PAHO’s Technical Advisory Group and Hepatitis B Vaccination, 1990-2011

• 1990: Hepatitis first introduced in the agenda—assessment of the feasibility of establishing HepB programs within EPI

• 1991: Given high cost of vaccine, use was not recommended in regular schedules except in select areas of the countries experiencing high endemicity and in healthcare workers

• Countries should estimate impact of hepatitis B vaccination.
PAHO’s Technical Advisory Group and Hepatitis B Vaccination

- 1997: Recommendation for all children in Amazon basin and other areas with high endemicity (threshold established as HbAg prevalence ≥7%) and for healthcare workers and high risk populations.
- 1999: Routine universal infant immunization recommended and countries asked to consider introducing tetravalent or pentavalent vaccines.
PAHO’s Technical Advisory Group and Hepatitis B Vaccination (2011)

• Countries encouraged to maintain high Hep B vaccine coverage and adhere to the 2009 WHO recommendation of using a *Hep-B birth dose* of the vaccine (2011).

• Countries urged to join the celebration of the Global Hepatitis Day to commemorate accomplishments and advocate further efforts.
Hepatitis B Vaccine Introduction in the Americas

39 out of 40 countries and territories using vaccine*
Haiti pending introduction (March 2012)
(*not including French or Dutch territories)
Introduction of Pentavalent Vaccine in the Americas

- **Year**: 1998 to 2007
- **Price**: $3.94 to $7.20
- **Countries purchasing**: 4 to 31
- **Doses**: 3.9 million to 10.5 million

- **1998**: 31 countries, 10.5 million doses (Price: $7.20)
- **2007**: 4 countries, 3.9 million doses (Price: $3.94)
Global Immunization, DTP3/Penta Coverage 1980-2010

Reported HepB3 Coverage in Children <1 Year of Age, Latin America and the Caribbean, 2010

HepB3 Coverage in Children <1 Year of Age by sub region in LAC. 2008-2010

Source: PAHO-WHO/UNICEF Joint Reporting Form
Proportion of municipalities with different DPT3/Pentavalent coverage levels in children aged <1 year, Latin America and the Caribbean, 2010*

* Haiti data en 2009.
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>
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<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
Hepatitis B Vaccination: 20 Years Later

Since 1984, when vaccination against Hepatitis B began, first with a plasma-derived vaccine and later a recombinant DNA-derived vaccine (only vaccine available)

The evidence for long-term protection of HepB by outcome is as follows:
- High quality evidence to support effectiveness of a primary series of HepB to prevent any HBV infection at 15 years post vaccination of infants.
- High quality evidence to support effectiveness of a primary series of HepB to prevent chronic HBV infection at 15 years post vaccination of infants.

Important changes have taken place in several aspects of this disease*:
- the acute and chronic infection rates,
- the mortality of fulminant Hepatitis B in infants and
- the incidence of hepatocellular carcinoma have been effectively reduced by approximately 25%.

* Vildozola H: [Vaccination against Hepatitis B: 20 years later]. Rev Gastroenterol Peru; 2007 Jan-Mar;27(1):57-66
Hepatitis B Vaccination: 20 Years Later

- It has been proven that the Hepatitis B vaccine is one of the safest vaccines available in the world, (GACVS).

- Catch-up vaccination of children should be considered for cohorts with low coverage. The need for catch-up vaccination in older age groups, including adolescents and adults, is determined by the baseline epidemiology of HBV infection in the country.

- A good immune response through the vaccination of premature infants with low birth weight has been implemented by delaying the start of the vaccination to between 7 and 30 days after birth.
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
- PAHO: Assessment of the feasibility of establishing HepB transmission elimination in the Region
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)
Estimated risk of HepA

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%
Countries Using HepA Vaccine in National Immunization Schedule, 2010

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement. © WHO 2011. All rights reserved.

Source: WHO/IVB database, 193 WHO Member States.
27 October 2011
Slide courtesy of Steve Wiersma WHO

No (182 countries or 94%)
Yes (11 countries or 6%)
Hepatitis A vaccination in the Americas

- TAG 2011 Recommendations: Countries encouraged to conduct epidemiological and cost-effectiveness studies for introduction of hepatitis A in light of existing public health priorities.

- 4 Countries using Hepatitis A vaccine in the Region:
  - Argentina, Panama, Uruguay and the United States.
  - Some countries use the vaccine in special groups.
PROVAC
Tools for Economic Analysis

Vaccine Intro Costs Tool

Burden of Disease Tools

Costs

Health Gains

Cost Effectiveness Studies HPV

Cost Effectiveness Studies Influenza

Cost Effectiveness Studies Rotavirus

Cost Effectiveness Studies Pneumococcal

Economic Analysis
ProVac’s objectives

1. Strengthen infrastructure for decision-making
2. Develop tools for economic analysis and provide training to national multidisciplinary teams
3. Collect data, conduct analysis, and gather framework of evidence
4. Advocate for evidence-based decisions
5. Effectively plan for vaccine introduction when evidence supports it
Next Steps

• Consolidation of successful experiences in the region in the control of hepatitis B
• Assessment of feasibility of target for elimination of transmission of Hepatitis B in the Americas
• Assessment and documentation of impact of Argentina’s one-dose schedule of Hepatitis A
• Cost/effectiveness studies for Hepatitis A vaccine introduction
Case study: Hepatitis A Vaccine use in Argentina

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>2 meses</td>
<td>2ª dosis</td>
<td></td>
<td></td>
<td>1ª dosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 meses</td>
<td>2ª dosis</td>
<td></td>
<td></td>
<td>2ª dosis</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>6 meses</td>
<td>3ª dosis</td>
<td></td>
<td></td>
<td>3ª dosis</td>
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</tr>
<tr>
<td>12 meses</td>
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<td></td>
<td>1ª dosis</td>
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<tr>
<td>6 años</td>
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<td>Refuerzo</td>
<td>2ª dosis</td>
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<tr>
<td>11 años</td>
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<td>Iniciar o completar esquema [3]</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>16 años</td>
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<td></td>
<td></td>
<td>Refuerzo</td>
</tr>
<tr>
<td>Cada 10 años</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Puerperio o post-aborto inmediato</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>1 dosis [4]</td>
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Introduction of 1-dose schedule in 2005
Hepatitis A Vaccine coverage
Argentina, 2005-2010

Source: MOH, Argentina

<table>
<thead>
<tr>
<th>Year</th>
<th>Cobertura</th>
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<tbody>
<tr>
<td>2005</td>
<td>79.2</td>
</tr>
<tr>
<td>2006</td>
<td>96.8</td>
</tr>
<tr>
<td>2007</td>
<td>92.2</td>
</tr>
<tr>
<td>2008</td>
<td>99.9</td>
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<tr>
<td>2009</td>
<td>100</td>
</tr>
<tr>
<td>2010</td>
<td>100</td>
</tr>
</tbody>
</table>
Hepatitis A– Cases and rates
2000-2010, Argentina
Hepatitis A cases, by age group, Argentina, 2000-2010

Fuente: SNVS, Ministerio de Salud de Nación
Liver failure due to Hepatitis A
Argentina, 1993 -2007

Fuente: SNVS, Ministerio de Salud de Nación