Hepatitis B prevention in the Republic of Korea

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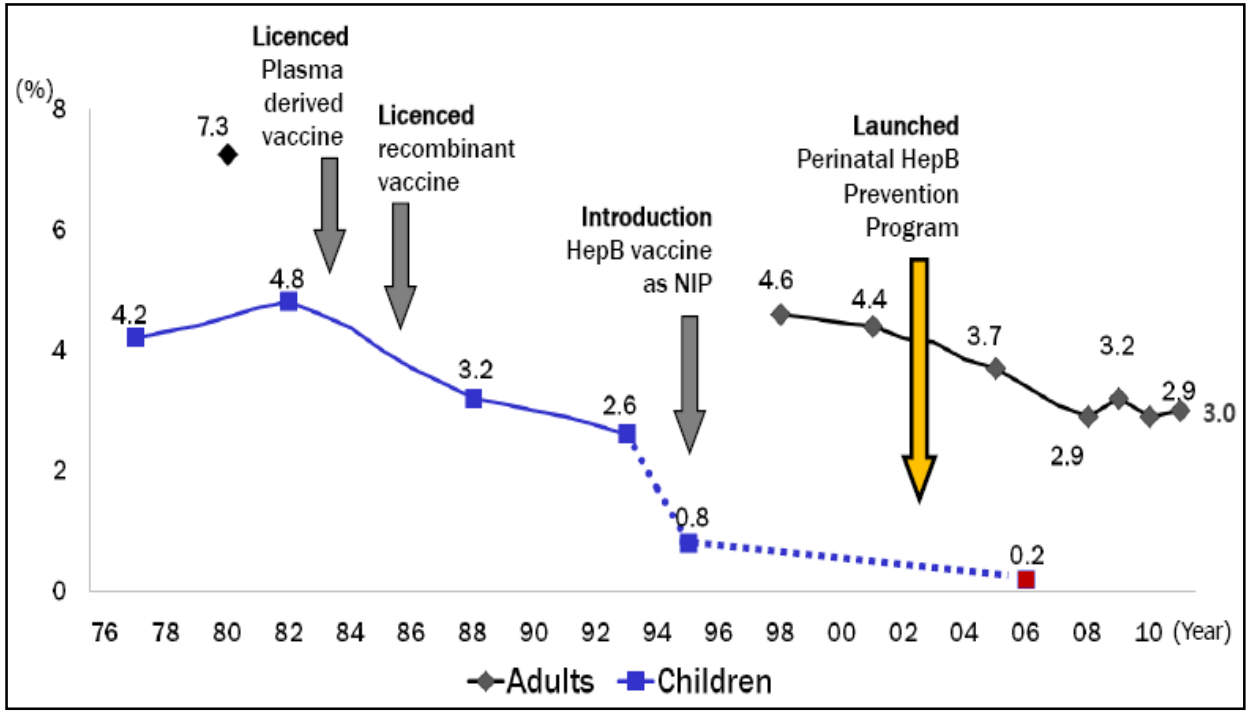
Hepatitis B prevalence/incidence

	HBsAg positives
General population (≥10 yrs) [2014]	2.9% (M 3.2%, F 2.7%)
Pre-school ages (4-6 yrs) [2006]	0.2%
School ages (10-18 yrs) [2014]	0.1%
Pregnant women [2011]	1.4%, 19-29 yrs 3.5%, 30-39 yrs

	HBeAg positives
HBsAg positive pregnant women [2010]	35.2%

Changes of HBsAg positive rate in Korea



Vaccination schedules 2018

Korea, Republic

Available free from the gov.
Recommended not for free

Immunization schedule

Disease	Vaccine Name/brand	Birth	≤4w	1m	2m	4m	6m	12m	15m	18m	19-23m	24-35m	4Y	6Y	11Y	12Y
HepB	Hepavax, Euvax	1st		2nd			3rd									
BCG	Danish (ID), Tokyo (PC)		1st													
DTaP	DTaP, DTaP-IPV, DTaP-IPV-Hib				1st	2nd	3rd		4th				5th		Tdap	
Polio	IPV				1st	2nd	3rd						4th			
PCV, Hib	PCV13 or PCV10 / Hib (LG)				1st	2nd	3rd	4th								
Rotavirus	Rotateq, Rotarix				1st	2nd	3rd									
MMR								1st					2nd			
VZ								1st								
Flu							yearly									
HepA								1st AND 2nd								
JE	Cell culture							1st AND 2nd				3rd		4th		5th
JE (live)	Chundu, SanofiPasteur							1st				2nd				
HPV	HPV2, HPV4 or HPV9														1st AND 2nd	

