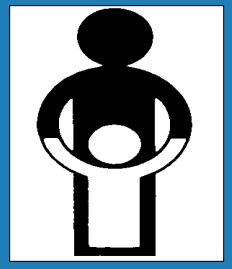
Hepatitis Update

PAHO TAG
Buenos Aires, Argentina; July 2011

Dr. Steven Wiersma
WHO Geneva

World Health Organization



Hepatitis A Update

Countries with HepA in Schedule

- PAHO: Argentina, Panama, USA, Uruguay
- AFRO: None
- EMRO: Bahrain, Iraq, Saudi Arabia
- EURO: Greece, Israel, Kazakhstan
- SEARO: None
- WPRO: China

  – source: 2009 JRF

Immunological Basis for HepA

- To give immunization managers and vaccination professionals brief and easily-understood overview of the scientific basis of vaccination, and also the immunological basis for WHO position on vaccine use
- Part of the Immunological Basis for Immunization Series: Module 18
- Published as ISBN 9789241501422

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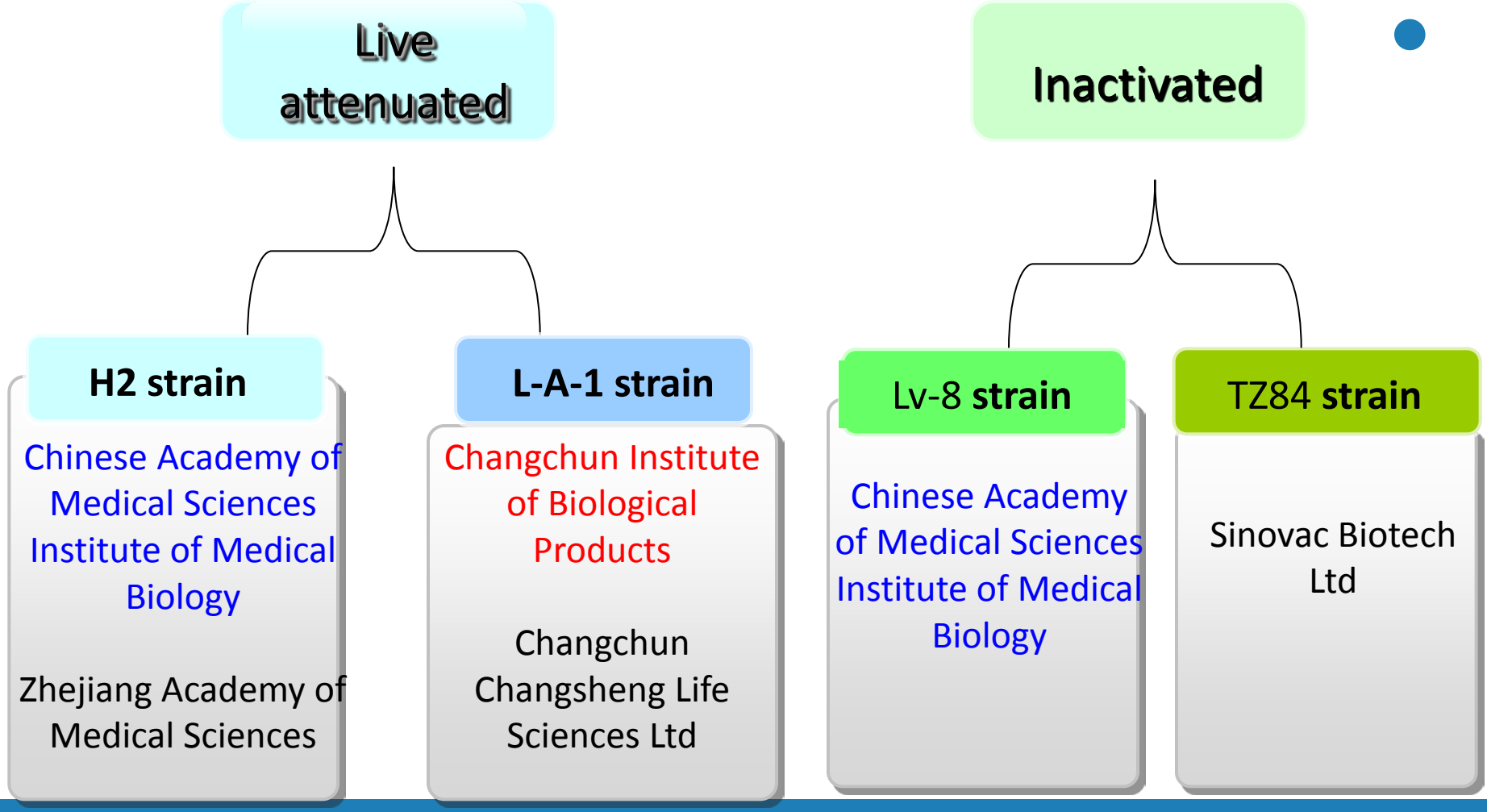
Hepatitis A vaccine manufacturers, China*

*Information provided by Dr Wei *Jiang,Changchun Inst. Biological Product, China*



