We retrospectively reviewed data from 96 infants identified as HIV-positive and enrolled in the HITSystem at 6 government hospitals in Kenya.

**Eligibility criteria**
1. Mothers were 18 years or older at the time of her infant’s enrollment into the HITSystem.
2. The infant had a positive HIV DNA PCR result at the 6-week testing occasion.
3. The infant was born between January 2013 and June 2016.
4. The infant was enrolled in the HITSystem at one of the six study hospitals.

**Procedures**
- During the first child enrollment visit, an infant file was created in the HITSystem where maternal demographic and antenatal care data, infant gender and date of birth, and infant HIV DNA PCR testing data were recorded.
- Subsequent infant services (PCR test results, mother notification of test results, date of ART initiation, and/or date and reason for early discharge) were recorded in the HITSystem, as they became available.
- Data was exported from the HITSystem to an Excel spreadsheet for analyses.

**Analysis**
- The goals of this analysis were to describe the proportion of HIV-positive infants being initiated on ART by 12 weeks postnatal and to identify predictors of “early” versus “late” ART initiation.
- Discrete variables are described using frequency and percentage. Continuous variables are described using median and interquartile range. Bivariate analysis were conducted using Chi-square and Wilcoxon Rank Sum tests, as appropriate. A multivariable stepwise logistic regression model, controlling for mother’s age, was used to select the significant predictors. Variables significant at 0.05 from the bivariate analysis were selected for inclusion in the model.

**Study measures and definitions**
- The primary outcome was timing of ART initiation.
- Early ART was defined as receipt of ART by 12 weeks of age.
- Late ART was defined as receipt of ART after 12 weeks of age.
- Possible predictor variables examined included:
  1. Mother’s age
  2. Study site
  3. Mother’s highest level of education
  4. No formal education
  5. Partial/completed primary
  6. Partial secondary or beyond
  7. Infant sex
  8. Department of enrollment into EID
  9. Infant age at first test
- Per guidelines: receipt of first PCR test by 7 weeks of age.
- Outside guidelines: receipt of first PCR test after 7 weeks.

**Results**

### Rates and Timing of ART Initiation

- Of 96 HIV-positive infants, 82 (85.4%) initiated ART.
- Of the 82 infants who initiated ART:
  1. Median infant age at ART initiation was 17.1 weeks.
  2. (20.7%) initiated ART by 12 weeks of age.

**Bivariate predictors of timeliness of infant testing (Figure 1)**

- In bivariate analyses, early ART initiation was associated with:
  1. Infant testing per guidelines (7 weeks or less)
  2. Infants who received testing per guidelines were significantly more likely to initiate ART early compared to infants who received testing outside of the guidelines (41.2% vs 23.3%, p<0.0001).
  3. More rapid TAT for results notification
  4. More rapid TAT for ART initiation

**Multivariable logistic regression analyses (Table 1)**

### Conclusions

- Few HIV-positive infants initiated ART before 12 weeks of age.
- These findings suggest that the observed difficulty in achieving catch-up by 12 weeks is a multifaceted issue compounded by:
  1. Infant testing.
  2. Long TAT for sample processing and caregiver notification, and delays with ART initiation.
- To achieve ART initiation by 12-weeks of age and optimize outcomes for HIV-positive infants, innovative strategies to streamline the testing process are needed.

---

**Table 1. Regression results for early versus late ART initiation**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Chi Square</th>
<th>DF</th>
<th>P Value</th>
<th>aOR</th>
<th>95% CI for aOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant’s age</td>
<td>6.6</td>
<td>1</td>
<td>0.01</td>
<td>0.10-1.25</td>
<td></td>
</tr>
<tr>
<td>Timeliness of infant testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within guidelines</td>
<td>7.61</td>
<td>1</td>
<td>0.006</td>
<td>1.00-3.40</td>
<td></td>
</tr>
<tr>
<td>Late infant testing</td>
<td>5.60</td>
<td>1</td>
<td>0.018</td>
<td>1.38-13.08</td>
<td></td>
</tr>
</tbody>
</table>

---

**References**


---

**Presented at the 22nd International AIDS Conference – Amsterdam, the Netherlands.**