Hepatitis B control through immunization
WHO guidelines and strategies

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WHO Regional Office for Europe
Outline

• WHO recommendations on hepatitis B vaccination
• Implementation of hepatitis B immunization and prevention of perinatal transmission programmes in WHO European Region
• Regional hepatitis B control targets
• WHO support to member states in strengthening hepatitis B control through immunization
WHO position paper on hepatitis B vaccine, 2009

- National strategies to prevent perinatal transmission should include providing hepatitis B vaccine at birth and ensuring high coverage of the birth dose
- Delivery of hepatitis B vaccine within 24 hours of birth should be a performance indicator for all immunization programmes
- The birth dose should be followed by 2 or 3 doses to complete the primary series
SAGE reemphasized the importance of the birth dose and urged all countries to introduce the universal birth dose without further delay.

- All infants should receive their first dose of hepatitis B vaccine as soon as possible after birth, preferably within 24 hours.
- If this is not feasible, the birth dose can still be effective in preventing perinatal transmission if given within 7 days or later.
- Thus, all infants receive the birth dose during the first contact with health facilities at any time up to the time of the first primary dose.
Hepatitis B disease burden in WHO European Region

- 13 million people are chronically infected
- 56,000 deaths annually due to hepatitis B related liver cancer and cirrhosis
- Hep B epidemiology is diverse:
  - <1% HBsAg prevalence in North and Central European countries
  - >10% HBsAg prevalence in Central Asian countries
HBsAg prevalence (%) in general population before vaccination, WHO European Region

- 13 mln chronically infected people
- 56,000 deaths annually

Source: Hope V Epidemiol. Infect. 2013; Schweitzer A The Lancet, 2015; Polaris Observatory
Hepatitis B immunization policy, WHO European region

- Universal newborn vaccination (26 countries)
- Universal childhood vaccination (20 countries)
- Universal children/adolescents (3 countries)
- Risk groups vaccination (3 countries)
- Risk groups / universal new born vaccination (1 country)

Source: WHO/UNICEF JRF
Strategies to prevent perinatal transmission of hepatitis B, WHO European Region

- Universal newborn vaccination
- Screening of pregnant women and post-exposure prophylaxis of newborns
- Both strategies
### Hepatitis B 3 vaccine coverage, 2015

<table>
<thead>
<tr>
<th>Coverage (%)</th>
<th>No of countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 95</td>
<td>24</td>
</tr>
<tr>
<td>94</td>
<td>8</td>
</tr>
<tr>
<td>91 - 93</td>
<td>5</td>
</tr>
<tr>
<td>80 – 90</td>
<td>6*</td>
</tr>
<tr>
<td>&lt; 80</td>
<td>2**</td>
</tr>
</tbody>
</table>

**Total:** 45

* BiH, France, Germany, Montenegro, Romania, Slovenia
** San Marino, Ukraine

Source: WHO/UNICEF estimate
Hepatitis B birth dose coverage

<table>
<thead>
<tr>
<th>Hepatitis B birth dose coverage (%)</th>
<th>No of countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=90</td>
<td>20</td>
</tr>
<tr>
<td>&lt;90</td>
<td>2*</td>
</tr>
<tr>
<td>Total:</td>
<td>22</td>
</tr>
</tbody>
</table>

* BiH, Ukraine

Source: WHO/UNICEF estimate
Hepatitis B vaccine impact in Tajikistan; HBsAg prevalence by age groups

Age group | %
--- | ---
1-6 | 0.4%
7-8 | 2.1%
9-14 | 3.5%
≥ 15 | 6.8%

Khetsuriani Vaccine, 2015
Pregnant women screening coverage

<table>
<thead>
<tr>
<th>Coverage</th>
<th>N of countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;90%</td>
<td>13</td>
</tr>
<tr>
<td>&lt;90%</td>
<td>3</td>
</tr>
<tr>
<td>No data</td>
<td>11</td>
</tr>
</tbody>
</table>

Sources:
- Antenatal screening for HIV, hepatitis B, syphilis and rubella susceptibility in the EU/EEA; survey, ECDC, 2015
- Hepatitis B and C in the EU neighbourhood: prevalence, burden of disease and screening policies; literature review; ECDC, 2010
- Radoń-Pokracka Ginecolgia Polska, 2017
- Op de Coul BMC Infect Dis. 2011
- Giraudon Euro Surveill. 2009
Global health sector strategy on viral hepatitis 2016-2021

**Goal:** eliminate viral hepatitis as major public health threat by 2030

<table>
<thead>
<tr>
<th>Hepatitis B immunization targets</th>
<th>Baseline 2015</th>
<th>2020 Targets</th>
<th>2030 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood vaccine coverage (third dose coverage)</td>
<td>82% in infants</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Hepatitis B birth dose coverage or other approach to prevent mother-to-child transmission</td>
<td>38%</td>
<td>50%</td>
<td>90%</td>
</tr>
</tbody>
</table>
Development of regional viral hepatitis action plan: wide participatory process

- Advisory Committee
- Member States consultation
- Web consultation
Action plan for the health sector response to viral hepatitis in the WHO European Region

Hepatitis B control target: 0.5% HBsAg prevalence in vaccinated cohorts

Hepatitis B Immunization targets:

<table>
<thead>
<tr>
<th>2018 Milestone</th>
<th>2020 Target</th>
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<tbody>
<tr>
<td>90% coverage with three doses of HBV vaccine</td>
<td>95% coverage with three doses of HBV vaccine</td>
</tr>
<tr>
<td>National guidelines on risk group HAV and HBV vaccination developed and implemented</td>
<td></td>
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</tbody>
</table>
Action plan for the health sector response to viral hepatitis in the WHO European Region (Cont’d)

Prevention of perinatal Hep B transmission targets:

<table>
<thead>
<tr>
<th></th>
<th>2018 Milestone</th>
<th>2020 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal newborn vaccination</td>
<td>85% hep B birth dose coverage</td>
<td>90% hep B birth dose coverage</td>
</tr>
<tr>
<td>Screening of pregnant women and</td>
<td>85% screening coverage 90% coverage with post-</td>
<td>90% screening coverage 95% coverage with post-</td>
</tr>
<tr>
<td>post-exposure prophylaxis of</td>
<td>exposure prophylaxes</td>
<td>exposure prophylaxes</td>
</tr>
<tr>
<td>newborns</td>
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WHO support in strengthening hepatitis B control

- Support in development of national comprehensive action plans, including:
  - Hepatitis B vaccination strategies and priority actions
  - National control targets aligned with regional goal

- Regional Meeting for National Immunization Programme Mangers (October 2017)
  - Hepatitis B control session
European Vaccine Action Plan 2015-2020

- Defines regional vision and goals for immunization and control of vaccine-preventable diseases:
  - Goal 3: Hepatitis B control through immunization

- Provides priority actions to ensure equitable extension of immunization and stimulating the demand for immunization among all population groups
Monitoring of control targets achievement

• Working group of European Technical Advisory Group (ETAGE):
  – Provides advice to WHO EURO on how to support countries in strengthening hepatitis B control
  – Monitors the progress towards achievement of regional control targets
  – Defines process and criteria and confirm the achievement of the targets by member states
Conclusions

• Significant progress in implementation of hepatitis B vaccination and prevention of perinatal transmission of hepatitis B virus

• Need to strengthen hepatitis B control to achieve regional targets:
  – Introduction of universal immunization in remaining countries
  – Improvement of timeliness of birth dose
  – Evaluation of effectiveness and of screening of pregnant women and post-exposure prophylaxis of newborns at risk to ensure high coverage