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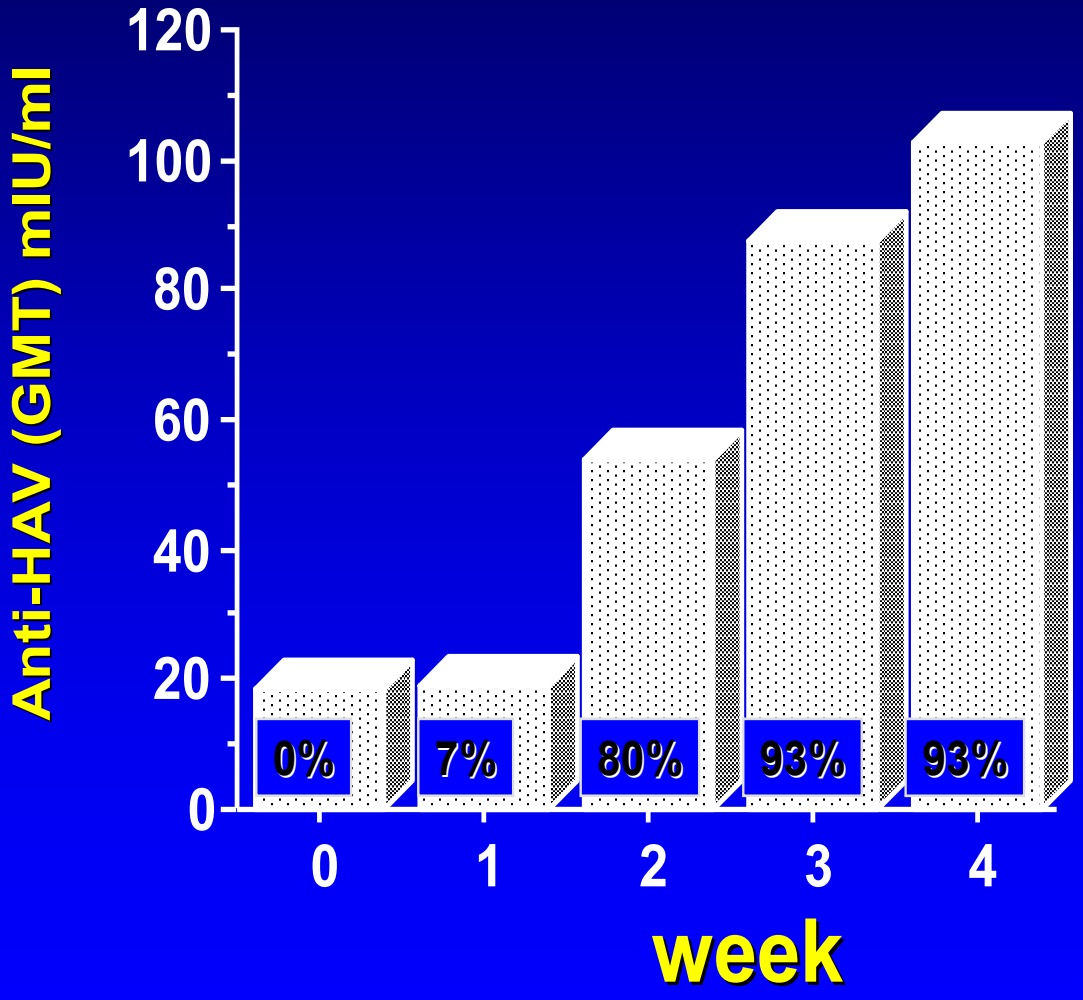
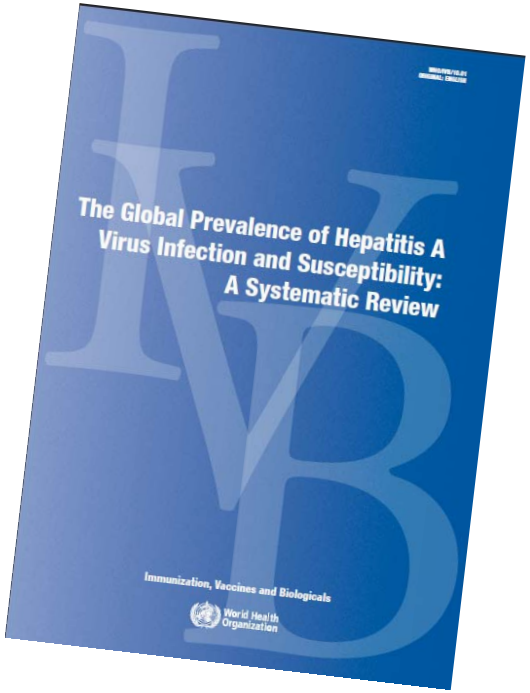
Rapid Seroconversion Following a Single Dose of an HAV Vaccine



Shouval D et al. Vaccine 1993;11:suppl 1 9S

Systematic Review

- Systematic review of seroprevalence of markers of HAV infection throughout the world by country/GBD region, age, and sex
- Published as WHO/IVB/10.01



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Epidemiology of Hepatitis A—Paradox

- As incidence rate of infection decreases, average age of infection increases, incidence of symptomatic disease may increase
- Globally decreasing incidence of infection between 1990 and 2005
  - Incidence inversely correlated with economic development and sanitation
- Primary Sequelae
  - Asymptomatic/mild infection without jaundice
  - Symptomatic infection: mild, moderate, severe
  - Fulminant liver failure: resolves, liver transplant, death

