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Testing Outcomes of HIV Exposed Infants (HEI) in Botswana

Authors

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Background

Over 20% of women of childbearing age are living with HIV in Botswana

- While over 20% of women of childbearing age are living with HIV in Botswana, pregnant women are encouraged to attend antenatal care (ANC) from fourteen weeks of gestation; 95% of pregnant women seek antenatal care, where they are provided with health education by doctors, midwives, nurses and other cadres of HCWs
- Between 2014 and 2018, reported rates of mother to child transmission of HIV in Botswana ranged from 1.4-4.8%. Published paediatric data of 2020 indicated that Botswana did not reach the WHO 95-95-95 goals for 0–14-year-olds.
- Despite the Botswana National PMTCT Program gathering data on the numbers of infants tested, generally, there is a paucity of information on the extent of the testing and linking to care of HIVexposed infants (HEI). In the first instance, the national program does not capture data on all infants who are HIV exposed and hence eligible for testing
- Early Infant Diagnosis (EID) is critical in achieving these goals by 2025. Global Communities in collaboration with Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE) sought to ascertain the HIV testing and ART services uptake rates by infants born to HIV positive mothers. In addition, the study aimed to explore barriers and enablers for testing and linking to care from the perspective of mothers of these infants and health care workers.

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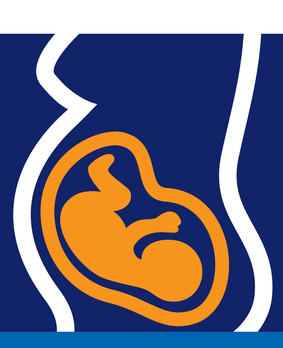

Methods

- Between the year 2020 and 2021, Global Communities and BBCCCOE conducted across-sectional and retrospective cohort study using a mixed-methods approach combining quantitative and qualitative data collection techniques.
- Phase one was quantitative data collection and analysis using structured interviews with mothers and caregivers of HEI, and self-administered questionnaires with health care workers. The quantitative phase focused primarily on assessing the uptake of HEI testing at 6 weeks and 18 months of age; and ART uptake for the HEI who tested HIV positive.
- Phase two was qualitative using Focus Group Discussions (FGDs) with a purposefully selected sub-sample of mothers from those who completed the structured interviews. The FGDs explored the mothers' knowledge and experience with HEI testing, their perceptions of facilitators and barriers of HEI testing, and their recommendations on what needs to be done to increase HEI testing uptake in Botswana.
- The study was conducted at three high delivery burden and referrals hospitals including Princess Marina Hospital (Gaborone), Nyangabgwe Referral Hospital (Francistown) and Letsholathebe Memorial Hospital (Maun).
- All the researchers were trained by the Principal Investigator (PI) on the objectives and importance of the study, data collection procedures and data entry
- Data sources included clinic data, maternal medical history, physical examinations of the children, and HIV testing for children who met criteria but did not get tested.
- Clinical and demographic data, including patient age, medical history, medications, and laboratory results were collected from the paper birth registers at the hospitals and captured into an electronic medical record.
- Data analysis was performed using SPSS version 16.0 (statistical package for social science, SPSS Inc, Chicago, IL, USA). The analyses were restricted to mother-infant pairs focusing on HIV testing history and clinical outcomes.

Results

- A total of 454 children (M: F= 241:213) were enrolled in the study compared to 446 mothers/caregivers. 99% of the participants were biological mothers to the children with the rest being 1 father, 1 sister and 1 aunt.
- At the time of the study, all the mothers were on Highly Active AntiRetroviral Therapy (HAART). 88% of the mothers reported no history of poor adherence; 94% of them reporting having had knowledge on PMTCT at the time of falling pregnant and 98% confirmed having enrolled in the PMTCT program.
- 23% of the mothers breastfed their infants compared to 71% who formula-fed. The rest of the infants predominantly had sequential feeding being breastfeeding for less than the recommended 6 months followed by formula feeding without mixing
- 98% of the children in the study were given some prophylaxis in the form of Cotrimoxazole. 92% of the infant's mothers had received counselling before and after testing while 95% of the children's mothers were able to subsequently disclose the child's HIV test results to significant others.
- 397 exposed infants were tested at 6 weeks and 366 exposed infants tested at 18 months with 95% being HIV negative whilst 2% positive. The remaining 4% had unknown HIV status because they did not perform the test.
- The main reasons for not testing the HEI at 6 Weeks as reported by mothers include child died (17%), fear to test (14%) and mother not informed (14%); while main reasons for not Testing the HEI at 18 months include child tested HIV negative at 6 weeks (24%), child died (14%), and forgetfulness of mother (13%).

Conclusion

- Testing rates for HEI is high in Botswana confirming that most of them are tested within the stipulated time frame and the uptake of HEI testing services is growing
- Low HIV positivity rate among HEI validates the need to do follow-up tests beyond the neonatal testing period to make sure that all exposed children who become infected are identified and enrolled on HAART.
- The fact that the most common reason given by mothers for not testing at 18 months was that they had tested negative at 6 weeks suggests that mothers did not fully comprehend the HEI testing protocols or that they didn't see the need to confirm the negative test results with a rapid test at 18 months. This calls for enhanced education for mothers on the benefits of HEI testing at 6 weeks and 18 months.
- Perspectives of mothers living with HIV on the barriers and facilitators for testing among HEI is critical. Policy efforts, health systems strengthening at community level, and consistent PMTCT health education to mothers living with HIV can promote uptake of HEI testing. A multi- level approach is needed to address barriers to HEI testing uptake.

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