HepB-BD Pilot Vaccination in Ethiopia

Mulat N. Alemu
Consultant, RI Strengthening

MoH-E/McKing CC-BMGF

Tuesday, November 23rd 2021
Presentation Outline

- Background

- Engaging health care worker in hepatitis B vaccination
  - Training about the vaccine,
  - Need for timely administration
  - Task shifting and record keeping

- Update on the pilot vaccination program
Background

Country

- **Population:** 102,850,793 (PPMED)
  - 3.36% Live births, 3.16% Surviving infants, 4.59% <5 years, <15 Years, 44.98%, etc.

- **Admin structure:** 12 Regions, 86+ Zones, 1114+ woredas

- **Health care system structure:**
  - Tertiary/Specialized, Secondary/General & Primary/PHCU Levels
    - 344+ Hospitals, 3,736+ HCs, 18,184+ HPs

- **Rural:** 80%, with infrastructure challenges

Immunization

- Expanded Program on Immunization started in 1980 with six antigens
- Today, it offers **12 vaccines free of charge**

<table>
<thead>
<tr>
<th>Vaccine Introduction History (1)</th>
<th>Vaccine Introduction History (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Vaccine</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>1980</td>
<td>BCG, OPV(1,2,3), DPT, MCV1</td>
</tr>
<tr>
<td>2007</td>
<td>HepB &amp; Hib combined in DPT</td>
</tr>
<tr>
<td>2011</td>
<td>PCV10</td>
</tr>
<tr>
<td>2013</td>
<td>Rota</td>
</tr>
<tr>
<td>2015</td>
<td>IPV</td>
</tr>
<tr>
<td>2016</td>
<td>Switch: tOPV to bOPV (1,3)</td>
</tr>
<tr>
<td>2018</td>
<td>HPV</td>
</tr>
</tbody>
</table>
Background...

Burden of Hepatitis B infection in Ethiopia

- Estimated prevalence of HBsAg in the **general** population (2016)
  - 7.4% (95%CI: 6.5–8.4%)

- Estimated prevalence of HBsAg among **pregnant** women (2018)
  - 4.7% (95%CI: 4.0–5.4%)

- Estimated prevalence of HBsAg among **children <5** years (2019)
  - 4.4% [95% CI: 2.8–6.6%] ....Hawassa City

**Note:** Ethiopia is considered to have **intermediate to high** HBV prevalence.

Fig: Regional variation of weighted HBsAg prevalence stratified by rural-urban setting. **National prev. was 9.4%**
Activities done prior to the start of HepB-BD piloting in Ethiopia

- In 2016-2020 cMYP: “Introduction of HepB-BD by 2018”
- On August 17, 2017: E-NITAG initiated discussion on national HepB-BD (following a request from EPI-MoH)
- Research Advisory Counsel (RAC) generated an evidence on economic evaluation (incremental cost-effectiveness ratio – ICER - USD 110 per DALY averted) of introduction of HepB-BD to the immunization program in Ethiopia. Published (https://resource-allocation.biomedcentral.com)
- EPI-MoH & stakeholders developed a policy brief & concept note on HepB-BD piloting in Ethiopia. After then, detail proposal developed & shared, and budget mobilization done.
- Piloting: Pilot sites selected, the sites informed, preparations including capacity building and social mobilization activities done. Now the pilot implementation is underway.
Objectives of pilot introduction

- To identify & address programmatic & logistical challenges/barriers during HepB-BD vaccination
- To test the strategy and draw lessons learnt & document best practices to inform full scale nationwide universal HepB-BD introduction
- To determine HepB-BD vaccination acceptance (HCWs, caretakers...)
- To estimate HepB-BD vaccination coverage (both timely & late coverages)
- To determine impact/effectiveness of HepB-BD in averting hepatitis infection rate.
- To determine cost & cost-effectiveness of the pilot introduction and get substantial insight for the full scale nationwide universal HepB-BD introduction
Methods/designs of the pilot introduction

**Design** - evaluate the following approaches:

- Redesign a new **vaccine delivery point** to provide vaccines given at birth in the delivery/PNC units
- **Task sharing/shifting** (management involvement, awareness creation, job aid, scope of work)
- **Vaccine Logistics** (vaccines, syringes, safety box, registration book, refrigerator, vaccine card, etc.)
- **Training** (staffs from delivery, PNC/NICU, Vaccination rooms)
- **Linkage** and continuity of vaccination services
- Improve **integration and coordination** among maternal, child and vaccination services/programs

**Setting**

- Urban, Agrarian and pastoralist
- Hospital, Health Center, Health Post & outreach/mobile sites