Age Specific Seroprevalence by Region

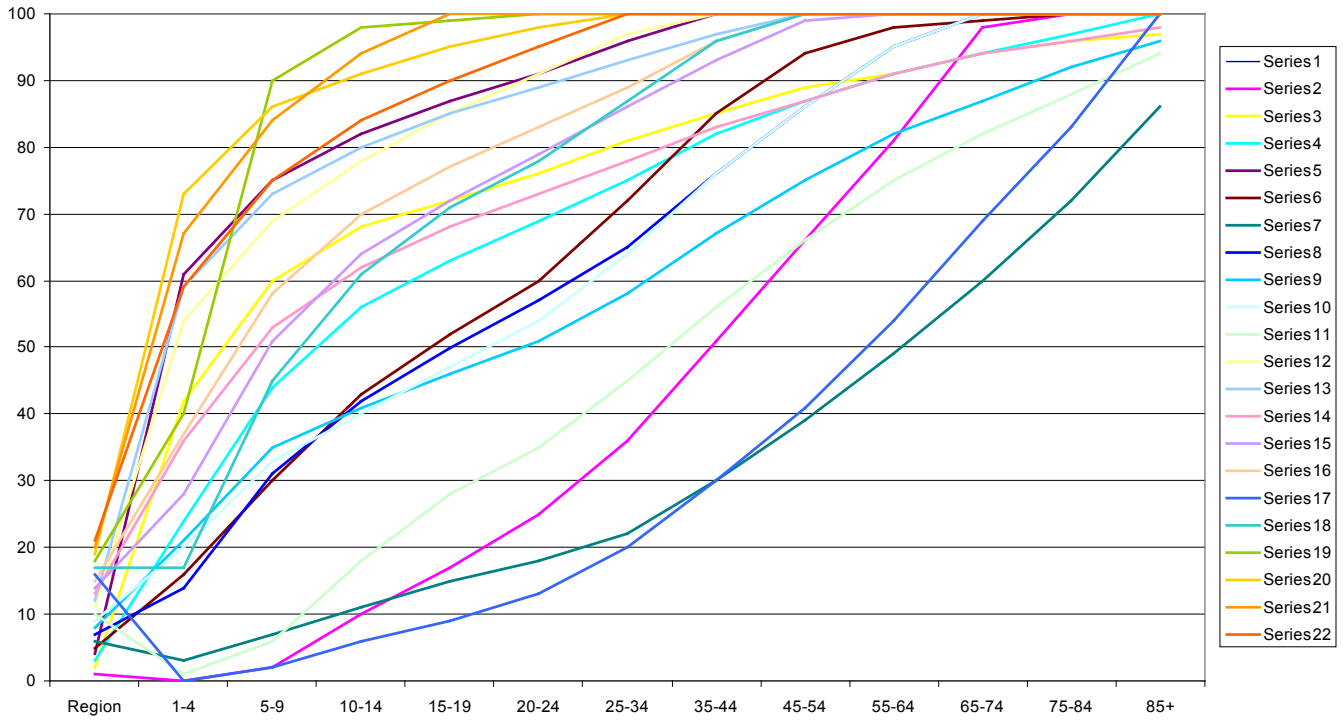

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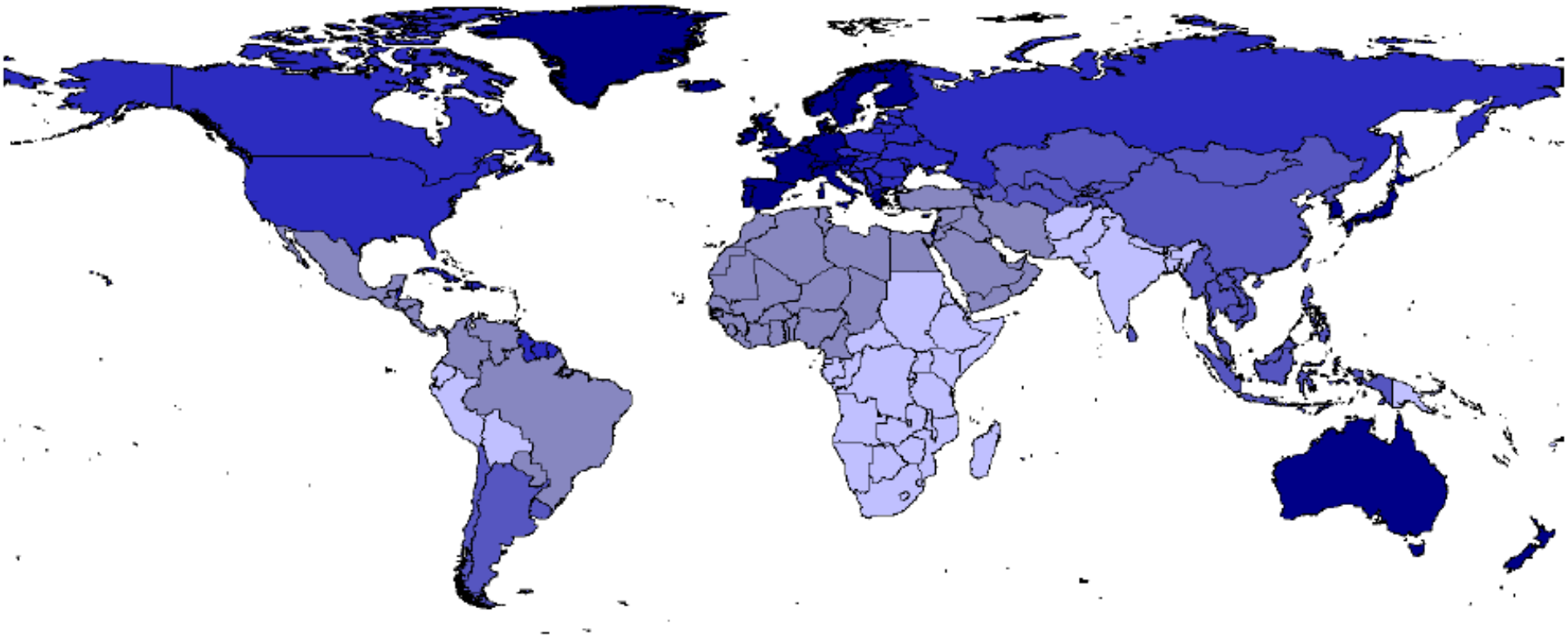
Table 5. Summary of Findings for Hepatitis A Virus by World Region.

