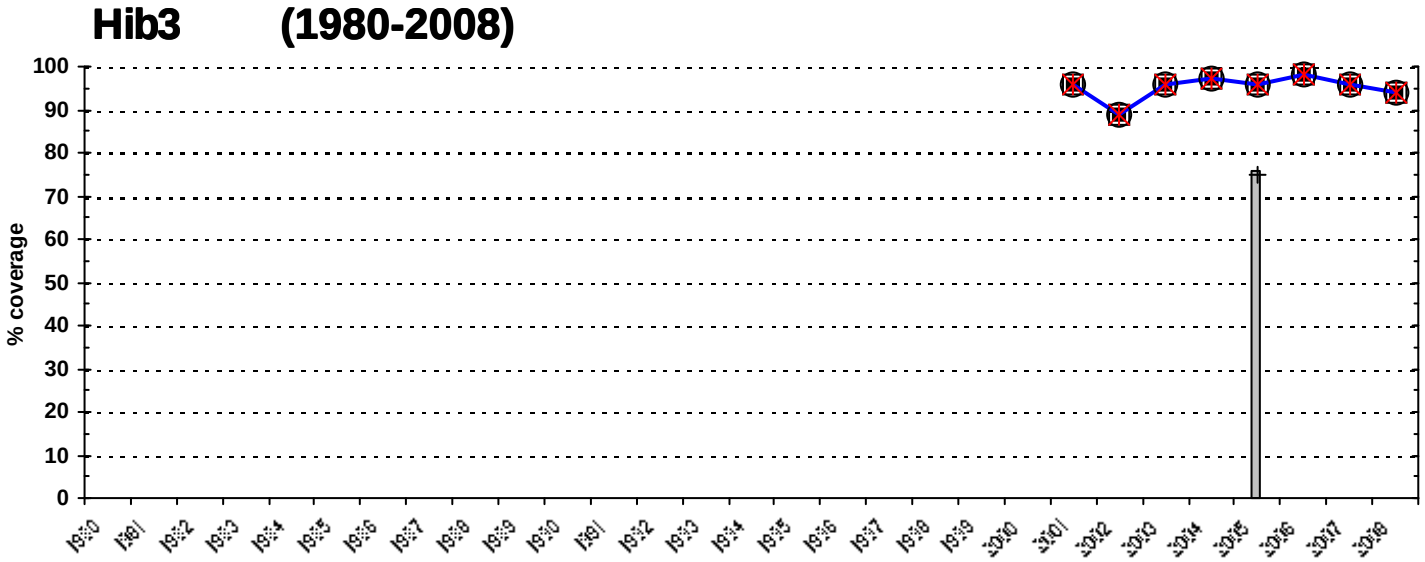

Description of trend

Hib vaccine introduced in 2001. Estimated immunization coverage levels are based on reported data. 2005 MICS survey results are not considered; the sample size is less than 200 and card only coverage for the third dose of DTP-HebB-Hib and polio vaccine is higher than for first dose. WHO/UNICEF recommend conducting a high quality surveys 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	96	96	96	96	96		
2002	89	89	89	89	89		
2003	96	96	96	96	96		
2004	97	97	97	97	97		
2005	96	96	96	96	96	76	75
2006	98	98	98	98	98		
2007	96	96	96	96	96		
2008	94	94	94	94	94		

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

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2005 Belize Multiple Indicator Cluster Survey 2006								
BCG	Card or History	90.2		18-29 m	169	64.3	2006	
BCG	C or H <12 month	90.2		18-29 m	169	64.3	2006	
DTP1	Card or History	90.6		18-29 m	169	64.3	2006	
DTP1	C or H <12 month	89		18-29 m	169	64.3	2006	
DTP3	Card or History	76.1		18-29 m	169	64.3	2006	
DTP3	C or H <12 month	74.6		18-29 m	169	64.3	2006	
Pol3	Card or History	72.3		18-29 m	169	64.3	2006	
Pol3	C or H <12 month	68.6		18-29 m	169	64.3	2006	
MCV	Card or History	85		18-29 m	169	64.3	2006	
MCV	C or H <12 month	81.9		18-29 m	169	64.3	2006	
HepB	Card or History	76.1		18-29 m	169	64.3	2006	
HepB	C or H <12 month	74.6		18-29 m	169	64.3	2006	
Hib3	Card or History	76.1		18-29 m	169	64.3	2006	
Hib3	C or H <12 month	74.6		18-29 m	169	64.3	2006	
PAB	n.a.	58.3		CBAW	314		2006	
1994 Maternal and Child Mortality Reports 1994 and 1995, in: From Girls to Women: Growing up Healthy in Belize, 1997								
BCG	Card or History	92		12-23 m			1995	
DTP1	Card or History			12-23 m			1995	
DTP3	Card or History	83		12-23 m			1995	not stated which DPT, assumed to be third dose
Pol3	Card or History	83		12-23 m			1995	not stated which OPV, assumed to be third dose
MCV	Card or History	83		12-23 m			1995	
1994 The Right to a Future: A Situation Analysis of Children in Belize 1997								
BCG	C or H <12 month	92		12-23 m			1995	not clear if by 12 months
DTP1	C or H <12 month			12-23 m			1995	
DTP3	C or H <12 month	83		12-23 m			1995	not stated which DPT, assumed to be third dose
Pol3	C or H <12 month	83		12-23 m			1995	not stated which OPV, assumed to be third dose
MCV	C or H <12 month	83		12-23 m			1995	
1993 Maternal and Child Mortality Reports 1994 and 1995, in: From Girls to Women: Growing up Healthy in Belize, 1997								
BCG	Card or History	89		12-23 m			1994	
DTP1	Card or History			12-23 m			1994	
DTP3	Card or History	83		12-23 m			1994	not stated which DPT, assumed to be third dose
Pol3	Card or History	88		12-23 m			1994	not stated which OPV, assumed to be third dose
MCV	Card or History	82		12-23 m			1994	

Belize

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.

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[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.

Belize

Year	PAB coverage estimate (%)
1980	
1981	75
1982	83
1983	89
1984	89
1985	88
1986	88
1987	88
1988	88
1989	88
1990	88
1991	88
1992	88
1993	87
1994	87
1995	87
1996	86
1997	86
1998	85
1999	85
2000	85
2001	84
2002	84
2003	86
2004	86
2005	87
2006	85
2007	87
2008	88