**Others considerations:** Pregnancy/birth notification, increasing institutional delivery and reaching home births to attain and sustain high HepB-BD vaccination coverage.
Engaging HCWs in HepB-BD vaccination

- **Recording/reporting tools**
  - Register, tally sheet and facility reporting form are now available at each HepB-BD vaccination service delivery points (vaccination, delivery, PNC/NICU)
  - Reporting form is also now available at PHCU, Woreda, Zone and Region levels

- **Training Materials/slides** prepared & provided the training in all sites
  - Introduction & burden of HBV, vaccination schedule & administration, vaccine attributes & storage, AEFI, Vaccination strategies, communication, and M & E
  - Public Health structure: EPI & MH staff members trained all level trained
  - Health Care structure: Vaccinators from MH and EPI Staff members working at Health posts, Health Centers & Hospitals trained
  - Orientation provided for community mobilizers
  - Need of timely vaccination (within 24 hours of birth vaccination) was highlighted during the training and under strong follow up & monitoring during the piloting.

- **IEC materials** [fact sheet, brochure & poster] prepared & provided to all pilot sites
### Brief update on the pilot vaccination program

<table>
<thead>
<tr>
<th>Key data set/indicators</th>
<th>Addis Ababa</th>
<th>Amhara</th>
<th>Afar</th>
<th>Tigray</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No (#)</td>
<td>No (#)</td>
<td>No (#)</td>
<td>No (#)</td>
<td>No (#)</td>
</tr>
<tr>
<td>Total annual LB</td>
<td>4,500</td>
<td>6,870</td>
<td>3,209</td>
<td>3,697</td>
<td>18,276</td>
</tr>
<tr>
<td>Cumulative Vaccinated (TV)</td>
<td>4,158</td>
<td>4,085</td>
<td>619</td>
<td>80</td>
<td>8,942</td>
</tr>
<tr>
<td></td>
<td>92%</td>
<td>59.5%</td>
<td>19.3%</td>
<td>2.2%</td>
<td>48.9%</td>
</tr>
<tr>
<td>Total Timely vaccinated from TV</td>
<td>4,061</td>
<td>3,952</td>
<td>588</td>
<td>40</td>
<td>8,641</td>
</tr>
<tr>
<td></td>
<td>98%</td>
<td>96.7%</td>
<td>95%</td>
<td>50.0%</td>
<td>96.6%</td>
</tr>
<tr>
<td>Total HF delivery (THFD)</td>
<td>4,642</td>
<td>3,915</td>
<td>432</td>
<td>49</td>
<td>9,038</td>
</tr>
<tr>
<td>Total Vaccinated from THFD</td>
<td>4,158</td>
<td>3,908</td>
<td>432</td>
<td>38</td>
<td>8,536</td>
</tr>
<tr>
<td></td>
<td>90%</td>
<td>99.8%</td>
<td>100%</td>
<td>77.6%</td>
<td>94.4%</td>
</tr>
<tr>
<td>Total timely vaccinated from THFD</td>
<td>4,061</td>
<td>3,898</td>
<td>432</td>
<td>38</td>
<td>8,429</td>
</tr>
<tr>
<td></td>
<td>98%</td>
<td>99.7%</td>
<td>100%</td>
<td>100%</td>
<td>98.7%</td>
</tr>
<tr>
<td>Total Home Delivery (THD)</td>
<td>0</td>
<td>0</td>
<td>177</td>
<td>126</td>
<td>490</td>
</tr>
<tr>
<td>Total Vaccinated from THD</td>
<td>0</td>
<td>177</td>
<td>187</td>
<td>42</td>
<td>406</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>33.3%</td>
<td>82.9%</td>
</tr>
<tr>
<td>Total Timely vaccinated from THD</td>
<td>0</td>
<td>54</td>
<td>156</td>
<td>2</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>30.5%</td>
<td>83.4%</td>
<td>4.8%</td>
<td>52.2%</td>
<td></td>
</tr>
</tbody>
</table>

![HepB-BD coverage by time at National level as of Sept 2021](image.png)
CHALLENGES

- **Place of birth**: Based on the Mini-EDHS 2019 finding the rate of home delivery in Ethiopia was 50% which makes a bit tough to provide timely (within 24 hours of birth) HepB-BD vaccination services.

- **Socio-cultural factors**: Home deliveries (Practice of stay at home for 45 days)

- **Additional Cost**: Equipping, training staffs at delivery/PNC/NICU, etc.

- **Time factor**: Providing the service within 24 hours is an ideal recommendation to adhere.

- **Security issues (Tigray and Afar pilot sites)**

- **New strategy implementation**: Establishing/strengthening new vaccination service delivery points & providing the service within 24 hours of birth to all newborns regardless of place of birth is not an easy task.
Thank You