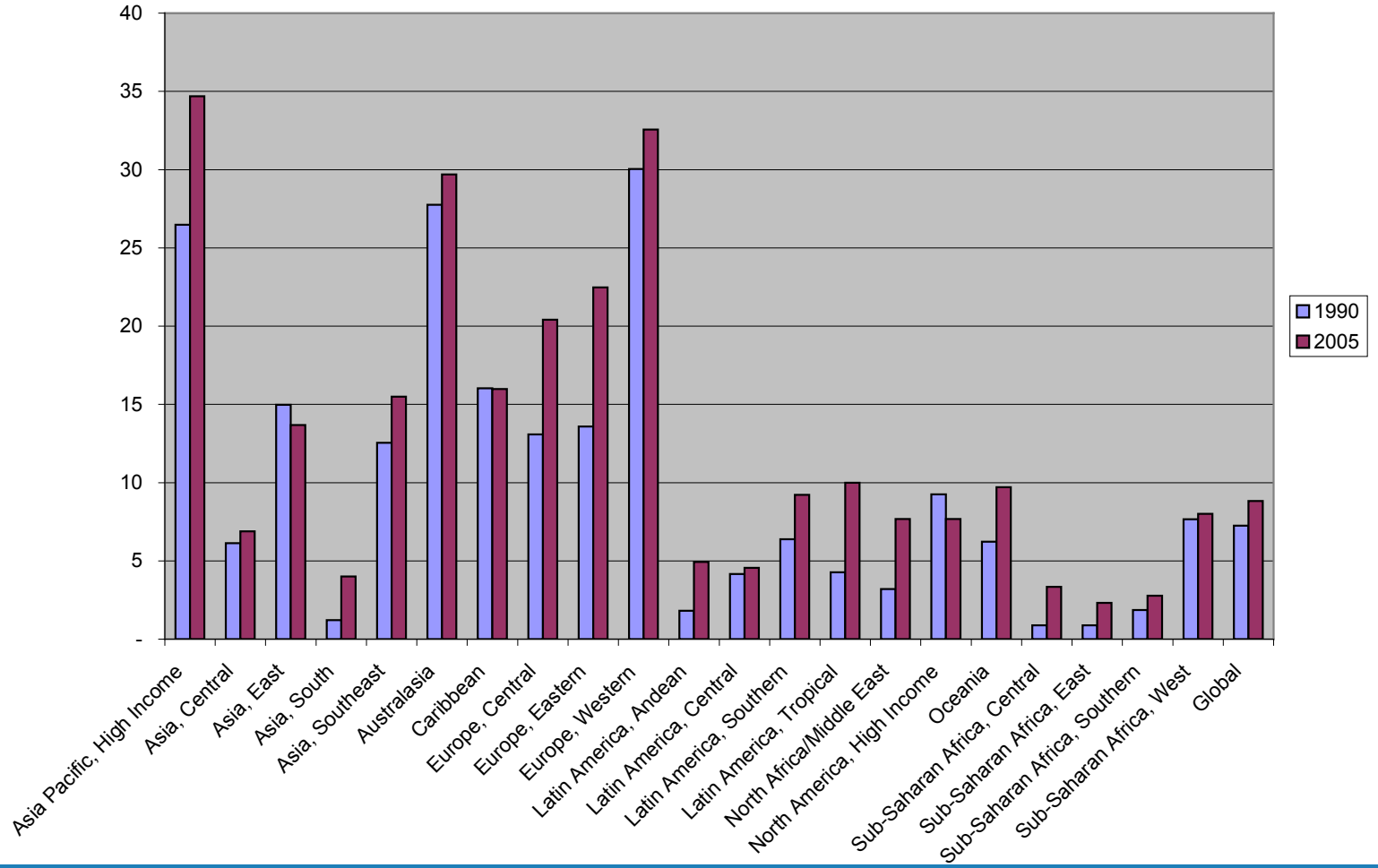
	Region	*Population Seroprevalence*		*Data Sources* (adjusted for the total number of countries in region)	
		Child Immunity Rate	Adult Susceptibility Rate	Total Articles Available	Recent Articles Available
1	High income Asia Pacific	Low	High	▲▲▲	▲
2	Central Asia	Medium	Low-Medium	▽▽	▽▽
3	East Asia	Low-Medium	Low-Medium	▲▲▲	▲
4	South Asia	High-Medium	Very Low	▲▲▲	▲
5	Southeast Asia	Low-Medium	Low-Medium	▲	▽▽
6	Australasia	Low	High	▲▲	▲
7	Caribbean	Low-Medium	Medium	▽▽	▽▽
8	Central Europe	Low-Medium	Medium	▲	▲
9	Eastern Europe	Low-Medium	Medium	▲	▽▽
10	Western Europe	Low	High	▲▲▲	▲
11	Andean Latin America	High-Medium	Very Low	▲	▽▽
12	Central Latin America	High-Medium	Low	▽	▽▽
13	Southern Latin America	Medium	Low-Medium	▲▲	▲
14	Tropical Latin America	Medium	Low	▲▲▲	▲▲▲
15	North Africa / Middle East	Medium	Low	▲▲	▲
16	High income North America	Low	Medium	▲▲▲	▲▲▲
17	Oceania	Medium	Very Low	▽▽	▽▽▽
18	Central sub-Saharan Africa	High	Very Low	▽▽	▽▽▽
19	East sub-Saharan Africa	High	Very Low	▽▽	▽▽
20	South sub-Saharan Africa	High	Very Low	▽	▽▽
21	West sub-Saharan Africa	High-Medium	Low	▽▽	▽▽▽

Figure 10. Estimated adult susceptibility rate. Darker shades indicate a greater proportion of at-risk adults.



*Anti-HAV age 35-44: high >40%, medium 20-39%, low-medium 10-19%, low 1-9%, very low =0%

Average Age of Infection 1990 and 2005



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Hepatitis A outcomes by GBD region 1990 & 2005

	Total Infections		Deaths	
Region	1990	2005	1990	2005
Caribbean	579,871	587,437	375	319
Latin America, Andean	1,092,666	1,072,866	23	172
Latin America, Central	3,862,841	3,941,533	377	467
Latin America, Southern	977,302	891,209	148	251
Latin America, Tropical	3,498,523	3,527,103	444	1,181
North America, High Income	621,961	569,394	149	101
Grand Total	117,160,685	121,046,505	30,283	35,345