Vaccination coverage rate

Korea, Republic

Vaccines	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
BCG	97	98	99	99	99	99	98	96	96	98	98	97	93	87	89	81	73	74	75	91	92
DTP1	98	99	99	99	99	99	96	96	95	95	98	98	95	97	97	97	97	96	94	93	96
DTP3	98	98	99	99	99	99	94	94	94	91	98	96	88	97	97	97	97	86	74	80	90
HepB3	98	98	99	99	99	99	94	94	94	91	99	99	92	91	92	89	93	88	82	88	93
HepB_BD	93	93	92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hib3	98	98	97	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MCV1	98	98	99	99	99	99	98	93	92	92	99	99	99	96	97	96	95	90	85	85	89
MCV2	97	97	96	95	97	98	98	99	99	99	99	99	99	95	95	67	39	–	–	–	–
PCV3	98	97	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pol3	98	98	99	99	99	98	95	95	92	91	98	96	90	94	99	99	99	85	71	81	91
RCV1	98	98	99	99	99	99	98	93	92	92	99	99	99	96	97	96	95	90	85	85	89
RotaC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Vaccines	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1980
BCG	93	93	88	83	77	72	70	57	54	47	47	47	45	44	42
DTP1	99	97	96	94	92	90	96	80	80	91	91	91	87	82	82
DTP3	99	93	88	84	79	74	89	58	57	76	76	76	69	61	61
HepB3	99	–	–	–	–	–	–	–	–	–	–	–	–	–	–
HepB_BD	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hib3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MCV1	93	92	92	93	93	93	95	70	82	89	89	61	33	5	5
MCV2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PCV3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pol3	99	93	88	84	79	74	88	91	93	80	80	80	78	70	62
RCV1	93	92	92	93	93	93	95	70	82	89	89	61	33	5	–
RotaC	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

http://apps.who.int/immunization_monitoring/globalsummary/; 2017-11-7

Hepatitis B prevention- immunization

- Universal HepB immunization schedule: at birth, 1 mon and 6 mon of age by domestic monovalent vaccines

- Pre-license clinical study of Hexaxim (Sanofi-Pasteur) in Korea

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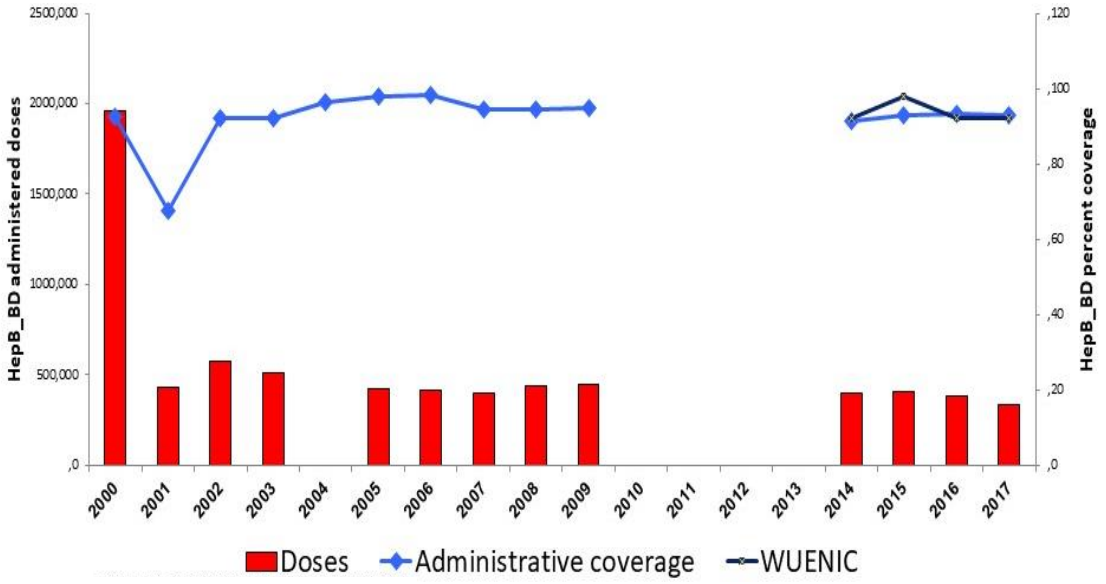
Immunogenicity and safety of a fully liquid DTaP-IPV-HB-PRP~T hexavalent vaccine compared with the standard of care in infants in the Republic of Korea

