Accelerated Hepatitis B Control

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In countries with intermediate (>2%) or high (>5%) hepatitis B virus (HBV) prevalence in the general population, vertical transmission is the major driver.

Without receiving a timely birth dose followed by 2 or more hepatitis B vaccines, 90% of exposed infants will develop chronic HBV infection and have a 15%-25% lifetime risk of cirrhosis or hepatocellular carcinoma.

Around 9% of mothers know their HBV status, warranting WHO’s long-standing recommendation for universal birth dose.

With over 8% estimated prevalence in 1990, the Western Pacific Region was first to establish a regional goal for hepatitis B prevention through vaccination.
Prevalence of HBV infection, by Region, 2015

WPR comprises 45% of the global HBV cases and 6.2% prevalence in the general population.

Source: Global Hepatitis Report, 2017
# Regional HepB Control Targets

<table>
<thead>
<tr>
<th>WHO Region</th>
<th>Prevalence target</th>
<th>Age group</th>
<th>By when?</th>
<th>Endorsement</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFR</td>
<td>&lt;2%</td>
<td>&lt;5 yrs</td>
<td>2020</td>
<td>Regional committee (RC) Resolution</td>
<td>Specifies to be reached in all Member States</td>
</tr>
<tr>
<td>AMR*</td>
<td>≤ 0.1%</td>
<td>5 yrs</td>
<td>2020</td>
<td>RC Resolution</td>
<td></td>
</tr>
<tr>
<td>EMR**</td>
<td>&lt; 1%</td>
<td>&lt;5 yrs</td>
<td>2015</td>
<td>RC Resolution</td>
<td></td>
</tr>
<tr>
<td>EUR</td>
<td>≤ 0.5%</td>
<td>5-10 yrs</td>
<td>2020</td>
<td>RC Resolution</td>
<td></td>
</tr>
<tr>
<td>SEAR**</td>
<td>≤ 1%</td>
<td>5 yrs</td>
<td>2020</td>
<td>Technical advisory group</td>
<td></td>
</tr>
<tr>
<td>WPR**</td>
<td>&lt;1%</td>
<td>≥5 yrs</td>
<td>2017</td>
<td>RC Resolution</td>
<td>Specifies ≥95% HepB3 and ≥95% BD coverage</td>
</tr>
</tbody>
</table>

* Same 2030 incidence target for Global Health Sector Strategy on Viral Hepatitis

** Same 2020 incidence target for Global Health Sector Strategy on Viral Hepatitis
**REGIONAL CONTROL AND TARGETS**

Regional Control Timeline

- **WPR/RC54.R3**: Hepatitis B set as an EPI pillar
- **WPR/RC56.R8**: Reduce HBsAg prevalence to <2% by 2012
- **WPR/RC64.R5**: Reduce HBsAg prevalence to <1% by 2017
- **WPR/RC66.R1**: Endorse Regional Action Plan for Viral Hepatitis 2016-2020
- **WPR/RC68.R2**: Framework for Triple Elimination of Mother-to-child Transmission of HIV, Hepatitis B and Syphilis 2018-2030

30 of 36 countries reach <2% target

<1% regional target met; 24 countries and areas with <1% prevalence
PROGRESS AND ACHIEVEMENTS 2014-2017
Hepatitis B Vaccine Coverage, 1990-2017

Source: WHO/UNICEF Joint Reporting Form (JRF) on Immunization. Regional coverage is based on weighted average among all countries, regardless of whether they reported coverage or not.
Verification Status of <1% Target by 2017

- **Verified (21)**
- **Programme improvements required (6)**
- **Serosurvey with <1% but not submitted (3)**
- **Serosurvey planned (3)**

**PROGRESS AND ACHIEVEMENTS 2014-2017**
### PROGRESS AND ACHIEVEMENTS 2014-2017

Regional Action Plan for Viral Hepatitis in the Western Pacific 2016-2020

<table>
<thead>
<tr>
<th>2017 MILESTONES</th>
<th>2020 TARGETS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STOPPING TRANSMISSION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Immunization</strong></td>
<td></td>
</tr>
<tr>
<td>Achieve prevalence of HBsAg in 5-years-old of &lt; 1%.*</td>
<td>Region: 0.93% (<em>Vaccine publication</em>)</td>
</tr>
<tr>
<td>Achieve birth-dose hepatitis B vaccination coverage of at least 95%.*</td>
<td>85% (2017 JRF)</td>
</tr>
<tr>
<td>Achieve three-dose hepatitis B vaccination coverage of at least 95%.*</td>
<td>93% (2017 JRF)</td>
</tr>
<tr>
<td>National policy of vaccinating health-care workers against hepatitis B is established in &gt; 80% of countries.</td>
<td></td>
</tr>
</tbody>
</table>

In countries that have achieved <1% in children under 5 years, further reduce mother-to-child transmission.

