

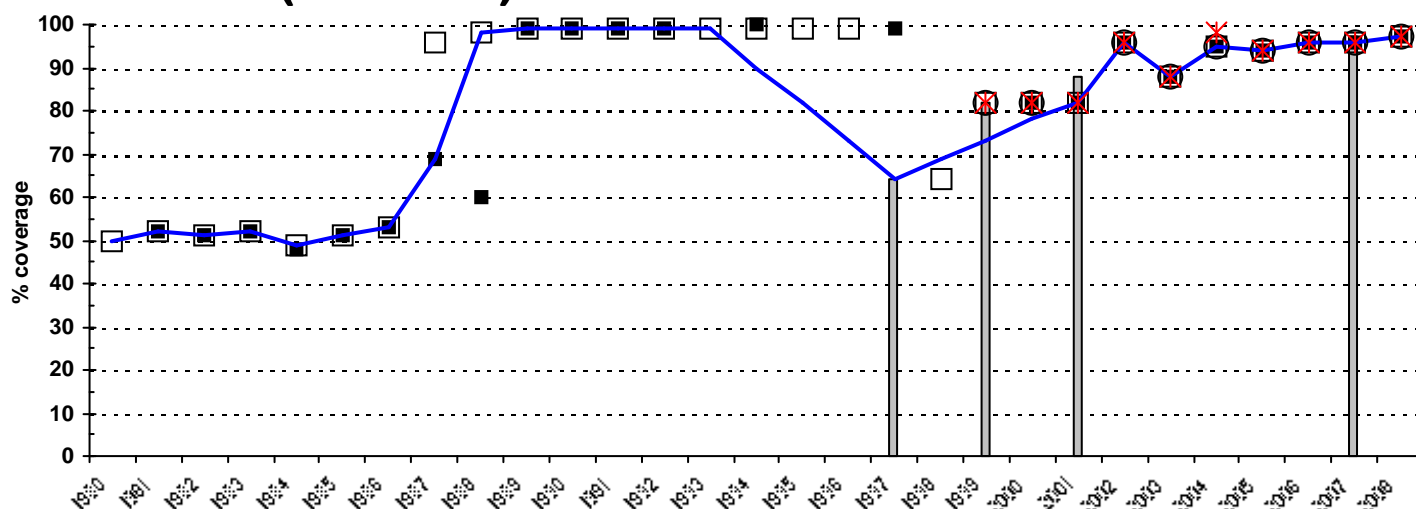
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

***Democratic People's Republic of
Korea***

July, 2009

Democratic People's Republic of Korea

BCG (1980-2008)



Description of trend

From 1994-1996 DPR Korea experienced a period of both economic crisis and natural disasters which compromised the government's ability produce vaccine. Survey data for 1997 (MICS 1998), show significantly lower coverage rates. The confirmation method is 'Card only', but al 95% of 12-23 months old children had a card. Increased international support began in 1996 and coverage improved. The MICS 2000 is not considered due to inconsistent results (e.g. DPT3 higher than DPT1). A nutrition assessment in 2002 (not national) reports an increase supporting reported coverage rates.

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	50	50					
1981	52	52	52				
1982	51	51	51				
1983	52	52	52				
1984	49	49	48				
1985	51	51	51				
1986	53	53	53				
1987	69	96	69				
1988	98	98	60				
1989	99	99	99				
1990	99	99	99				
1991	99	99	99				
1992	99	99	99				
1993	99	99					
1994	90	99	100				
1995	82	99					
1996	73	99					
1997	64		99			64	
1998	69	64					
1999	73	82		82	82	82	
2000	78	82	82	82	82		
2001	82	82	82		82	88	
2002	96	96	96	96	96		
2003	88	88	88	88	88		
2004	95	95	95	95	98		
2005	94	94	94	94	94		
2006	96	96	96	96	96		
2007	96	96	96	96	96	97	
2008	97	97	97	97	97		

