Site Selection Approach to Optimizing Early Infant Diagnosis (EID) Networks with Point-of-Care EID Platforms

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**BACKGROUND**

- Low early infant diagnosis (EID) and generally low pediatric HIV testing rates continue to leave HIV-positive children undiagnosed and with a high risk of mortality.
- Point-of-care (POC) EID has the potential to ensure that at-risk infants have timely access to HIV diagnosis and treatment.
- We present site mapping and an innovative model of hub/spoke as an approach to optimizing the EID network in Lesotho.

**METHODS**

- A hub/spoke model was selected to optimize EID in line with the existing national EID network.
  - Hub sites provide testing for patients at that site and for spoke sites. Spoke sites regularly send samples to the hub sites for POC EID testing.
  - To select sites as hubs and spokes, site-level data on expected number of HIV-exposed infants and test volume, based on site-level numbers of DNA PCR tests, were extracted from national databases in order to estimate expected site test volumes.
  - Additional factors were considered in sorting sites into POC hubs and spokes: existing access to EID, provision of pediatric antiretroviral treatment (ART) on site, and the availability of adequate personnel and capacity for close monitoring and supervision.
  - Realistic working totals of daily workloads for each site, determined by considering the historical and expected testing rate per day, were used to assess the benefits of placing POC EID in sites with less than 0.5 tests per day.
  - POC hubs were created by grouping several low testing volume sites; such as health centres that are in close proximity or linked by a sample transport system.

**RESULTS**

- From a total of 255 potential sites in the country, 66 were excluded from placement of POC EID due to their adequate access in terms of close proximity to the existing conventional EID system at the National Laboratory.
- The POC EID landscape will have 29 testing sites, of which 25 are placed in hubs which jointly are planning to receive samples from an additional 160 spokes sites.
- Of these 29 sites, five sites were selected for a pilot phase to inform national roll out.

**CONCLUSIONS**

- A stepwise approach and multifactorial considerations are necessary to determine the optimal number of POC EID platforms that can be integrated into an EID network that will include POC EID.