National policy of vaccinating health-care workers, medical/health students against hepatitis B is established in all countries.

Hepatitis B vaccinations are integrated into HIV, harm-reduction, and sexually transmitted infection (STI) services.
### PROGRESS AND ACHIEVEMENTS 2014-2017

Global Health Sector Strategy on Viral Hepatitis, 2016-2021

<table>
<thead>
<tr>
<th>Targets</th>
<th>Interventions</th>
<th>2020 targets (global)</th>
<th>2030 targets (global)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>coverage</td>
<td>1. 3- dose hepatitis B vaccine</td>
<td>90%</td>
<td>93%</td>
</tr>
<tr>
<td></td>
<td>2. HBV PMTCT (HepB-BD)</td>
<td>50%</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>3. Blood and injection safety</td>
<td>95 % screened donations</td>
<td>100 % screened donations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50% RUP devices</td>
<td>90% RUP devices</td>
</tr>
<tr>
<td>2. Harm reduction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Harm reduction</td>
<td>200 injection sets / PWID</td>
<td>300 injection sets / PWID</td>
</tr>
<tr>
<td>3. Treatment</td>
<td></td>
<td>30% diagnosed</td>
<td>90% diagnosed</td>
</tr>
<tr>
<td></td>
<td>5M and 3M treated for HBV and HCV</td>
<td></td>
<td>80% eligible treated</td>
</tr>
<tr>
<td>2. Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Incidence</td>
<td></td>
<td>-30% → 0.93%</td>
<td>-90%</td>
</tr>
<tr>
<td></td>
<td>(About 1% HBsAg in children)</td>
<td></td>
<td>(0.1% HBsAg in children)</td>
</tr>
<tr>
<td>B. Mortality</td>
<td></td>
<td>-10%</td>
<td>-65%</td>
</tr>
</tbody>
</table>

PMTCT: Prevention of mother to child transmission (universal birth dose or other approaches)
PWID: Person who injects drugs
PROGRESS AND ACHIEVEMENTS 2014-2017

Strategies for Improving Birth Dose Coverage

- **Encouraging health facility deliveries** – 89% health facility rate throughout the Region

- **Conduct national birth dose assessments** to identify main barriers to BD vaccination (completed in CAM, LAO, PHL and VNM)

- **Conduct nationally representative serosurveys** to identify high-risk groups and determine if programme has met regional or global targets

- **Increase hepatitis B education during antenatal care**
  - KIR: Healthcare workers hep B education and VHV coordination

- **Increase links with communities and outreach vaccination**
  - LAO: Compared health facilities with high & low hep B prevalence
  - VNM: birth dose training projects + behavioral assessment

- **Outside the Cold Chain (OCC) for Birth Dose** where needed and with proper oversight and national approval
  - LAO, PNG and SLB
PROGRESS AND ACHIEVEMENTS 2014-2017
HepB Birth dose coverage Versus Institutional Deliveries, Western Pacific Region

Institutional delivery data from UNICEF (updated February 2018)
Birth Dose Coverage from WHO Data, Statistics and Graphics. 4.1: Immunization coverage or administered doses, official country reported coverage estimates time series.
Strategies for Improving Birth Dose Coverage

- Encouraging health facility deliveries – 89% health facility rate throughout the Region
- Conduct national birth dose assessments to identify main barriers to BD vaccination (completed in CAM, LAO, PNG, PHL and VNM)
- Conduct nationally representative serosurveys to identify high-risk groups and determine if programme has met regional or global targets
- Increase hepatitis B education during antenatal care
  - KIR: Healthcare workers hep B education and VHV coordination
- Increase links with communities and outreach vaccination
  - LAO: Compared health facilities with high & low hep B prevalence
  - VNM: birth dose training projects + behavioral assessments
- Outside the Cold Chain (OCC) for birth dose where needed and with proper oversight and national approval
  - LAO, PNG and SLB
2016 SAGE meeting: WHO review of published and manufacturers’ data suggests that hepatitis B vaccines are relatively heat-stable.

- Package inserts for 2 monovalent hepatitis B vaccines indicate that the vaccine is stable for one month at 37 °C, and for one week at 45 °C.

WHO 2017 Position Paper:

- “In settings where administration of a birth dose is restricted by access to cold storage, OCC storage of monovalent hepatitis B vaccine … could improve birth-dose coverage.”
Regional Experience with OCC Pilots

- **China**: Timely birth dose (TBD) with Uniject increased from 7% to 77%.

- **Papua New Guinea**: Trained village health volunteers used Uniject. TBD increased from 18% to 83% in 1 district. Scale up hindered by Uniject importation cost.

- **Cambodia**: Uniject was used. Uniject administered by midwives was more cost effectiveness than 1-dose and 10-dose vials.

- **Viet Nam**: Compared nationally produced monovalent hep B vaccine used OCC and inside the cold chain which were immunogenetically equivalent.

