Closing Immunity Gaps: Hepatitis B Vaccine Coverage and Uptake in HIV-Exposed and Unexposed Children in South Africa

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Hepatitis B Virus: Unveiling the Hidden Depths

Globally, approximately 254 million people are chronically infected with HBV, with an estimated 1.1 million HBV-associated deaths reported in 2022(1). The global burden of disease varies, with the African region bearing the highest prevalence.

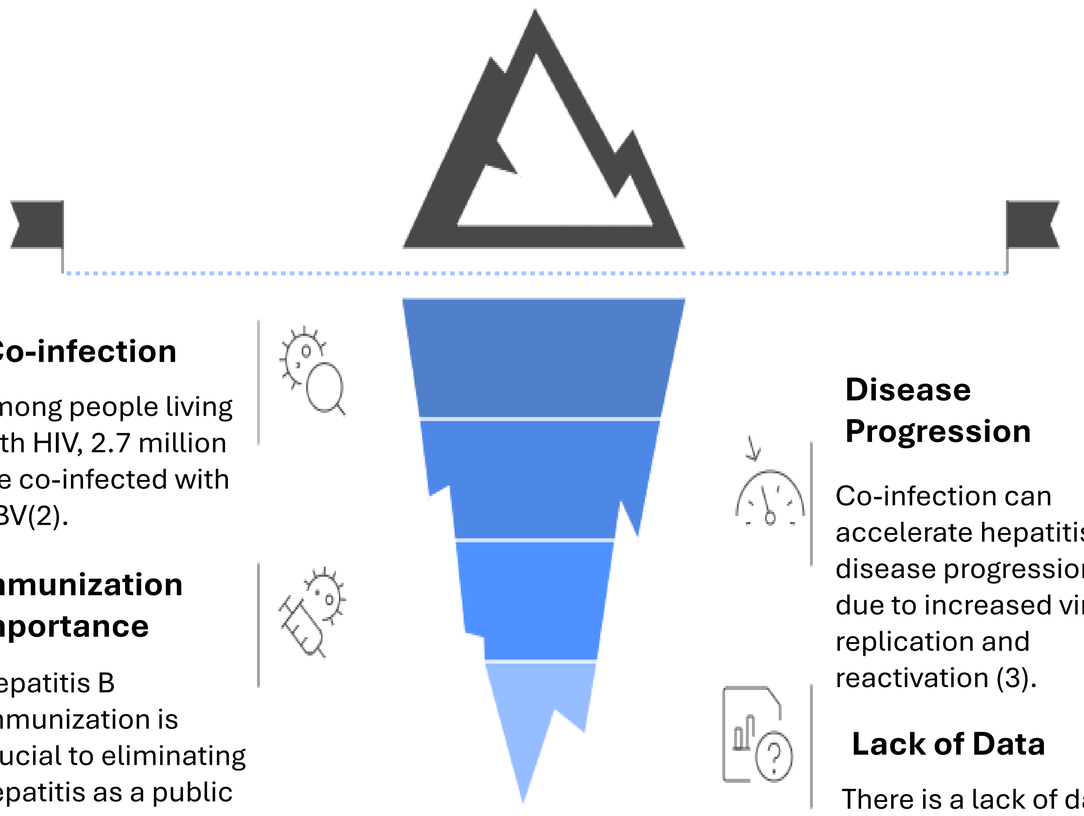

Fig 1: *The "iceberg" model of Hepatitis B virus infection.*

Measuring Hepatitis B Coverage, Timeliness & Immunity

- To assess the coverage and timely uptake of routine infant hepatitis B vaccination, and the burden of HBV infection among CLWH, HEU, and HUU children in South Africa we followed the methodological steps illustrated in **Figure 2**. The key steps included:

1) Obtaining secondary data and archived sera (N=535) from children <13 years old presenting at health facilities in the Western Cape.
2) Assessing hepatitis B vaccine coverage using vaccination records for doses 1 to 3 by 12 months of age, with timely uptake defined as receipt of a dose from 4 days before to 28 days after the recommended age.
3) Testing sera for hepatitis B serological markers: HBsAg, anti-HBs, and anti-HBc to determine HBV prevalence and immunity across HIV strata.
4) Conducting logistic regression analysis to assess factors influencing incomplete and untimely vaccination.