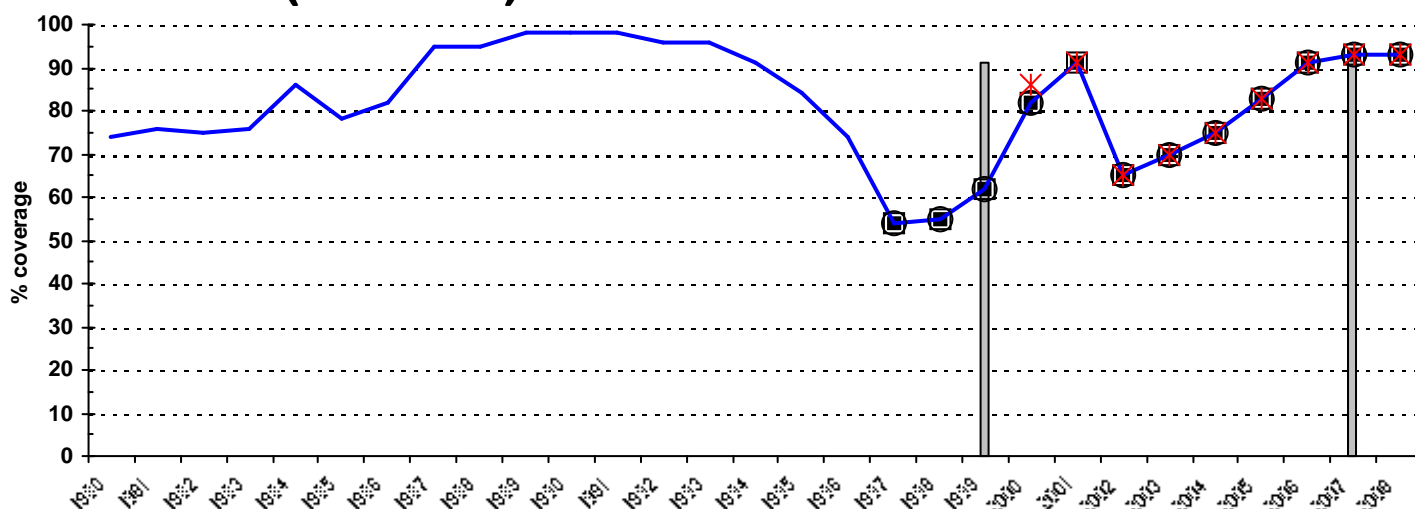
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Democratic People's Republic of Korea

DTP1 (1980-2008)



Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001 and have received data from 1997 onward. Estimates for these years are based on reported data. Estimates from 1980 to 1996 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 1 countries which were published between 1980 and 2004.

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	74						
1981	76						
1982	75						
1983	76						
1984	86						
1985	78						
1986	82						
1987	95						
1988	95						
1989	98						
1990	98						
1991	98						
1992	96						
1993	96						
1994	91						
1995	84						
1996	74						
1997	54	54	54	54			
1998	55	55	55	55			
1999	62	62	62	62		91	
2000	82	82	82	82	86		
2001	91	91	91	91	91		
2002	65	65	65	65	65		
2003	70	70	70	70	70		
2004	75	75	75	75	75		
2005	83	83	83	83	83		
2006	91	91	91	91	91		
2007	93	93	93	93	93	94	
2008	93	93	93	93	93		