- **Lao PDR**: Euvax-B used OCC shows 27% median increase in TBD compared to 0% median increase in comparison districts.

- **Solomon Islands**: TBD increased among facility births from 30% to 68% and among home births from 4% to 24%.
Solomon Island OCC Scale Up

- Institutional delivery rate: 85% (2016 JRF)
- Approximately 35% (@120) of health facilities have no cold chain capacity
- 2016 HepB-BD OCC pilot in Guadalcanal, Makira and Western Provinces
  - Timely Birth Dose (given within 24 hours) increased among health facility births from 30% to 68% and among home births from 4% to 24%.*

- OCC scale up plan (June-July 2018)
  - Ensure timely and reliable vaccine supply to clinics w/o cold chain.
  - **Interim** measure while Gavi supports cold chain to all clinics by 2020.

CONTRIBUTIONS TO OTHER AREAS

Ensuring every baby is free of HIV, hepatitis B and syphilis

Regional Framework for Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific, 2018-2030
Issues and Challenges 2018-2020

- 2017 target of <1% seroprevalence among 5 year olds was regional met.
  - **Divergence** among 24 countries and areas with <1% serosurveys, but at least 5 countries with serosurveys not meeting the 2013 target of <2%.

- Obtain RCM endorsement of proposed post 2017 targets
  - **All countries** reduce HBsAg prevalence to <1% among children at least 5 years of age by 2025.
  - Countries that have reduced HBsAg prevalence to <1% among children at least 5 years of age should **further reduce HBsAg seroprevalence to <0.5% by 2025**.

- **Improve birth dose and HepB3 coverage** by increasing health facility births; national birth dose assessments; addressing vaccine hesitancy; improving cold chain capacity and OCC work in countries with poor cold chain or a high proportion of home deliveries.

- Further work towards **elimination of hepatitis B** as a public health threat
  - Implement the Triple EMTCT Framework
  - Incremental cost effectiveness for countries with high and sustained vaccine programmes
Issues and Challenges

Reasons for Low HepB-BD coverage

- BD not included in country immunization schedule
  - Most (35 of 37) WPR countries and areas offer universal birth dose
  - Why not include? Cost/logistic, lack of evidence of perinatal transmission, difficulty reaching high coverage

- Low coverage among health facilities
  - Lack of mandate to handle vaccines
  - Referrals to EPI clinic with limited vaccination hours on weekends and nights

- Low coverage among home births
  - Logistics, reliance upon family to bring child to a health facility
  - Home outreach may not be funded or encouraged
Accelerate support to countries in determining which strategies to achieve birth dose coverage goals and its universal administration to newborns in every country or area.

Advocate Member States to adopt the proposed 2018-2025 regional targets that

- All countries reduce HBsAg prevalence to <1% in 5-year-old children by 2025.
- Countries that have reduced HBsAg prevalence to <1% in 5-year-old children further reduce HBsAg seroprevalence to <0.5% by 2025.

Assist Member States to gain experience with new survey and cost effectiveness methodologies to document and further EMTCT of HBV efforts.

Support Member States in developing and implementing national strategies for EMTCT of HepB.

Strengthen partnership with other programmes at both regional and national levels to support efforts for implementation of the *Framework for Triple Elimination of Mother-to-child Transmission of HIV, HBV and Syphilis.*
<table>
<thead>
<tr>
<th>Infants vaccination coverage</th>
<th>Birth-dose vaccination coverage</th>
<th>Coverage of peripartum antivirals for HBeAg-positive mothers*</th>
<th>Access to treatment†</th>
<th>Cure expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>No historical intervention</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Status quo</td>
<td>Continues at current levels‡</td>
<td>Continues at current levels‡</td>
<td>No coverage</td>
<td>No</td>
</tr>
<tr>
<td>Infant vaccination</td>
<td>90%¶</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant vaccination + birth-dose vaccination</td>
<td>90%¶</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant vaccination + PPT</td>
<td>90%¶</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant vaccination + PPT + treatment</td>
<td>90%¶</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant vaccination + birth-dose vaccination + treatment + cure</td>
<td>90%¶</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Assumptions used to represent the efficacy of each intervention are outlined in the appendix (p 5). HBeAg = hepatitis B e antigen. PPT = peripartum antiviral therapy (given to HBeAg-positive mothers). *Peripartum antivirals are given to HBeAg-positive mothers only. Hepatitis B immunoglobulin not implicitly modelled because data were not available, but continues at current levels. †Includes case finding and treatment. ‡WHO data on vaccination coverage up to 2013. §Global Policy report on viral hepatitis and expert opinion. ¶If the regional coverage is already above the target level, it remains at current high level. || Linear scale-up 2015–20. **Linear scale-up 2015–25. ††80% incorporates a strategy of 90% case finding, 95% linked to care, 95% durable viral suppression.

Table: Intervention strategies modelled, coverage levels, and scale-up times

Thank you!