Progress and barriers towards HBV and HCV elimination targets globally and in the Americas

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5th International HIV/Viral Hepatitis Co-Infection Meeting:
Viral hepatitis elimination in Latin America and globally: How close are we?
July 2019, Mexico City
Outline

• 2015 WHO GHSS for Viral Hepatitis; global goals and targets
• WHO plans, tools and guidelines
• Baseline and progress to date
• HBV and HCV in Latin America and the Caribbean
• Investment cases and the elimination agenda
• Hepatitis B elimination through MCH platform
• Challenges and barriers
WHO Global Health Sector Strategy
Elimination of viral hepatitis as a major public health threat by 2030

Impact targets

<table>
<thead>
<tr>
<th>Reduction in new infections by 90%</th>
<th>Reduction in deaths by 65%</th>
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<tbody>
<tr>
<td>NEW INFECTIONS</td>
<td>DEATHS</td>
</tr>
<tr>
<td>10 million</td>
<td>2 million</td>
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<tr>
<td>9 million</td>
<td>1.8 million</td>
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<tr>
<td>8 million</td>
<td>1.6 million</td>
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<tr>
<td>7 million</td>
<td>1.2 million</td>
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<tr>
<td>6 million</td>
<td>0.8 million</td>
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<tr>
<td>5 million</td>
<td>0.6 million</td>
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<tr>
<td>4 million</td>
<td>0.4 million</td>
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<tr>
<td>3 million</td>
<td>0.2 million</td>
</tr>
<tr>
<td>2 million</td>
<td>0 million</td>
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</tbody>
</table>

Programmatic targets

| 90% of people infected are diagnosed | 80% of people diagnosed are treated | 90% coverage of vaccination BD and B3 doses (PAHO: 95%) | 100% of blood products are safe | 90% of injections in health facilities are safe |
WHO guidelines and tools to support national responses

2015
✓ GHSS and Regional Action Plans
✓ HBV Guidelines

2016
✓ Revised HCV Guidelines
✓ National planning manual

2017
✓ Baseline estimates: Global Hepatitis Report
✓ PAHO Region baseline estimates report
✓ HBV/HCV testing Guidelines
✓ Injection safety campaign

2018
✓ Global hepatitis reporting system
✓ HCV treatment Guidelines: Treat All
✓ Cost effectiveness calculators (HBV/HCV)
✓ PAHO: National investment cases (Colombia, Chile Brazil)

2019
✓ Consolidated strategic information guidelines (Feb 2019)
◆ HBV PMTCT recommendations on antiviral medicine use in pregnancy (2nd Sem)
Baseline status of Hepatitis B, 2015

Prevalence:
257 million people living with HBV
68% in Africa/Western Pacific

Incidence:
Chronic HBV infection in children under 5
reduced from 4.7% (pre-vaccination) to 1.3%
- 2030 target: 0.1%

Mortality:
~880,000 deaths each year
Prevalence:  
71 million viraemic infections, all regions

Incidence:  
1.75 million new infections / year  
(Unsafe health care and injection drug use)

Mortality:  
~400,000 deaths each year
Hepatitis mortality is increasing

Sources – WHO Global Health Estimates

96% hepatitis deaths from HBV and HCV (cirrhosis and hepatocellular carcinoma)

1.34 million deaths in 2015
Viral hepatitis deaths, by virus, 2015
Core interventions with enough coverage would lead to elimination

Major gaps in HBV birth dose, harm reduction, testing and treatment
As of February 2019, 124 countries had national hepatitis plans (published + draft).

**National Response, 2017**
- 135 responding countries
- 84 reporting viral hepatitis national plan
- 62 reporting civil society engagement

**Civil Society Engagement and National Response, 2017**

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Source: Global Reporting System on Hepatitis

Smith et al., JHEP Reports. August 2019
Coverage of third dose of hepatitis B vaccine, 2017

84% global coverage
Coverage of hepatitis B vaccine birth dose, 2017

From 38% in 2015 to 43% coverage in 2017

10% in AFR
New data from Demographic and Health Surveys:
3.9% Unsafe health care injections worldwide in 2010-2017
Harm reduction, low baseline, little progress

Of 179 countries with injection drug use:

- 93 (52%) with needle and syringe distribution
- 87 (49%) with opioid substitution therapy

Some policy uptake, but…

low coverage of interventions

33 syringes/needle sets provided per PWID in 2017

GHSS Target: 300 syringes/needle sets provided per PWIDs per year in 2030
Cascade of Care for HCV infection and DAA expansion, 2017

Number of people treated with DAA, globally:

- 2014: < 200,000
- 2015: 1.1 million
- 2016: 1.7 million
- 2017: 2.1 million
- Total: ~5 million

Most treatment given in about 10 champions countries

Source: Center for Disease Analysis/Polaris
Cascade of care for HBV infection, 2016

Number of people receiving antiviral treatment, globally:
- 2015: 1.7 million
- 2016: 4.5 million

Measurement of progress on the HBV treatment target is currently limited by the absence of data on the proportion of people who are eligible
- On going study to better estimate proportion of eligible

Source: WHO adapted from Center for Disease Analysis/Polaris
Optimize the procurement of generic Direct Acting Antivirals (DAAs) to cure HCV infection

62% of people with HCV live in countries with access to generic DAAs for as low as US$90 (in green)