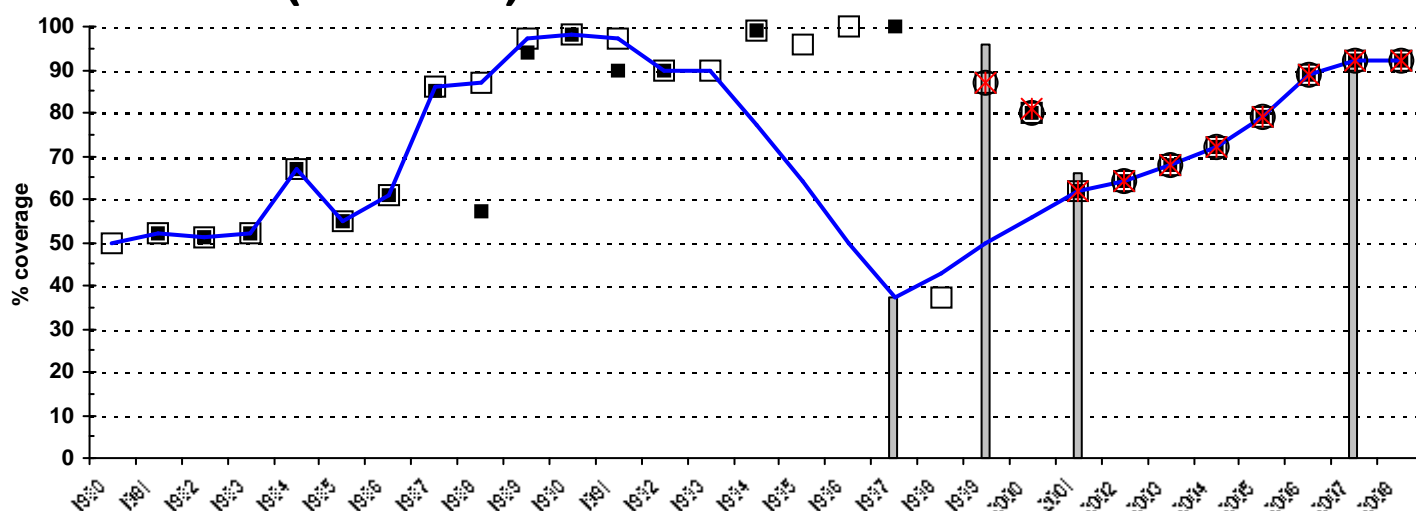
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Democratic People's Republic of Korea

DTP3 (1980-2008)



Description of trend

From 1994-1996 DPR Korea experienced a period of both economic crisis and natural disasters which compromised the government's ability produce vaccine. Survey data for 1997 (MICS 1998), show significantly lower coverage rates. The confirmation method is 'Card only', but al 95% of 12-23 months old children had a card. Increased international support began in 1996 and coverage improved. The MICS 2000 is not considered due to inconsistent results (e.g. DPT3 higher than DPT1). A nutrition assessment in 2002 (not national) reports an increase supporting reported coverage rates.

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	50	50					
1981	52	52	52				
1982	51	51	51				
1983	52	52	52				
1984	67	67	67				
1985	55	55	55				
1986	61	61	61				
1987	86	86	85				
1988	87	87	57				
1989	97	97	94				
1990	98	98	98				
1991	97	97	90				
1992	90	90	90				
1993	90	90					
1994	77	99	99				
1995	64	96					
1996	50	100					
1997	37		100			37	
1998	43	37					
1999	50	87		87	87	96	
2000	56	80	80	80	81		
2001	62	62	62		62	66	
2002	64	64	64	64	64		
2003	68	68	68	68	68		
2004	72	72	72	72	72		
2005	79	79	79	79	79		
2006	89	89	89	89	89		
2007	92	92	92	92	92	92	
2008	92	92	92	92	92		