SAGE HepA Working Group

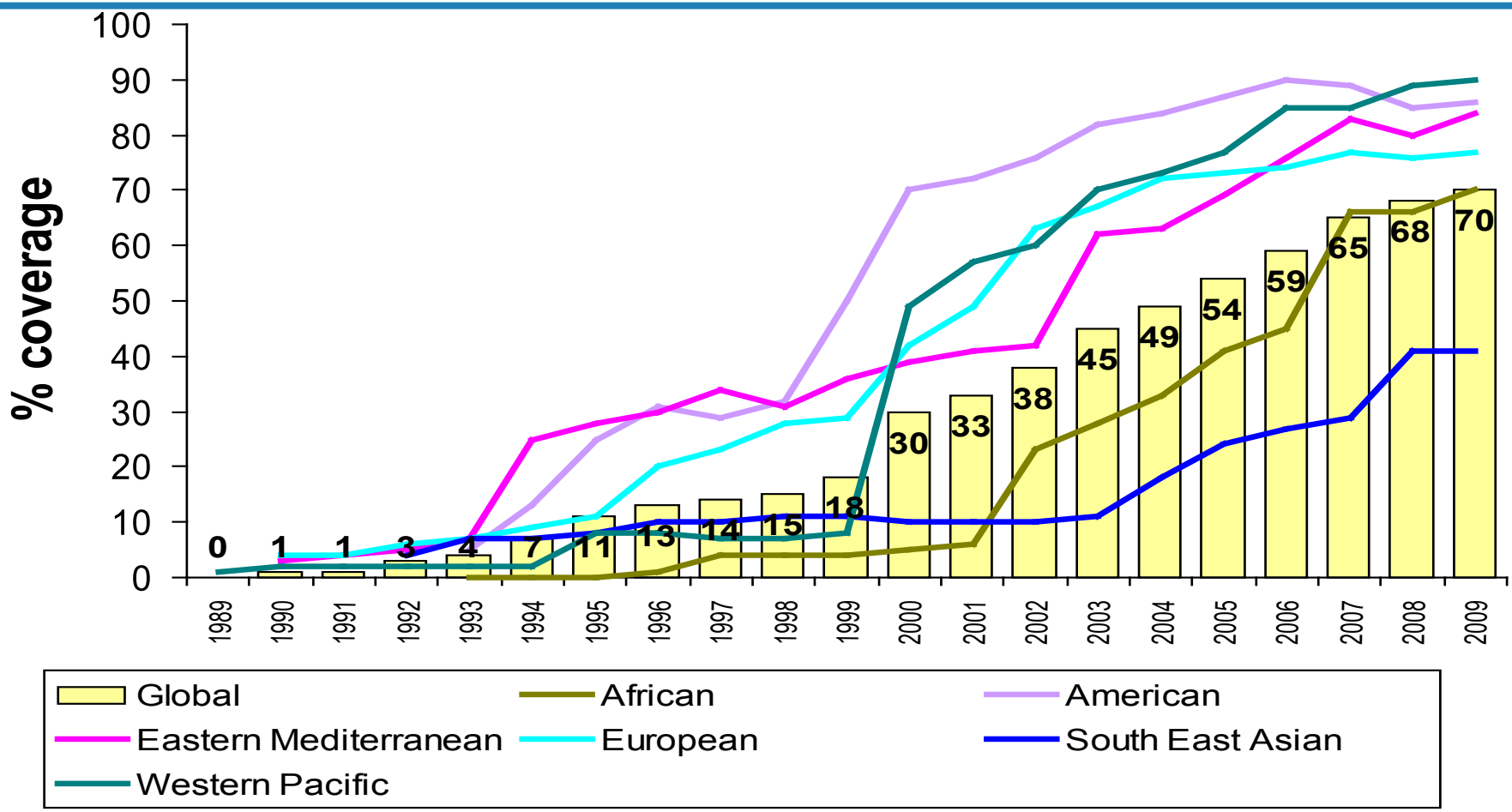
- Formed in 2010
- Buenos Aires meeting 2010.
- November 2011 SAGE
- *SAGE Members:* Art Reingold (Chair, USA), Xiaofeng Liang (China)
- *Experts:* Jeffrey Mphahlele (S Africa), John Ward (USA), Marta Vacchino (Argentina), Andrew Hall (UK), Daniel Shouval (Israel)

Next Steps

- Review and "GRADE" evidence:
  - Does HepA prevent HAV-related disease?
  - Does HepA prevent disease when given post exposure?
  - Does universal childhood immunization reduce burden of hepatitis A in the population?
  - Does HepA given to children provide long-term protection?
  - Does single dose of hepatitis A vaccine prevent HAV-related disease?
- Guidance to countries to detect changing epidemiology
- Update position statement—early 2012

Hepatitis B Update

Global Immunization 1989-2009, 3rd dose of Hepatitis B coverage in infants global coverage at 70% in 2009



Source: WHO/UNICEF coverage estimates 1980-2009, July 2010, 193 WHO Member States. Date of slide: 26 July 2010

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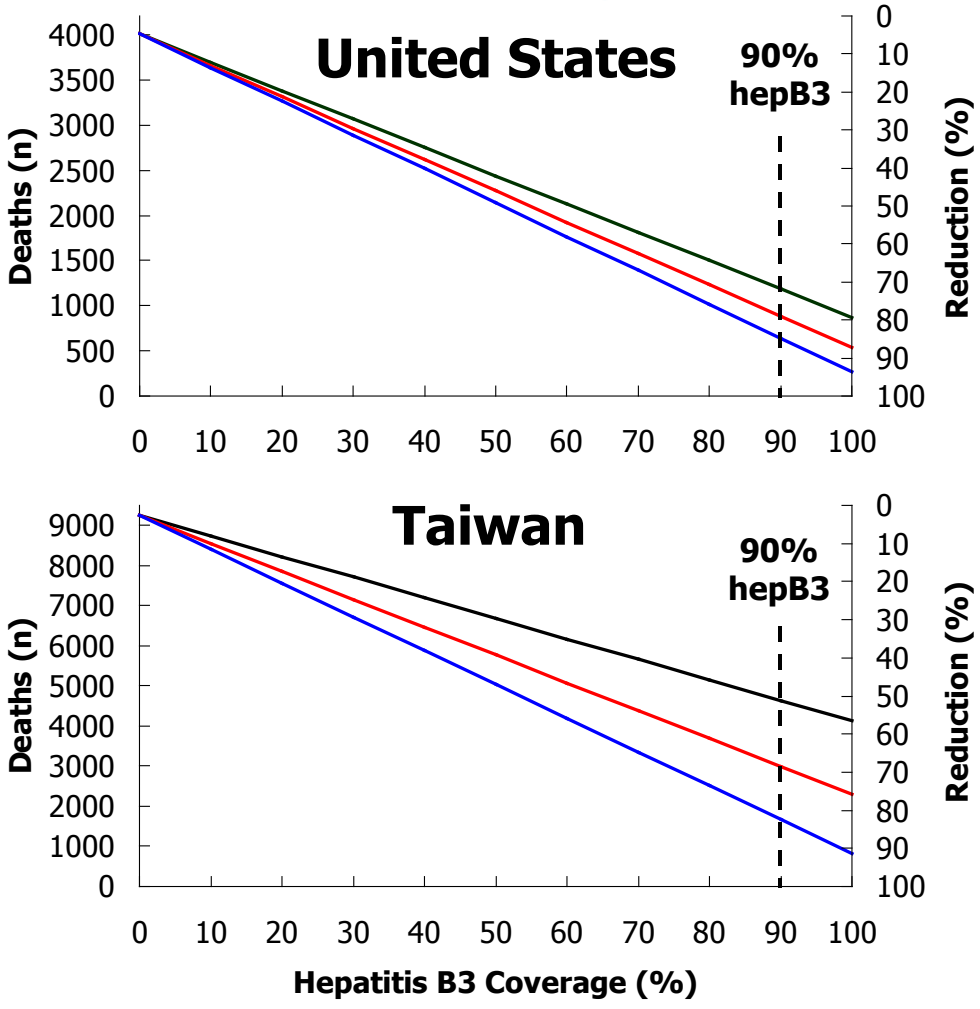
2009 WHO Position Statement I