Yun-Kyung Kim [a], Emmanuel Vidor [b], Hwang Min Kim [c], Son Moon Shin [d], Kyung-Yil Lee [e], Sung-Ho Cha [f], Sang Hyuk Ma [g], Dong Ho Kim [h], Jin Lee [i], Su Eun Park [j], Hyunju Lee [k], Jong-Duk Kim [l], Ki Hwan Kim [m,1], Kyung-Hyo Kim [n], Jong-Hyun Kim [o,*], A3L31 Study GroupYae-Jean Kim [p], Dae Sun Jo [q], Hyun Hee Kim [r], Jin Han Kang [s], Hee Soo Kim [s], Joon Bang [t], Yongho Oh [u]

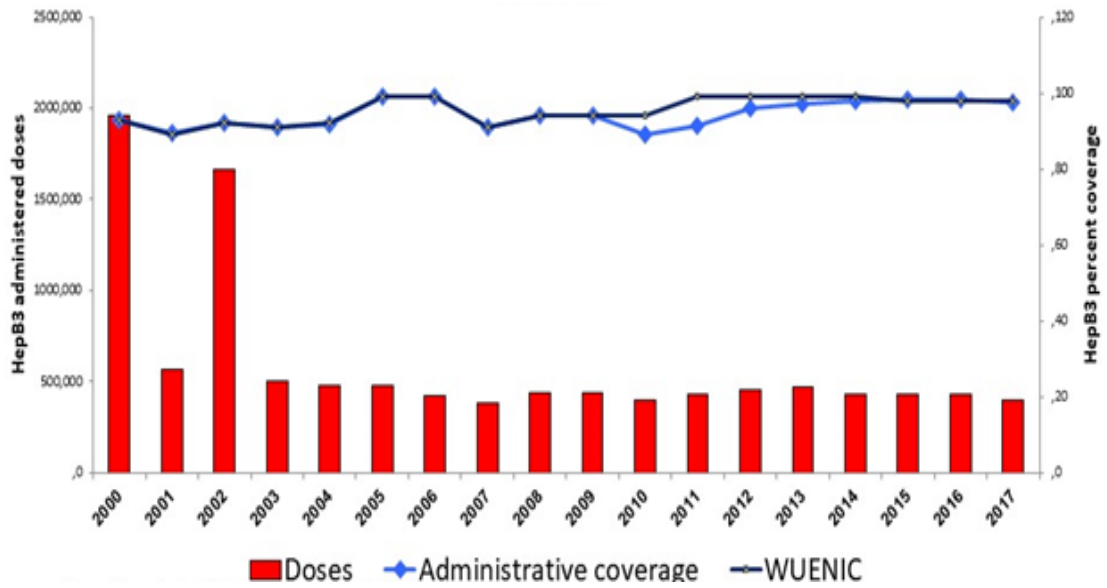
Hepatitis B prevention- immunization

Korea, Republic

HepB birth dose coverage



HepB3 coverage



http://apps.who.int/immunization_monitoring/globalsummary/countries?countrycriteria%5Bcountry%5D%5B%5D=KOR#; 2018-7-19