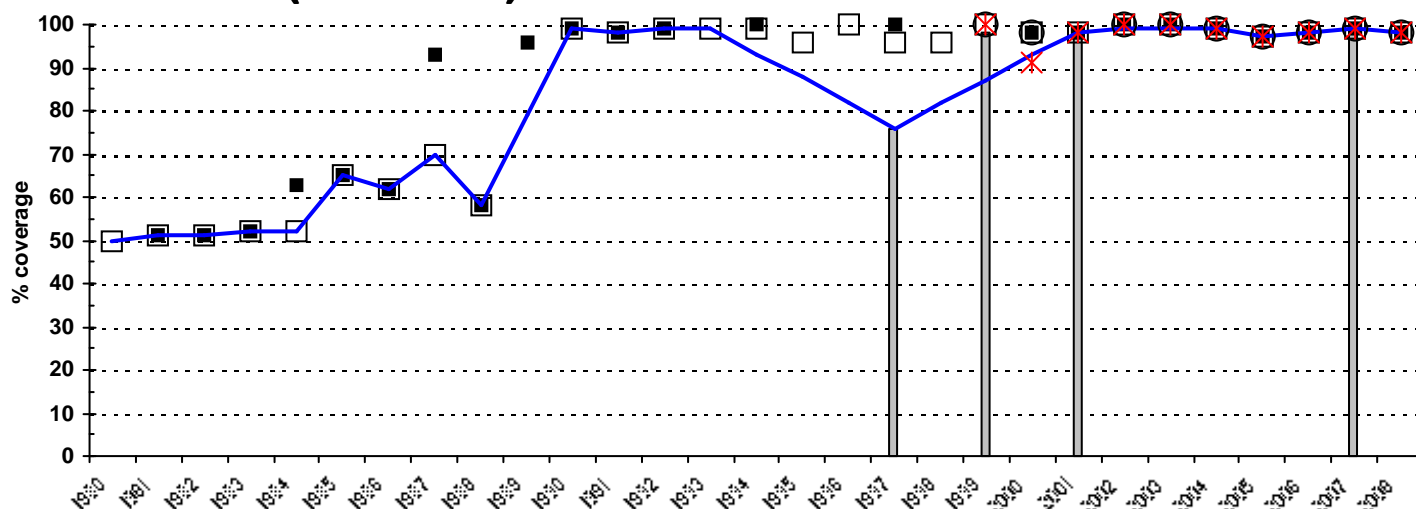
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Democratic People's Republic of Korea

Pol3 (1980-2008)



Description of trend

From 1994-1996 DPR Korea experienced a period of both economic crisis and natural disasters which compromised the government's ability to produce vaccine. Survey data for 1997 (MICS 1998), show significantly lower coverage rates. The confirmation method is 'Card only', but all 95% of 12-23 months old children had a card. Increased international support began in 1996 and coverage improved. The MICS 2000 is not considered due to inconsistent results (e.g. DPT3 higher than DPT1). A nutrition assessment in 2002 (not national) reports an increase in reported coverage rates.

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	50	50					
1981	51	51	51				
1982	51	51	51				
1983	52	52	52				
1984	52	52	63				
1985	65	65	65				
1986	62	62	62				
1987	70	70	93				
1988	58	58	58				
1989	79		96				
1990	99	99	99				
1991	98	98	98				
1992	99	99	99				
1993	99	99					
1994	93	99	100				
1995	88	96					
1996	82	100					
1997	76	96	100			76	
1998	82	96					
1999	87	100		100	100	98	
2000	93	98	98	98	91		
2001	98	98	98		98	97	
2002	99	100	100	100	100		
2003	99	100	100	100	100		
2004	99	99	99	99	99		
2005	97	97	97	97	97		
2006	98	98	98	98	98		
2007	99	99	99	99	99	99	
2008	98	98	98	98	98		