- All regions/associated counties should develop goals for HBV control appropriate to their epidemiologic situations
- Control goals essential for regions and countries with intermediate/high endemicity of HBV infection or significant subpopulations with these levels of infection
- Serologic surveys of HBsAg serve as primary tool to measure impact of immunization and achievement of the control goals supplemented by acute disease surveillance and mortality data

2009 WHO Position Statement II

- In all regions of the world, all infants should receive the first dose of HepB as soon as possible (<24 hours) after birth. This should be followed by two or three doses to complete the series
- Immunization programmes should work with maternal and child health programmes to promote the administration of HepB birth dose (HepB_BD)
- Timely delivery of HepB birth dose (<24 hours) should be performance measure for all immunization programs

Reduction in HBV-Related Deaths with Increasing Birth Dose Coverage



0 birth dose **70%**
50% birth dose **78%**
90% birth dose **84%**

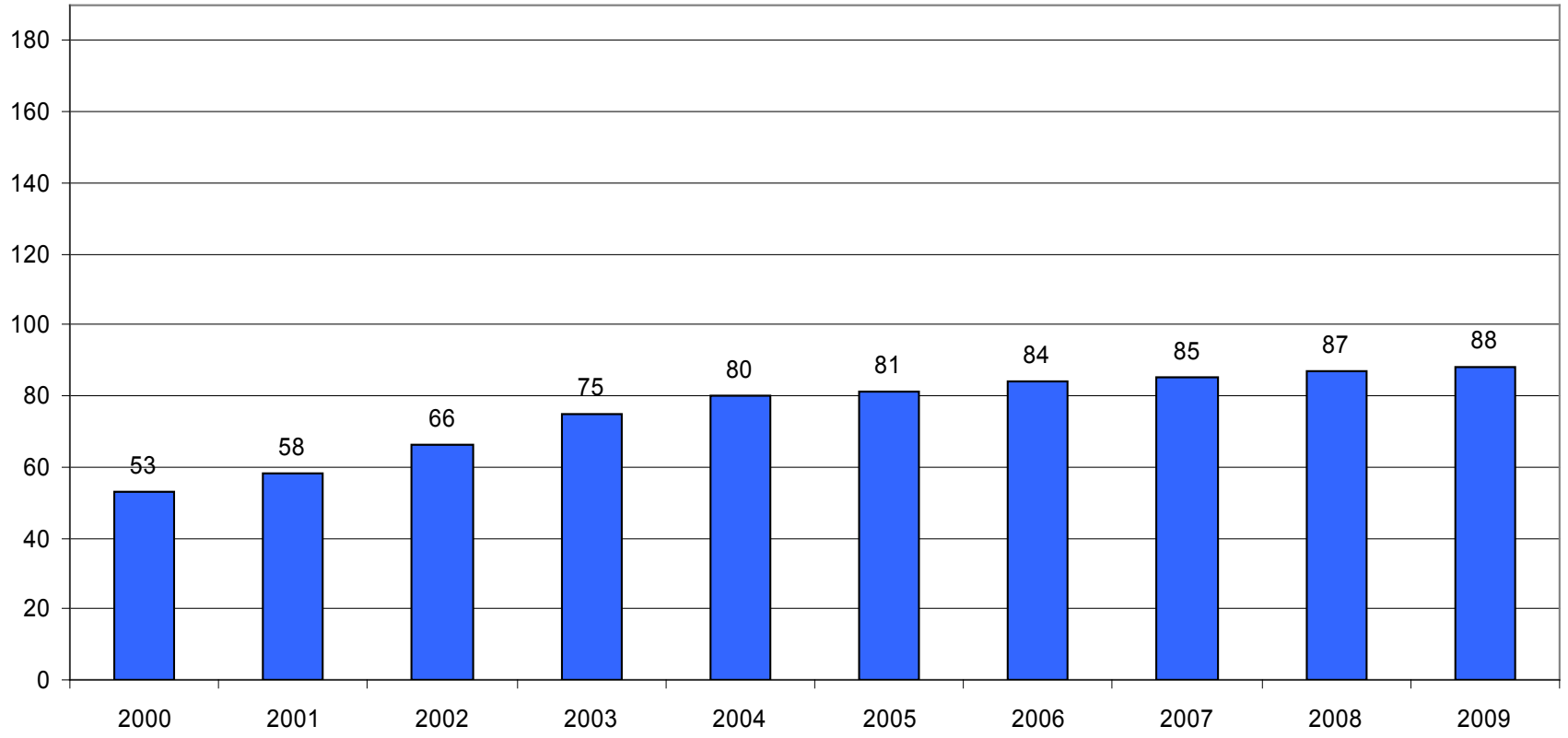
14%

0 birth dose **50%**
50% birth dose **68%**
90% birth dose **82%**

32%

[1] Administration of birth dose to 50% and 90% of the vaccinated cohort

Number of WHO Member States introduced HepB Birth Dose



Source IVB Database, 193 WHO Member States.