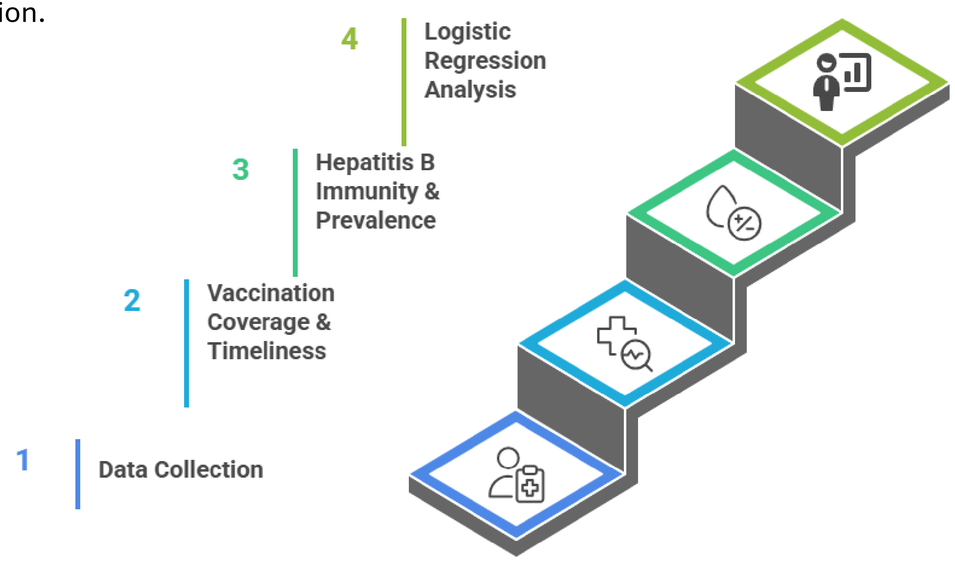

Fig 2: *Methodological steps for assessing vaccine coverage, timely uptake and hepatitis B prevalence among CLWH, HEU and HUU children..*

High Coverage, Delayed Hepatitis B Vaccination

- Vaccine coverage rates were higher for CLWH (86.7%), compared to HUU (80.9%), and HEU (77.0%) children **(Fig 3)**.

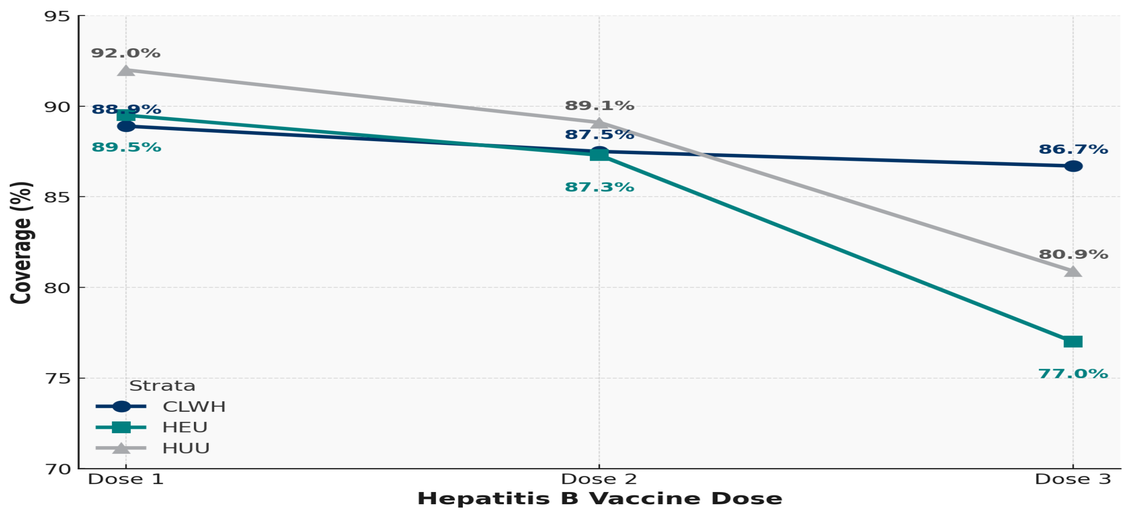

Fig 3: *Declining hepatitis B vaccine coverage rates from dose one to three among among HIV-exposed and unexposed children.*

- CLWH and HEU children consistently show high rates of timely dose completion **(Fig 4)**.
- The drop in timely completion for the second dose highlights potential challenges in adhering to vaccination schedules for these groups.

