



FMOH

**Expanding Access to Pediatric HIV/AIDS
Care and Treatment in Ethiopia:
*Challenges and Prospects***



ICAP

**Pediatric HIV Diagnosis: Best Practices
in Resource-Limited Settings**

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Complexities of Diagnosis

- HIV progresses rapidly and is often fatal in infancy.
 - 50% of infected infants die before the age of 2 years and many with their first O.I.
- Early diagnosis and treatment are critical to impact the burden of disease in childhood.
 - A realistic goal of early diagnosis is to identify the most vulnerable children, rather than exclude infection in the population.

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Complexities of Infant Diagnosis

- Serologic testing (HIV antibody) provides definitive diagnosis of HIV infection only when the child is ≥ 18 months old
 - Maternal antibody crosses the placenta
- Virologic testing (PCR) is used to diagnose HIV infection in infants, when available
- Clinical status and CD4 count/percent can be used to support HIV diagnosis, particularly when virological testing is not available
- Diagnosis of infants is an ongoing *process!*

Critical Elements for Early Infant Diagnosis of HIV

- *Good Clinical Reasoning* can identify children at *high risk* for HIV disease & rapid progression during the first months of life
 - Early and frequent clinical evaluations can help identify signs and symptoms.
 - Close monitoring of growth and development
 - Cotrimoxazole prophylaxis and vaccines as per national guidelines
- Early virologic and immunological testing

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Pediatric Diagnosis in Resource-Limited Settings

- Limited access to virologic testing poses a formidable challenge to infant diagnosis
- Knowledge of maternal HIV status, careful and systematic clinical monitoring, and appropriate use of existing tests (CD4%, total lymphocyte count) can assist providers who lack access to PCR testing
- Routine antibody testing (ELISA) is fine for children > 18 months of age

Characteristics of Virologic Tests

- Sensitivity increases during the first weeks of life
- Sensitivity can vary with assay, laboratory, and processing conditions
- As always, laboratory errors and specimen mix-ups can happen

Early Virologic Testing

Basic Principles

- HIV-exposed infants should have virologic testing *early*, between 6-12 weeks of age
- Early virological testing should be done primarily to identify the infected child at highest risk of disease progression, not to exclude infection in the exposed child
- The exception is in infants who are not breast feeding: can exclude HIV infection with 2 virologic tests (one performed > 4 months)

Early Virologic Testing

Basic Principles

Interpretation of HIV test results should **ALWAYS** be done in the context of the clinical presentation of the infant

Early Virologic Testing

Positive Results

- A positive virologic test result indicates HIV infection irrespective of the child's age or breast-feeding status
 - A repeat virologic test should be done to confirm: *2 positive virologic tests = HIV infection*
 - *However*, treatment should not be withheld awaiting confirmation if the infant is symptomatic and/or rapidly progressing

Early Virologic Testing

Negative Results / Asymptomatic Infant

- An early negative virologic test generally implies that the child was not infected during the intrapartum period
- Most children remain at risk for acquiring HIV through breastfeeding and continued follow-up and monitoring is essential
- Antibody testing (ELISA) should be done at ≥ 12 months or > 6 weeks after the cessation of breastfeeding (whichever comes later)

Early Virologic Testing

Negative Results / Symptomatic Infant

- A single negative virologic test does not exclude HIV
 - Could be a false-negative test
 - Infant could have subsequently acquired HIV via breast feeding
- If an infant whose mother has HIV has symptoms consistent with HIV infection but a negative initial virologic test:
 - Repeat the virologic test
 - Consider CD4 % testing
 - If the child is gravely ill or rapidly progressing and other diagnoses have been excluded, consider a trial of empiric ART treatment

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If virologic results are unavailable, indeterminate, or discordant with the clinical picture...

- ART should still be considered if the child has significant or rapidly progressing symptoms
- Clinical findings can suggest the diagnosis of HIV infection even when virologic tests are negative
 - Low CD4 count or percentage is consistent with HIV diagnosis
 - Other diseases can have similar manifestations and should be ruled out if possible
- HIV antibody testing should be repeated at >12-18 months

Diagnosing a Child who Presents at 9-18 Months of Age

Asymptomatic child

- Screen with HIV antibody
 - If positive, virologic testing is indicated
 - If negative, no virologic testing is necessary
 - If breast feeding, repeat antibody testing >6 weeks after cessation of breast feeding

Symptomatic child

- Screen with virologic testing

Diagnosing Children > 18 Months

- Antibody test can be relied upon, though breast feeding children are at continuing risk of infection and require repeat testing ≥ 6 weeks after breast feeding cessation
- Good Clinical Reasoning!

Diagnosing Children > 18 Months

- Why are so few young children tested for HIV?
 - Where are the two and three year olds?
- Lack of virologic (PCR) testing should have no impact on HIV testing for children > 18 months, since standard ELISA is appropriate.
 - Stigma?
 - Failure to recognize symptoms of HIV in children?
 - Failure to ask adults with HIV about their child's status?
 - Need for consent of parent and guardian?
 - Other?

Critical Elements of a Pediatric Diagnostic System

- Identification of patients (HIV-exposed and HIV-infected)
 - Active case-finding in inpatient wards, under-5 clinics, pediatric TB care settings, adult HIV clinics
- System to ensure follow up of HIV-exposed as well as HIV-infected children
- Routinized introduction of appointment schedule for children based on age and degree of illness
- Systematic strategies to re-engage patients who may have fallen away from care

Responsibilities of the Care Team

- Provide ongoing education, support, and counseling to parent.
- Identify problems and issues EARLY
- Form a bridge between parent and medical provider
- Provide adherence support for both mother and infant, to promote the well being of the family

Responsibilities of the Care Team

(2)

- Review results of HIV test (virologic or antibody)
 - Explain implications
 - Explore parental understanding
 - Explore parental concerns
- Review infant feeding decisions
- Emphasize need for ongoing care and treatment as determined by results

Role of the Parent

- Needs to understand
 - that infant diagnosis is an ongoing process
 - the importance of early testing, frequent monitoring, and adherence to care.
- Often the first to notice signs and symptoms
- Often has multiple complex roles and needs, including self-care, caretaker role for other family members, feelings about transmission of HIV to the infant
- NEEDS UNDERSTANDING AND SUPPORT

Summary

- Infant diagnosis can be a complex and lengthy process
- Where available, early virologic testing should be used to identify those infants at the highest risk for disease progression
- **GOOD CLINICAL REASONING** is paramount to starting treatment *early* especially if lab results are inconsistent or unavailable on a timely basis
- PCP prophylaxis should be offered as part of the care package to all HIV-*EXPOSED* infants
- The parent or caretaker is a key player, and must be educated and supported on this logistically, emotionally, socially and medically complicated path