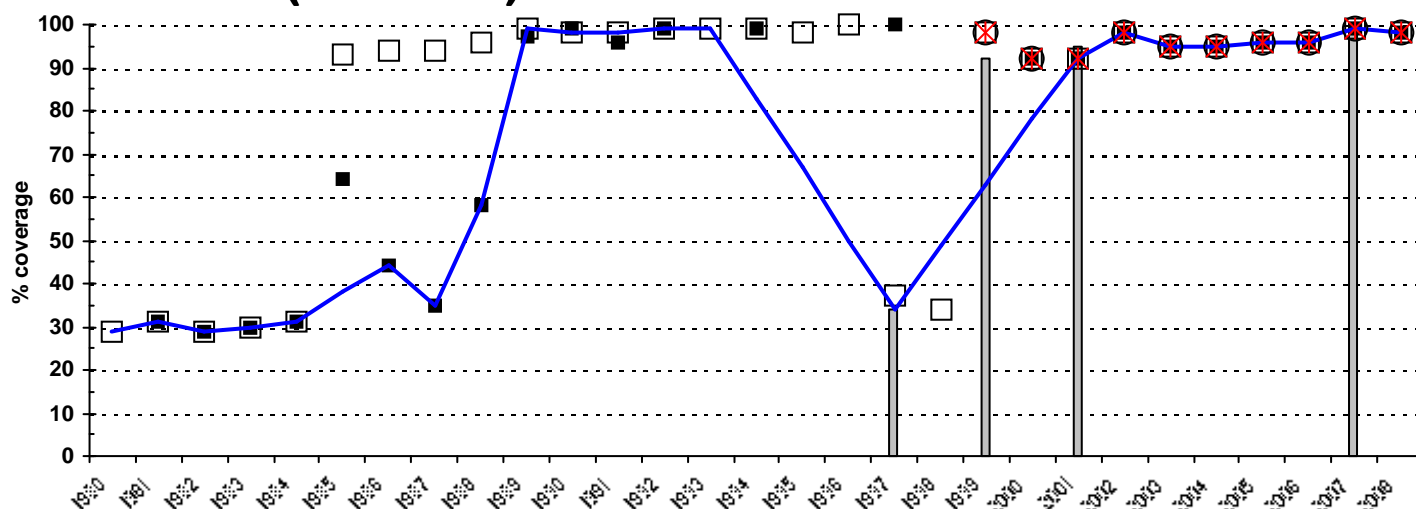
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Democratic People's Republic of Korea

MCV (1980-2008)



Description of trend

From 1994-1996 DPR Korea experienced a period of both economic crisis and natural disasters which compromised the government's ability produce vaccine. Survey data for 1997 (MICS 1998), show significant lower coverage rates. The confirmation method is 'Card only', but all 95% of 12-23 months old children had a card. Increased international support began in 1996 and coverage improved. The MICS 2000 is not considered due to inconsistent results (e.g. DPT3 higher than DPT1). A nutrition assessment in 2002 (not national) reports an increase supporting reported coverage rates.

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	29	29					
1981	31	31	31				
1982	29	29	29				
1983	30	30	30				
1984	31	31	31				
1985	38	93	64				
1986	44	94	44				
1987	35	94	35				
1988	58	96	58				
1989	99	99	97				
1990	98	98	99				
1991	98	98	96				
1992	99	99	99				
1993	99	99					
1994	83	99	99				
1995	67	98					
1996	50	100					
1997	34	37	100			34	
1998	49	34					
1999	63	98		98	98	92	
2000	78	92	92	92	92		
2001	92	92	92		92	95	
2002	98	98	98	98	98		
2003	95	95	95	95	95		
2004	95	95	95	95	95		
2005	96	96	96	96	96		
2006	96	96	96	96	96		
2007	99	99	99	99	99	99	
2008	98	98	98	98	98		

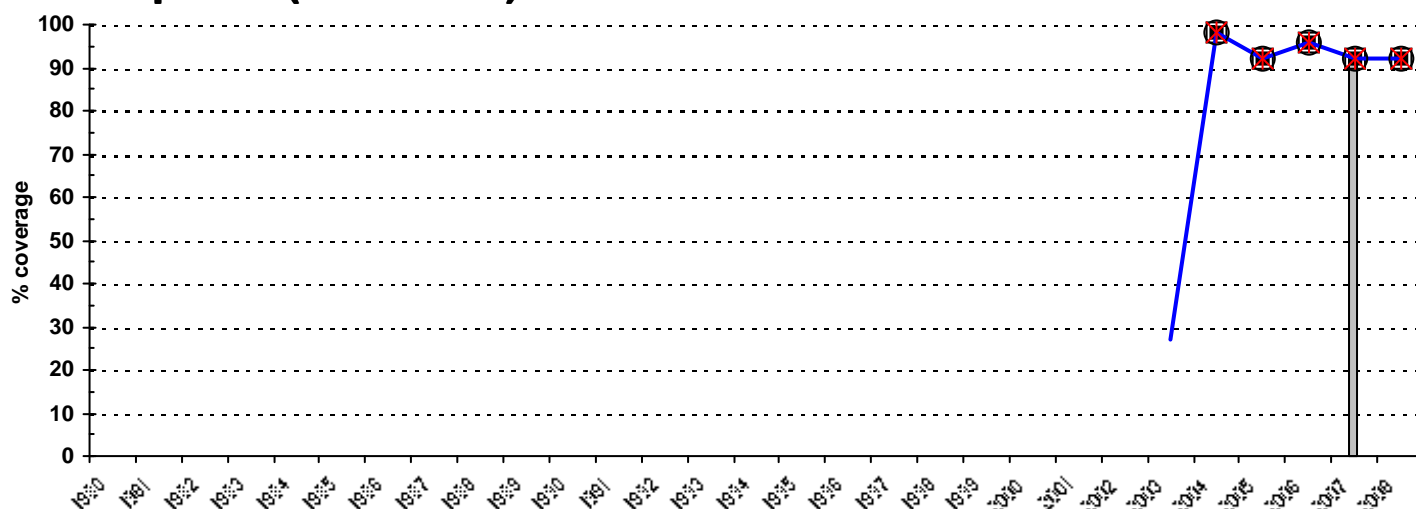
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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Democratic People's Republic of Korea

