

The gaps in the Early Infant Diagnosis cascade in a high HIV prevalence setting

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The scale-up of Prevention of Mother-To-Child Transmission (PMTCT) programmes has resulted in a substantial decline in the numbers of children born with HIV.¹ However, the PMTCT strategy is aimed not only at eliminating paediatric infections but also at improving survival of infants born with HIV. Therefore, a key component of PMTCT programming is to test HIV-exposed infants through HIV-DNA PCR testing at six weeks after birth (i.e. early infant diagnosis or EID), and to start antiretroviral therapy (ART) promptly in those who test HIV-positive, an intervention which reduces mortality by 76%.²

The study by Phiri *et al* compared each step of the cascade of EID from registration of an infant into the programme to receipt of results by the child's caregiver in two health facilities in Malawi. The first facility was a tertiary hospital performing DNA PCR testing on site while the second was a district hospital that sent samples to a laboratory situated 360 km away.

This study demonstrates the gaps that exist across the EID cascade. Firstly, only half of the samples were collected within 6 to 8 weeks of birth. Secondly, at both sites only about half of the caregivers received the test results of their children. At the tertiary hospital this was largely due to samples not being collected, while at the district hospital the tests were either not processed at the laboratory or results not received by health care providers. Thirdly, a median delay of eight weeks occurred from sample collection at the district hospital to receipt of the sample by the laboratory, largely due to erratic transport facilities, a finding that has been reported from other settings.^{3,4} Notably, at both health facilities, all HIV-positive infants initiated ART later than 12 weeks, which is when peak mortality occurs,⁵ and nearly a third of infants did not complete the EID cascade and were lost to follow-up by 24 months.

The impact of these delays is underscored by the fact that the mortality rate was significantly higher among infants who did not have a blood sample collected or the blood sample was not collected timely; furthermore infants of caregivers who received the results within one month of sample collection from their infants were at significantly lower risk of death than infants of caregivers who did not receive their child's result.

The WHO recommends ART initiation as early as possible in infants infected with HIV to avert the substantial risk of mortality.⁶ HIV testing is the requisite first step to starting timely treatment and, as this study demonstrates, delays and gaps across the EID cascade have a direct impact on mortality. The survival gains from ART will only be realised if health systems are strengthened to address the barriers to timely HIV diagnosis of infants. Tracing procedures for HIV-exposed infants who do not present for follow-up, standards for timely delivery of samples and communication of results to health facilities and caregivers and audit of these standards are critical to ensure quality of services. Finally, investment in point-of-care tests for HIV DNA testing is needed if universal coverage of EID is to be achieved.

515 words

I have no competing interests.

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