Date of slide: 30 November 2010

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Hepatitis B birth dose, 2009

Region	Member States	Member States with HepB in schedule*	Members States with HepB BD in schedule	Members States with HepB BD and reporting coverage	HepB_BD coverage**
African	46	45	5	4	16%
Americas	35	34	13	10	36%
Eastern Mediterranean	21	20	11	6	14%
European	53	42	28	15	19%
Southeast Asian	11	11	6	3	10%
Western Pacific	27	26	25	20	69%
Total	193	178	88	58	26%

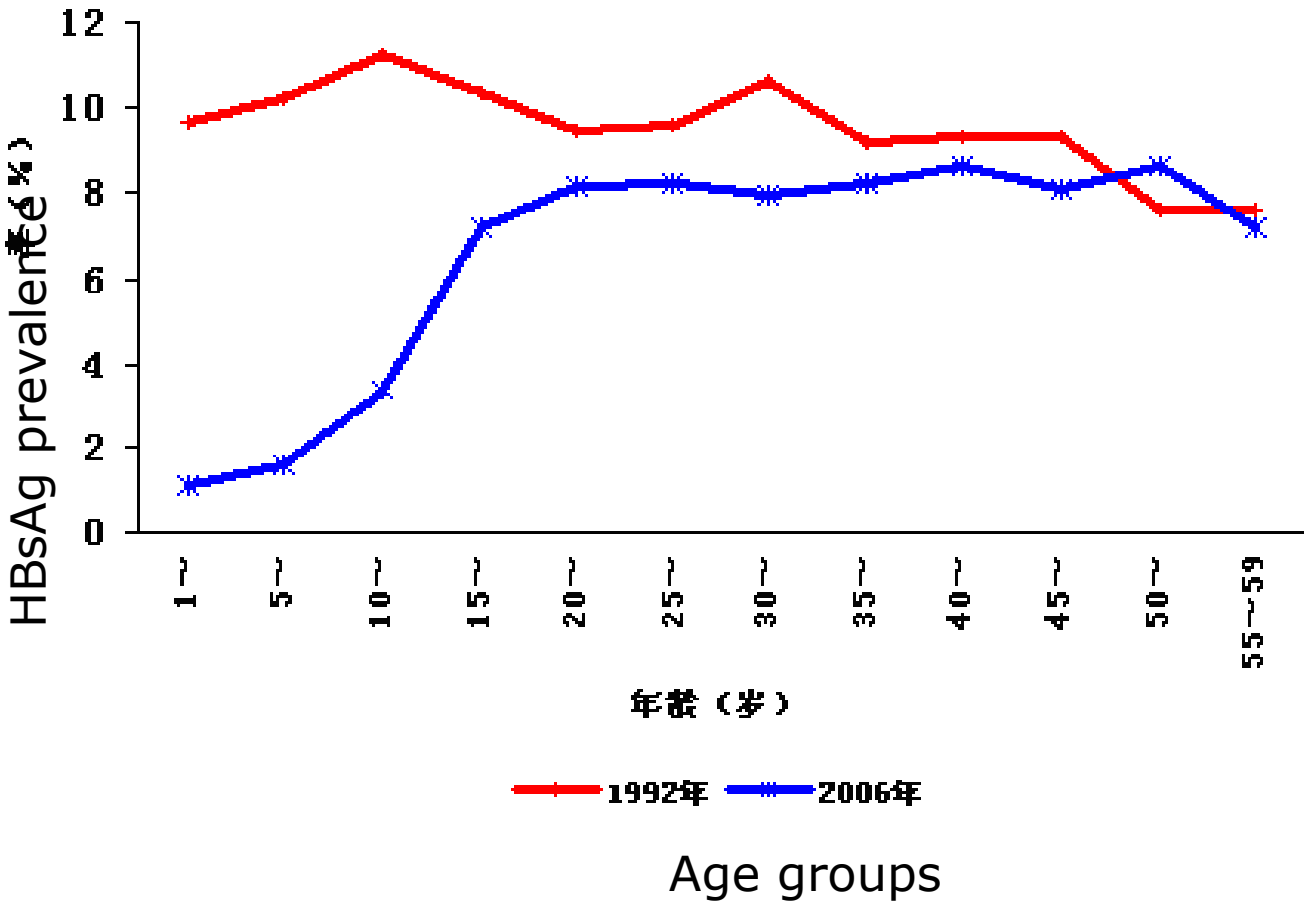
* India and Sudan introduced HepB in part of the country

** Countries not reporting HepB birth dose coverage are excluded from the calculation

New Opportunities

- PAHO Best Practice Study: Cuba
- Elimination of HBV transmission
  - Proof of concept: Cuba, United States of America, others
  - Definitions (e.g. Cuba: by 2010, majority persons born in the previous 30 years were protected)
- Document impact of HepB through HBsAg serosurveys in children, acute and chronic HBV infection surveillance and disease registry data (cirrhosis, liver cancer)

Age specific HBsAg prevalence, 1992 and 2006 serosurveys, China



•Liang XF, Bi SL, Yang WZ, Wang LD, Cui G, **Cui FQ, et al.**
•Evaluation of the Impact of Hepatitis B Vaccination among Children Born Between 1992 and 2005 in China. Journal of Infectious disease, 2009,200(1):39-47.
•Liang XF, Bi SL, Yang WZ, Wang LD, Cui G, **Cui FQ, et al.**
•Epidemiological Serosurvey of Hepatitis B in China - Declining HBV Prevalence due to Hepatitis B Vaccination. Vaccine, 2009, 27:6550–6557.

