

# **Impact of Point-of-Care Diagnostics on Maternal Outcomes in HIV-Infected Women: Systematic Review and Meta-analysis**

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## **Abstract**

**Introduction:** The World Health Organization advocates for increased accessibility of HIV-related point-of-care (POC) diagnostics in settings that lack laboratory infrastructure. The aim of this study is to assess the impact of POC diagnostics on maternal health outcomes in HIV-infected women.

**Methods:** A systematic literature review used multiple data sources as follows: Cochrane Infectious Disease Group Specialized Register; Cochrane Central Register of Control Trials, published in The Cochrane Library; PubMed; EBSCOhost and LILACS from January 2000 to October 2015. References of included studies were hand searched. Randomized controlled trials (RCTs) and observational studies examining health outcomes of HIV-infected women were eligible for inclusion in this review. The Cochrane Risk of Bias tool was used for bias assessment of the included studies. PRISMA guidelines were used for reporting.

**Results:** Of the 695 studies identified, six retrievable studies (five cross-sectional studies and one case control study) met the inclusion criteria and were included in this study. These studies examined a total of 167 HIV-infected women in different study settings. No studies reported evidence of CD4 count, viral load and TB, and the syphilis POC test impact on HIV-infected women was not found by this study. Included studies reported the impact of various HIV rapid tests across the following five maternal outcomes: timely receipt of results with pooled effect size (ES) = 1.00 (95% confidence interval [CI]: (0.98; 1.02)); enabling partner testing, ES = 0.95 (0.85; 1.04); prevention of mother-to-child transmission of HIV, ES = 0.86 (0.79; 0.93); linkage to antiretroviral treatment (ART), ES = 0.76 (0.69; 0.84); and linkage to HIV care, ES = 0.50 (0.18; 0.82). No studies reported evidence of the impact of POC testing on maternal mortality or maternal and child morbidity of HIV-infected women.

**Conclusions:** The review provides an international overview of the impact of HIV POC diagnostics on maternal outcomes in HIV-infected women, showing the evidence that the HIV POC test is significantly associated with decreased mother-to-child transmission of HIV and increased linkage to ART and HIV care for HIV-infected women. It also revealed a gap in the literature aimed at assessing the impact of POC diagnostics on maternal morbidity and mortality in HIV-infected women.

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