![Voluntary licensing territories for key direct-acting antivirals in low- and middle-income countries, 2017](image)

- In reality, the price of a 3-month course of generic DAA varies greatly by location

![Graph showing the price per week of treatment](image)

PAHO Strategic Fund:
- Sof+Velp (originator – “Access”): USD 900
- Sof+Dac (generic – no patents): USD 129

Source: amfAR August 2018, MSF and MoH Malaysia
Chronic Hepatitis C in the Americas, 2016

7.2 million people living with HCV in the Americas

88,000 deaths yearly are estimated to be due to HCV in the Americas (2015)

In Latin America and the Caribbean:

4 million people living with HCV

65,000 new chronic HCV infections each year

HCV cascade of care: Latin American & the Caribbean, 2016

Estimated Population with chronic HCV: 4m
Diagnosed: 566,000 (14%)
Treated: 39,000 (~1%)

Source: Polaris Observatory (http://www.polarisobservatory.com/)
• **3.9 (2.7-6.4) million people chronically infected**
  – 0.4% prevalence (0.3-0.6%) among general population

• **10,000 new chronic infections in 2016**
  – 56% perinatal transmission
  – Prevalence among 5 years old: 0.04%-0.1%

• **31,000 deaths** yearly are estimated to be due to HBV in the Americas (2015)

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**Estimated Population with chronic HBV**

<table>
<thead>
<tr>
<th>Source: Polaris Observatory (<a href="http://www.polarisobservatory.com/">http://www.polarisobservatory.com/</a>)</th>
<th>HBsAg+ Prevalence (%)</th>
<th>Total number of infected</th>
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<tbody>
<tr>
<td>~3%</td>
<td>0.00</td>
<td>1,000,000</td>
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<tr>
<td>~23%</td>
<td>0.50</td>
<td>800,000</td>
</tr>
<tr>
<td>~32%</td>
<td>1.00</td>
<td>600,000</td>
</tr>
<tr>
<td>~75%</td>
<td>1.50</td>
<td>400,000</td>
</tr>
<tr>
<td>~92%</td>
<td>2.00</td>
<td>200,000</td>
</tr>
<tr>
<td>100%</td>
<td>2.50</td>
<td>0.00</td>
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**HBV cascade of care: The Americas, 2016**

<table>
<thead>
<tr>
<th>Estimated Population with chronic HBV</th>
<th>Diagnosed</th>
<th>On Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9m</td>
<td>923,000</td>
<td>136,000</td>
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</table>
National Policies and Strategies
for prevention and control of viral hepatitis, 2017

Source: Hepatitis B and C in the Spotlight, PAHO 2016, 2017
Public health and economic impact of hepatitis elimination

The investment case for hepatitis C in Brazil and the Elimination Plan, 2017

Hepatitis C Burden (2016): Total estimated chronically infected: 632,000 in 2016

Two scenarios: Baseline x WHO Elimination Targets:

- Treatment and diagnosis scale up increase **direct costs**, reducing below the base scenario by **2028**
- **Indirect costs will reduce** as a result of earlier and expanded diagnosis and treatment
- After **2028**, the elimination scenario will cost **less than the base scenario** and after 2030 will require less than 0.2% of the total public health budget (US$53 billion in 2017)

![Fig. 3 – Direct costs in the NSP scenario and the base case scenarios.](image1)

![Fig. 4 – Indirect costs in the NSP scenario and the base case scenarios.](image2)

![Fig. 6 – Comparing public health budget utilization in the NSP scenario with the base case scenario.](image3)
Hepatitis B elimination through maternal and child health platform

• Expanding EMTCT of HIV and syphilis
  – **Strong political** commitment
  – **Public health** approach
  – EMTCT strengthening **MCH**

• **Regional Frameworks:** PAHO (2017) and WPRO (2018)

• **EMTCT** as a “milestone” for the elimination of HBV as a public health problem by 2030, as proposed to WHA in 2016

• Building on established hepatitis B **vaccination programme**

• Additional interventions: **antenatal screening**, addressing long term health of HBV-positive mother, potential use of **maternal antiviral** and **hepatitis B immunoglobulin** for exposed infants
0.8% of children under 5 worldwide had chronic HBV infection in 2017. All regions except for Africa reached the 2020 1% target.

Source: London School of Tropical Medicine & Hygiene for WHO [systematic review by Cochrane centre, with modelling inferences], schematic map of the WHO regions.
Hepatitis B Birth dose (HepB-BD) vaccination strategies in the national immunization programme
Challenges and barriers

- Expand timely **birth doses** of the hepatitis B vaccine, and adopt **additional interventions** towards EMTCT
- Expand **Harm-reduction** services and access to treatment for people who inject drugs
- **Injection safety**: Recent HIV outbreaks as reminders of fragility and vulnerability of many systems
- Need to massively expand **access to diagnosis, and treatment** – simplify algorithms
- Include hepatitis data in country **health information systems**: better understanding of the **national burden** and regular **monitoring/review** of national **targets and progress**
- **Drugs prices** have declined over the past few years, but cost is still a huge barrier, particularly among mid-income countries
- Chronic **lack of funding** for hepatitis, and the need to mobilize domestic investment
- Need for robust **civil society advocacy** at country level
- **Innovation**: functional cure for hepatitis B; POC tests affordability and quality; HCV vaccine
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Thank you

ELIMINATE HEPATITIS

ELIMINAR LA HEPATITIS