HepB-BD Implementation in Botswana

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Outline

• History of the program
• Summary data on HBV prevalence and prevention
• Botswana's best practices leading to high HepB BD coverage
• Personnel challenges in implementing HepB-BD
• How best to engage healthcare workers to support the HepB birth dose program
• Conclusions and recommendations
Botswana’s HepB Vaccination Program

1979: • EPI program established

1992: • Piloted childhood HepB vaccination

2000: • Universal HepB childhood vaccination adopted

• HepB-BD introduced before NITAG was established

• 2019 coverage:
  • HepB3 78.8%
  • Timely HepB-BD 73.8%
## Surveys/Studies Reporting HBsAg+ Prevalence Estimates in Botswana

<table>
<thead>
<tr>
<th>Author, publication year</th>
<th>Study period</th>
<th>Population</th>
<th>HBsAg+ prevalence estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathews et al, 2015</td>
<td>2004-2013</td>
<td>HIV infected <em>women</em> attending ANC clinic</td>
<td>3.80%</td>
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<tr>
<td>Anderson et al, 2016</td>
<td></td>
<td>HIV infected adults initiating HAART</td>
<td>9.30%</td>
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<tr>
<td>Mbangiwa et al, 2018</td>
<td>2010-2012</td>
<td>HIV positive and HIV negative <em>pregnant women</em></td>
<td>2.1% (3.1 HIV+ and 1.1% HIV-)</td>
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<tr>
<td>Choga et al, 2019</td>
<td>2014-2015</td>
<td>Blood donors</td>
<td>1.02%</td>
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<tr>
<td>Phinius et al, 2020</td>
<td>2005-2009</td>
<td>HIV infected treatment naïve patients</td>
<td>4.80%</td>
</tr>
<tr>
<td>Baruti et al, 2020</td>
<td>2011-2013</td>
<td>HIV exposed but uninfected <em>children</em> and their HIV positive <em>mothers</em></td>
<td>Children: 0% mothers: 1.75%</td>
</tr>
<tr>
<td>Mahupe et al, 2021</td>
<td></td>
<td>Patients with end stage renal disease on hemodialysis</td>
<td>2.98%</td>
</tr>
</tbody>
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Botswana’s Trends in HBV Prevalence, 1990-2019

HBV Prevalence

Year

HepB vaccine piloting started

Universal childhood HepB vaccine including birth dose rolled out

All Ages

<20 yrs

Vaccine Protectiveness in Infants in Botswana

Decreased HBV vaccine protectiveness among HIV positive infants versus HIV negative infants in Botswana

Figure 1: Median anti-HBs titres among HIV negative and HIV positive infants who completed HBV vaccination.

Figure 2: Proportion of infants with/without protective anti-HBs titres
Personnel Challenges in Implementing Timely HepB-BD

• Shortage of staff (multiple responsibilities of midwives)
• Registers (digital and manual) sometimes not updated in a timely manner
• The registers do not indicate if vaccination was done in 24 hours
• Assign vaccination to MCH staff to vaccinate at maternity wards (in some districts); therefore timeliness is a challenge
• Training of midwives is done programme by programme; not yet integrated in training approaches for MCH, PMTCT and EPI
Engaging HCWs to Support Timely HepB-BD Implementation

• Tools need to be revised to accommodate the monitoring of timely birth-dose (separate column to record date of HepB-BD with tally sheet to specify timeliness and monthly districts graphs to monitor timely HepB-BD

• HCWs need the knowledge and understanding of why the birth-dose needs to be given in 24 hours

• Need more information and knowledge on vaccinating premature infants <2kg and understanding vaccine contraindications for midwives and all HCWs to confidently give vaccines (pre-services training very critical and in-service sensitization)
Best Practices Leading to High Timely HepB-BD Coverage

• Availability and procurement of vaccines-High level of commitment of government (100% sponsored and supported by government)
• Cold chain well maintained and provided for in government facilities
• Maternity register is integrated to include birth-dose vaccines such BCG and hepatitis
• Letters and awareness have been created with management and healthcare workers on the importance of timely birth-dose vaccination through sensitiation period and on-going (2015/6, 2020)
• Nurse midwives empowered to give vaccinations without authorization
• Strong emphasis on facility births (>95% facility birth)
Conclusions and Recommendations

• HepB vaccination starting with a timely birth dose is effective in preventing HBV infection
• Government support important for program sustainability
• Engaging MCH in vaccination process ensures increased coverage and timely vaccination
• Continuous healthcare worker education and accurate record keeping needed for program improvement
• Additional strategies to prevent HBV mother-to-child transmission such as;
  • Booster HBV vaccine doses for HIV-positive infants.
  • Screening pregnant women for HBV
  • Using HBV-targeted antiretroviral therapy to reduce mother to child transmission.
Thank you!