



Rapid HIV Testing of Women in Labor and Delivery

Since the first case of pediatric HIV infection was documented in 1984, there have been tremendous medical and public health achievements in preventing mother-to-child transmission of HIV. When the recommended antiretroviral and obstetric interventions are used, a woman who knows of her HIV infection early in pregnancy now has a less than 2% chance of delivering an HIV-infected infant. Without intervention, this risk is approximately 25% in the United States.

The Problem

According to the Centers for Disease Control and Prevention (CDC), approximately 6,000 to 7,000 HIV-infected women gave birth in the United States in 2000, and approximately 280-370 HIV-infected infants were born. An estimated 40 percent of the mothers of these HIV-infected infants had not been diagnosed with HIV before labor and delivery (Office of the Inspector General, Department of Health and Human Services, 2002).

The Solutions

Ideally, all women should be screened for HIV prior to delivery during their initial prenatal care visit. Preventive antiviral therapy is most effective when it is initiated early in pregnancy. However, starting antiretroviral treatment during labor and delivery, or even providing it to the newborn within hours after birth can reduce mother-to-child transmission by half (Wade 1998; Kourtis 2001; Guay 1999). To maximize the benefit, it is important to obtain HIV test results for women in labor quickly in order to start antiretroviral therapy as soon as possible. Rapid HIV tests that can be performed right in labor and delivery can yield results in less than 45 minutes. Such timely knowledge of the mother's HIV status also provides opportunities for other interventions that reduce transmission, such as elective cesarean section, avoiding artificial rupture of membranes, and avoiding breastfeeding (U.S. Public Health Service Task Force Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV-1 Transmission in the United States [living document] <http://www.aidsinfo.nih.gov/guidelines/>). ◀ To help identify optimal ways to use rapid HIV tests and initiate therapy, CDC is conducting the [Mother-Infant Rapid Intervention at Delivery \(MIRIAD\) study](#).

Lack of Timely Test Results Can Be a Barrier to Implementation

The Institute of Medicine and the U.S. Public Health Service recommend that all pregnant women be tested for HIV before delivery, preferably during visits for prenatal care (IOM 1999; CDC 2001). The Office of the Inspector General (OIG) in the Department of Health and Human Services (DHHS) found that significant barriers prevented almost half of obstetricians from routinely offering HIV testing during labor and delivery (OIG/DHHS 2002). One barrier cited by 20% of obstetricians was the inability of available HIV testing technology to produce timely results, specifically “test results take too long” and “rapid or expedited HIV test results are not available.” State HIV/AIDS directors and the American College of Obstetricians and Gynecologists representatives identified the lack of rapid or expedited tests more frequently than any other barrier to testing during labor or delivery.

Based on its findings, OIG recommended that CDC help States develop and implement protocols for HIV testing during labor and delivery in order to promote testing in this setting as the standard of care. This [process](#) is currently underway.

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The MIRIAD Study: Mother Infant Rapid Intervention at Delivery

The MIRIAD study aims to learn more about the dynamics of mother-to-child HIV transmission and how to use the available interventions to their best advantage after offering rapid HIV testing to women who do not know their HIV status late in pregnancy or at the time of delivery. The study will include more than 14 hospitals in six cities: Atlanta, Baton Rouge, Chicago, Miami, New Orleans, and New York City. CDC secured a Treatment Investigational Device Exemption from the Food and Drug Administration (FDA) to use the OraQuick rapid HIV-1 antibody test for women in the MIRIAD study before the test was FDA-approved because it is suitable for point-of-care use with whole blood and offers rapid turnaround for test results. Women in the study are offered antiretroviral therapy on the basis of the OraQuick test result. OraQuick results are also compared to enzyme immunoassay (EIA) and, if positive, to Western blot results as soon as these become available. The table below summarizes MIRIAD's experience with the OraQuick rapid test since the study began in November 2001.

OraQuick Testing in the MIRIAD Study 11/19/01 - 11/1/02
<ul style="list-style-type: none">• 1771 pregnant women tested• 12 HIV-positive mothers identified• No false-negative tests• No false-positive tests

Rapid HIV Testing of Women in Labor and Delivery: A Practical Guide and Model Protocol

For women with unknown HIV status at labor and delivery, the model protocol will offer guidance to clinicians, laboratorians, hospital administrators, and policy makers. In conjunction with the model protocol, CDC is formulating practical tips for overcoming barriers to implementing rapid testing in the labor and delivery setting. The U.S. Public Health Service Perinatal HIV Guidelines Working Group publishes Recommendations for the use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and to Reduce Perinatal HIV-1 Transmission in the U.S. The recommendations are available as a "living document" with frequent updates on line at: <http://www.aidsinfo.nih.gov/guidelines/>. ◀

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