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#1147 REPEAT HIV TESTING DURING PREGNANCY IN KENYA: AN ECONOMIC EVALUATION

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Background:

Repeat HIV testing during late pregnancy may identify women who seroconvert after an initial negative HIV test early in pregnancy, allowing these women to adopt lifelong antiretroviral therapy (ART) for the sake of their own health as well as to prevent mother-to-child transmission of HIV. We evaluated the cost-effectiveness of repeat HIV testing during late pregnancy in Kenya, hypothesizing that retesting would be cost-effective when compared to initial HIV testing alone due to health benefits accrued by mother and child.

Methods:

We used TreeAge software to model a decision tree with the initial decision node comparing the alternative HIV testing strategies (a single antenatal HIV test early in pregnancy, or the initial antenatal HIV test plus a repeat HIV test three months later) and the successive chance nodes representing antepartum possibilities including maternal seroconversion, maternal ART uptake, fetal HIV acquisition, facility delivery, and mortality during delivery. At delivery of the infant, each branch culminates in a state-transition model that jointly tracks the mother-infant pair in one-month cycles for a ten-year horizon (Figure 1). All inputs were drawn from the literature and were varied across their range or distribution in univariate and probabilistic sensitivity analyses.

Results:

In the base case, the retesting strategy was cost-effective for the Kenyan setting at $1,098 per quality-adjusted life year (QALY) saved, yielding fewer infant HIV infections during pregnancy and breastfeeding (n=504 and 253, respectively), infant deaths (n=30), and maternal deaths (n=178) per 100,000 women. Results were sensitive to low cumulative incidence of HIV during pregnancy and monthly cost of maternal ART (thresholds of 1% and $45, respectively). Probabilistic sensitivity analyses confirmed the base-case analysis.

Conclusion:

This modeling study indicates that repeat HIV testing is likely cost-effective and results in fewer infant HIV infections. In the “test and treat era,” in which immediate ART is recommended for all HIV infected persons, retesting for HIV in pregnant women not only improves maternal health outcomes but may also contribute to the elimination of perinatal HIV transmission in Kenya.