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
Hepatitis A vaccine manufacturers, China*

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

**Live attenuated**

- **H2 strain**
  - Chinese Academy of Medical Sciences
  - Institute of Medical Biology
  - Zhejiang Academy of Medical Sciences

- **L-A-1 strain**
  - Changchun Institute of Biological Products
  - Changchun Changsheng Life Sciences Ltd

**Inactivated**

- **Lv-8 strain**
  - Chinese Academy of Medical Sciences
  - Institute of Medical Biology

- **TZ84 strain**
  - Sinovac Biotech Ltd
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
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
<table>
<thead>
<tr>
<th>Region</th>
<th>Population Seroprevalence</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Articles Available</td>
</tr>
<tr>
<td>1 High income Asia Pacific</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>2 Central Asia</td>
<td>Medium</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>3 East Asia</td>
<td>Low-Medium</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>4 South Asia</td>
<td>High-Medium</td>
<td>Very Low</td>
</tr>
<tr>
<td>5 Southeast Asia</td>
<td>Low-Medium</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>6 Australasia</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>7 Caribbean</td>
<td>Low-Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>8 Central Europe</td>
<td>Low-Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>9 Eastern Europe</td>
<td>Low-Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>10 Western Europe</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>11 Andean Latin America</td>
<td>High-Medium</td>
<td>Very Low</td>
</tr>
<tr>
<td>12 Central Latin America</td>
<td>High-Medium</td>
<td>Low</td>
</tr>
<tr>
<td>13 Southern Latin America</td>
<td>Medium</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>14 Tropical Latin America</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>15 North Africa / Middle East</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>16 High income North America</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>17 Oceania</td>
<td>Medium</td>
<td>Very Low</td>
</tr>
<tr>
<td>18 Central sub-Saharan Africa</td>
<td>High</td>
<td>Very Low</td>
</tr>
<tr>
<td>19 East sub-Saharan Africa</td>
<td>High</td>
<td>Very Low</td>
</tr>
<tr>
<td>20 South sub-Saharan Africa</td>
<td>High</td>
<td>Very Low</td>
</tr>
<tr>
<td>21 West sub-Saharan Africa</td>
<td>High-Medium</td>
<td>Low</td>
</tr>
</tbody>
</table>
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
## Hepatitis A outcomes by GBD region 1990 & 2005

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Infections</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1990</td>
<td>2005</td>
</tr>
<tr>
<td>Caribbean</td>
<td>579,871</td>
<td>587,437</td>
</tr>
<tr>
<td>Latin America, Andean</td>
<td>1,092,666</td>
<td>1,072,866</td>
</tr>
<tr>
<td>Latin America, Central</td>
<td>3,862,841</td>
<td>3,941,533</td>
</tr>
<tr>
<td>Latin America, Southern</td>
<td>977,302</td>
<td>891,209</td>
</tr>
<tr>
<td>Latin America, Tropical</td>
<td>3,498,523</td>
<td>3,527,103</td>
</tr>
<tr>
<td>North America, High Income</td>
<td>621,961</td>
<td>569,394</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>117,160,685</strong></td>
<td><strong>121,046,505</strong></td>
</tr>
</tbody>
</table>
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

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.
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

United States

Taiwan

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

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

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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
## Hepatitis B birth dose, 2009

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

* 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


Hepatitis B Goals in Regions

- WPR: RC goal (2005) reduce HBsAg prevalence to <2% among less than 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
World Hepatitis Day
28 July
Hepatitis affects everyone, everywhere. Know it. Confront it.

www.worldhepatitisday.info
This is hepatitis...
Hepatitis strategy at a glance

Data for policy and action

Viral Hepatitis Project

- Disease burden estimates
- Impact assessment tools
- Surveillance and outbreak investigation
- Country profiles for impact assessment
- Research agenda

Partnership, mobilization and communication

- World Hepatitis Day
  - Network of collaborating centres
  - Civil society
  - External communications

Project management

- Staffing
  - Internal communications
  - Budget and finance
  - Country support
  - Project reporting

Screening, care and treatment

- Screening and counseling resource package
- Diagnostic standards
- Care and treatment guidelines--HBV/HCV
- Equity in access to treatment and drugs

Prevention of transmission

- Immunization for A, B and E
- Safe health care (i.e., blood, injections, universal precautions)
- Harm reduction tools for injection drug users
- Safe food and water
- Safe sexual practices

World Health Organization
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.