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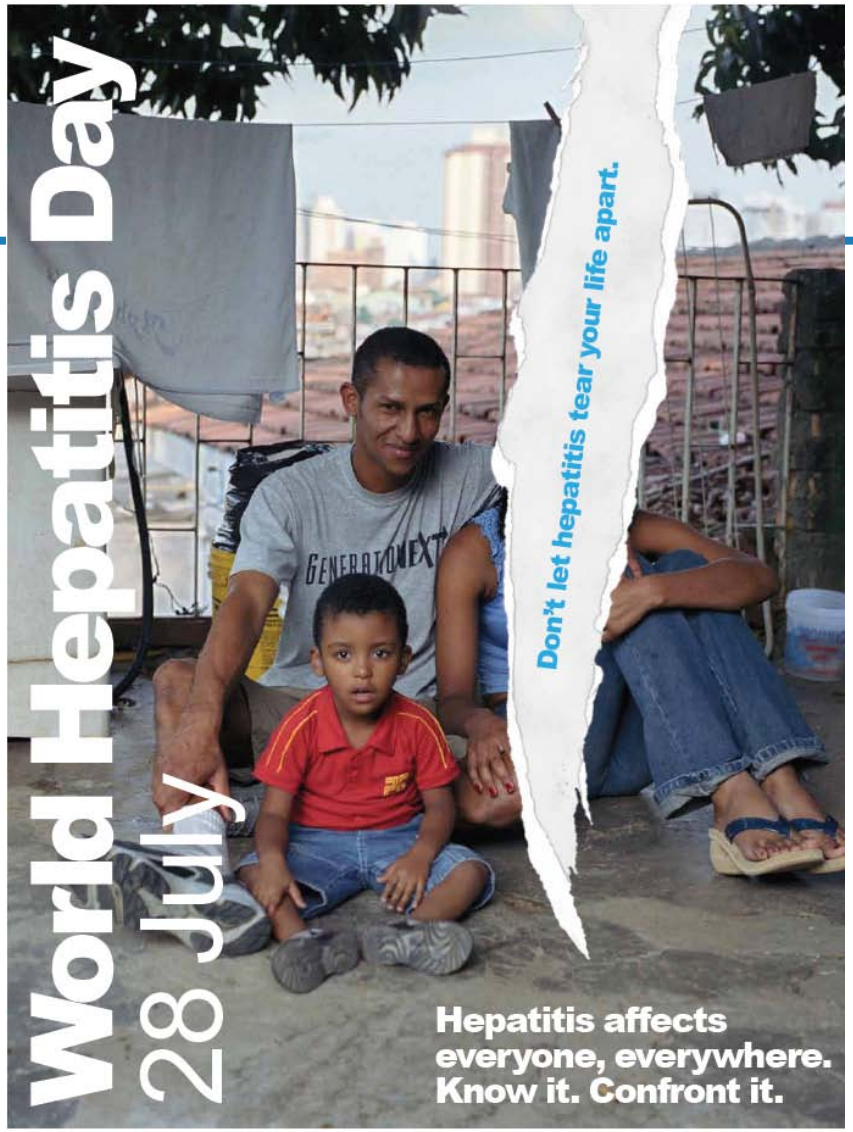
Hepatitis B Goals in Regions

- WPR : RC goal (2005) reduce HBsAg prevalence to <2% among less then 5 yr old children by 2012
- EMR : RC goal (2009) reduce prevalence of chronic HBV infection to <1% among children >5 years by 2015
- AFR : Background paper presented to 2011 TAG, HBV control goal for consideration by RC in 2012

WHA63.18: Comprehensive Hepatitis Prevention and Control

- 2010 World Health Assembly adopted resolution 63.18 as sponsored by Brazil, Columbia, and Indonesia calling for comprehensive approach to hepatitis prevention and control
- World Hepatitis Day on July 28
- Hepatitis unit in WHO HQ as of 1 May 2011
- Strategy and regional and country support



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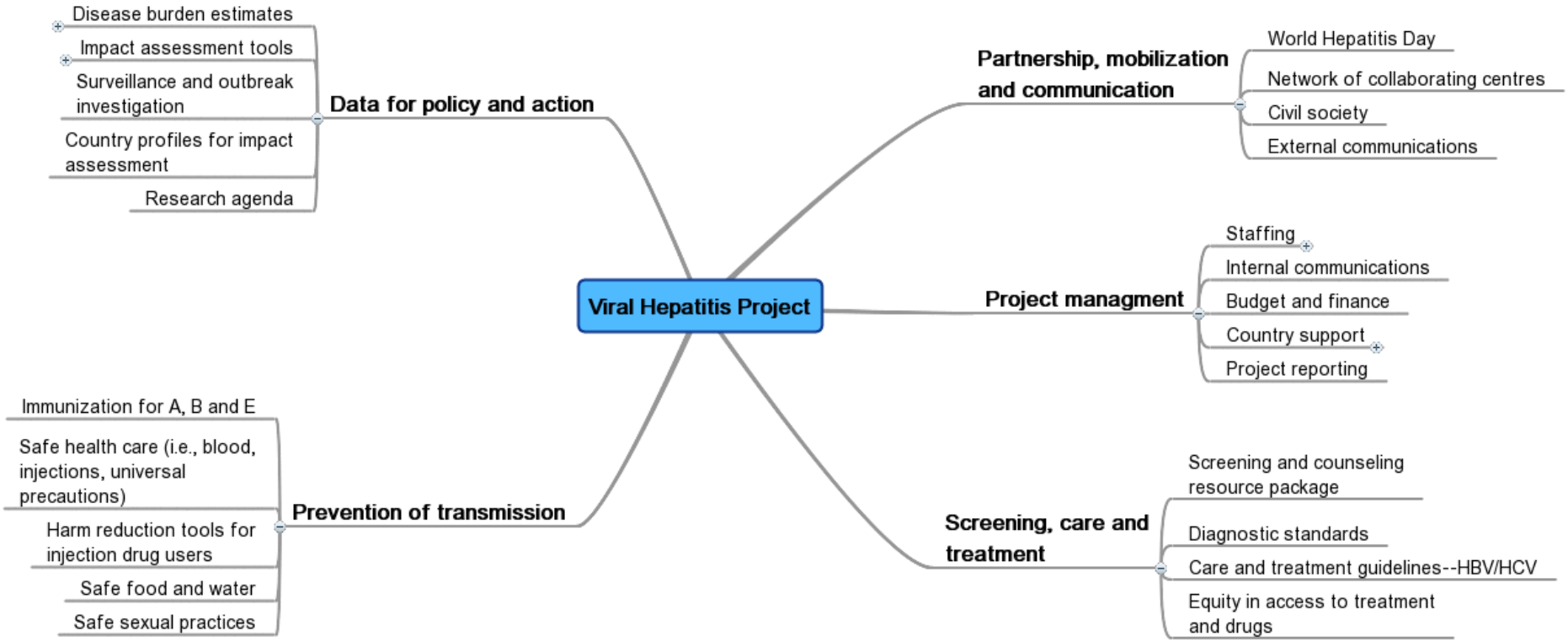
Hepatitis strategy at a glance



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Thank you

2000 WHO HepA Position

- Countries of Intermediate Endemicity:
  - large proportion of adult population is susceptible to HAV
  - hepatitis A represents a significant public health burden
  - large-scale childhood vaccination may be considered as supplement to health education and improved sanitation.
- Countries of Low Endemicity
  - vaccination indicated for individuals with increased risk
  - such as travellers to areas of intermediate/high endemicity.