Perinatal hepatitis B prevention

- In July 2000, The National Health Insurance cover the costs related to all the antenatal tests including HBsAg testing

HBsAg testing status in >100 maternity hospitals (2003)

Test	Hospitals doing tests for pregnant women		
	All (%)	High risk only (%)	None (%)
HBsAg	99.7	0.3	0.0
Anti-HBs	93.5	1.5	2.1

Seo K, et al. Evaluation of antenatal hepatitis B screening and neonatal immunization program of Korean hospitals. KCDC, 2003

- Recommended schedule of HepB perinatal prophylaxis in Korea
  - within 12 hours of birth
    HBIG 0.5 mL (100-125 IU) + 1st HepB vaccine
  - 1 month of age
    2nd HepB vaccine
  - 6 months of age
    3rd HepB vaccine
  - 9-15 months of age
    Serologic test for HBsAg, anti-HBs

Hepatitis B Perinatal Transmission Prevention Program in Korea

- Launched in July 2002
- In conjunction with the Korean Medical Association
- Government covers the 100% cost of
  - HBIG
  - Three doses of hepatitis B vaccine
  - HBsAg and anti-HBs testing

✓ For all infants born to HBsAg positive mothers

Program outcome [2002-2010]

Outcome	Viral markers	Numbers	Rates (%)
Success	HBsAg (-) /anti-HBs (+)	64,650	92.36
	HBsAg (-) /anti-HBs (-)	3,151	4.50
Fail	HBsAg (+) /anti-HBs (-)	2,153	3.08
	HBsAg (+) /anti-HBs (+)	45	0.06
	Total	69,999	100.0

- Registered rate of program (2010): 98.1%
- Total registered cases = 125,855
- Tested cases for HepB viral markers = 69,999 (55.6%)

✓ Outcome: succeeded 96.86%, failed 3.14%
(HBeAg+ rate of child bearing women≒36%)

Kim JH , et al. The appraisement of perinatal hepatitis B virus transmission control program in the Republic of Korea. KCDC, 2011

WPRO Hepatitis B control certification [2008]

Report of Certification Panel for achievement of hepatitis B control goal in South Republic of Korea

The Republic of Korea submitted their request for certification of achievement of the hepatitis B control goal on April 4, 2008. The certification panel reviewed the original documents and subsequent response to the queries raised by members of the panel. Based on this review, the certification panel reached the unanimous conclusion that HBsAg seroprevalence is less than 1% among children born after 1992 and who are at least 5 years old. Hence, the Republic of Korea has effectively achieved the final regional goal of <1% chronic HBV infection rates among children at least five years of age.

The key evidence informing this conclusion were:

1) **The nationwide representative sero-survey among the population 10 years of age or older conducted as part of the 3rd Korea National Health and Nutrition Examination Survey, 2005**: This survey showed that while the overall HBsAg positive rate among the population 10 years or older is 3.7% (3.2-4.2) [4.4% among men and 3% among women], the seroprevalence was 0.2% [0.0-0.6%] among the population 10-14 years old. This latter group was born between 1991-1994 after the start of nationwide hepatitis B immunization.

2) **The special hepatitis B sero-survey of the 4-6 year old population (2007):** This was a nationwide representative survey sampling 12 children aged 4-6 years of age from each of the 251 public health centers distributed across the country (one center for each of 251 cities/counties) which provides free basic preventive and outpatient clinical services. A total of 3012 children were sampled with only 10 children refusing to participate. This survey noted a seroprevalence of 0.2% (0.0-0.3%). This survey also noted a vaccination coverage rate of 99.7% (99.5% - 99.9%) with three doses of hepatitis B vaccine among children whose vaccination records could be retrieved[1].

Although these surveys were not population based, we are all convinced that they are representative of the Korean population.

The results from these two serosurveys support the conclusion that South Korea has achieved the final regional goal for less than 1% chronic HBV infection among children at least five years old.

First country verified for hepatitis B control in WPRO

- HepB vaccination coverage rate = 94.5%
- Sero-prevalence of HBsAg
  - 0.2% in 10~14 yrs of age
  - 0.2% in 4~6 yrs of age