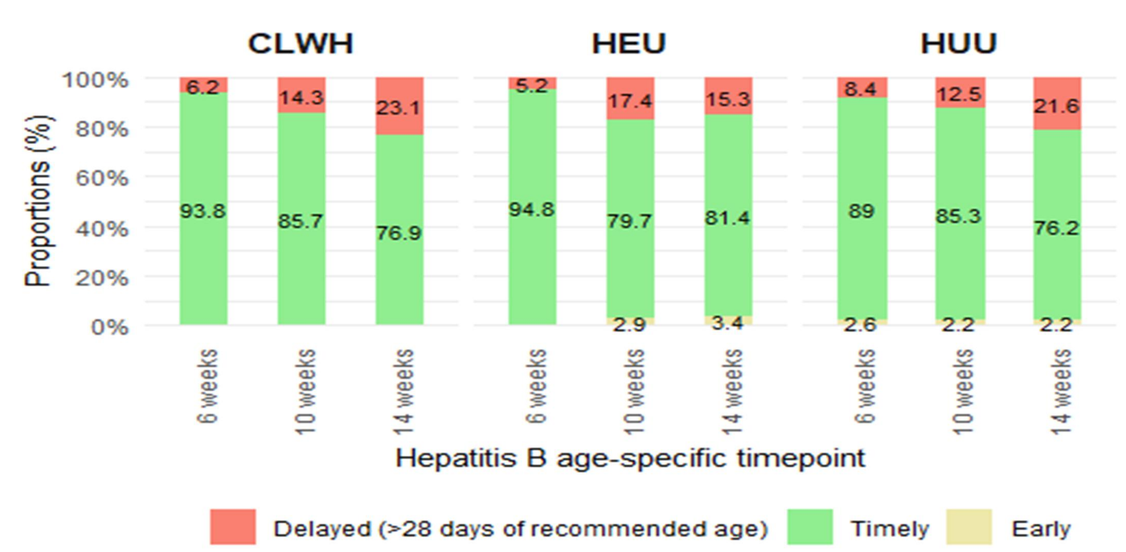

Fig 4: *Proportions of timely vaccine dose completion for the primary vaccination series per HIV strata.*

- The prevalence of chronic HBV infection based on the detection of HBsAg was 0%, 1.35%, and 0.30% among CLWH, HEU and HUU, respectively.

Advancing Towards Viral Elimination: Recommendations to Strengthen National Hepatitis B Strategies

Achieving viral elimination in South Africa requires greater focus on both HIV-exposed and unexposed children ***(Fig 5***).

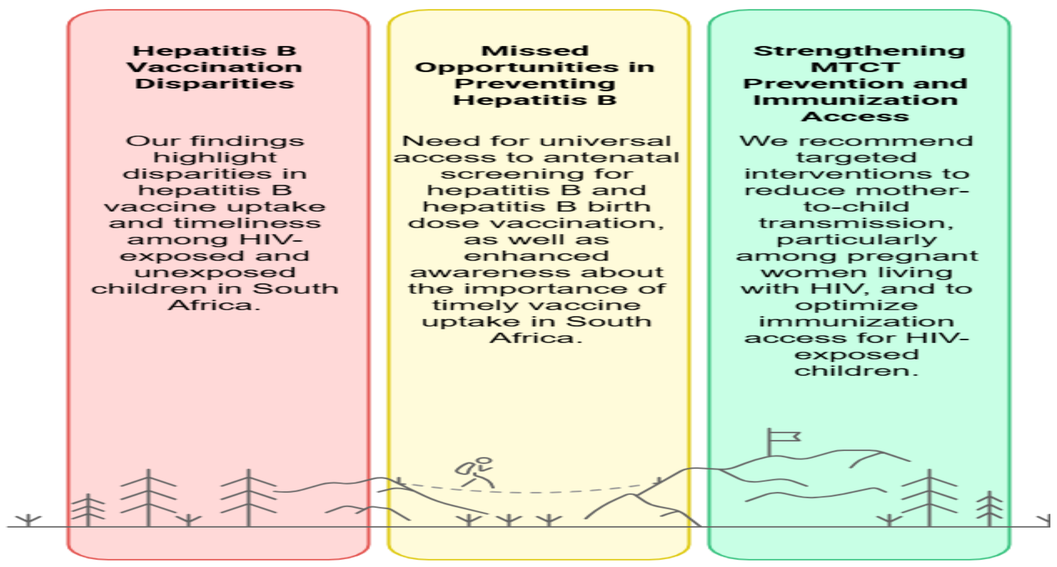

Figure 5 *: Key target areas for improvement in the country.*

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Contact Details

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