HepB3 (1980-2008)



Description of trend

Vaccine introduced in 2003 in 25% of the country and was available nationally in 2004. Estimated immunization coverage levels are based on reported data. No survey data are available.

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	27						
2004	98	98	98	98	98		
2005	92	92	92	92	92		
2006	96	96	96	96	96		
2007	92	92	92	92	92	92	
2008	92	92	92	92	92		

*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.

Democratic People's Republic of Korea

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2007 EPI Coverage Evaluation survey - 2008, Democratic People's Republic of Korea								
BCG	Card or History	96.9	Crude	12-23 m	4103	100	2008	Survey based on records held at medical clinics
DTP1	Card or History	93.9	Crude	12-23 m	4103	100	2008	Survey based on records held at medical clinics
DTP3	Card or History	92	Crude	12-23 m	4103	100	2008	Survey based on records held at medical clinics
Pol3	Card or History	99.3	Crude	12-23 m	4103	100	2008	Survey based on records held at medical clinics
MCV	Card or History	99.2	Crude	12-23 m	4103	100	2008	Survey based on records held at medical clinics
HepB	Card or History	92	Crude	12-23 m	4103	100	2008	Survey based on records held at medical clinics
2001 Report on the DPRK Nutrition Assessment 2002								
BCG	History	88.3		12-23 m			2002	Seven provinces and three cities
DTP3	History	65.7		12-23 m			2002	Seven provinces and three cities
Pol3	History	96.9		12-23 m			2002	Seven provinces and three cities
MCV	History	95.3		12-23 m			2002	Seven provinces and three cities
1999 Report of the Second Multiple Indicator Cluster Survey 2000, DPRK								
BCG	Card or History	81.5		12-23 m	1075	98.8	2000	
DTP1	Card or History	91		12-23 m	1075	98.8	2000	
DTP3	Card or History	95.5		12-23 m	1075	98.8	2000	
Pol3	Card or History	98.3		12-23 m	1075	98.8	2000	
MCV	Card or History	91.5		12-23 m	1075	98.8	2000	
1997 MICS 1998								
BCG	Card or History	63.9		12-23 m	294	94.3	1998	
DTP1	Card or History			12-23 m	294	94.3	1998	
DTP3	Card or History	37.4		12-23 m	294	94.3	1998	
Pol3	Card or History	76.5		12-23 m	294	94.3	1998	
MCV	Card or History	34.4		12-23 m	294	94.3	1998	

Democratic People's Republic of Korea

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.

Democratic People's Republic of Korea

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	
1986	
1987	
1988	
1989	89
1990	90
1991	90
1992	91
1993	91
1994	92
1995	90
1996	82
1997	60
1998	30
1999	55
2000	81
2001	80
2002	91
2003	91
2004	92
2005	90
2006	90
2007	91
2008	91