Integrating point-of-care technologies into national early infant diagnosis networks: choice of sites for platform placement

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BACKGROUND

- Only half of HIV-exposed infants (HEI) undergo early infant HIV diagnosis (EID), of which only half receive test results.
- Without early diagnosis and treatment, 30% of HIV-infected infants die by one year of age, most within the first three months of life.
- Point-of-care (POC) EID can improve the HIV diagnostic cascade and increase the number of HIV-positive children on treatment.
- Decentralization of PMTCT across Africa has led to lower demand for EID, with implications for EID network and POC EID platform placement.
- EGPAF is supporting nine countries in sub-Saharan Africa to integrate POC into national EID systems.
- A key component of this process is the appropriate selection of sites to adopt POC EID technology.

CHALLENGES IN THE EID CASCADE

Challenge 1: Poor access to and delays in EID testing
- 51% of 1.2 million HIV-exposed African children had access to EID testing in 2015
- Most HIV-exposed infants receive their first test at age 6 months or later (WHO recommends first test at 6 weeks)

Challenge 2: Delays or no return of test results
- Median time of 30 to 90 days from sample to delivery of results
- Only 50% of children who are tested receive their test results

Challenge 3: Poor initiation of HIV-positive infants on treatment
- South Africa study: 10 week delay between diagnosis and initiation of treatment
- Kenya study: 44% of HIV-positive infants never reached ART clinic

RESULTS

- The number of sites where a POC platform could be placed was limited due to proficiency requirements and cost of currently available POC EID products.
- Relying on hub-and-spoke models would increase access to POC EID for a planned 1,758 total sites, where 1,451 are referring spokes (testing sites, who transfer samples to hubs, where diagnostics are evaluated) and 307 are testing sites (of which 178 are hubs) over nine countries versus 231 total sites with access to POC EID without the hub-and-spoke model.
- In most countries, non-laboratory staff will operate the POC EID platforms.
- An initial 87 testing sites will serve as pilots between Q4 2016 and Q1 2017 to evaluate the function of platforms and operators and the feasibility of hub-and-spoke models for POC EID.

CONCLUSION

- Designing appropriate placement criteria and networks will be key to improve access to EID through the integration of POC into existing EID networks.
- Close monitoring of sample transport systems, return of results and turnaround times will be key to ensure that hub-and-spoke models contribute to optimizing the coverage and efficiency of EID testing services.
- As simpler and more affordable platforms come to market, coverage may further increase.