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Vertical (Mother-to-Child) Transmission of HIV: Prevention, Treatment, and Education Literature Review

Executive Summary

Prepared by the Saskatchewan Prevention Institute

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Saskatchewan continues to see high rates of new cases of human immunodeficiency virus (HIV) infection in comparison to the rest of Canada. A large number of these new cases are being identified in women of childbearing age, particularly those between the ages of 20 and 29 years. These are important facts to consider when thinking about the prevention of HIV transmission, particularly the prevention of vertical (mother-to-child) transmission of HIV. Both planned and unplanned pregnancies occur in women living with HIV, and HIV transmission to the baby can occur during pregnancy (in utero), around the time of delivery (intrapartum), or postnatally through breastfeeding. Women living with HIV have approximately a 25% chance of transmitting HIV to their newborn in the absence of preventative measures and HIV treatment. If the woman breastfeeds her baby, the risk of vertical transmission increases to an estimated 35%. Therefore, it is important that women living with HIV and their health care providers are knowledgeable about HIV in the context of pregnancy and ways to reduce the risk of transmission to the baby.

Due to increases in knowledge about vertical transmission, women receiving proper treatment and care have less than a 2% chance of having a baby infected with HIV. The introduction of universal HIV testing in the antepartum period, the use of combination antiretroviral treatment (cART), scheduled caesarean section when appropriate, and formula feeding have been found to produce transmission rates that are less than 1%. When vertical transmission does occur, it is mainly in women who are unaware of their HIV status at delivery. It is for this reason that the Saskatchewan HIV Testing Policy calls for confidential HIV testing to be included in the routine panel of prenatal screening for every pregnant woman. Testing allows those who test positive to access treatment and care early, while also providing education to those who test negative who may be at risk of infection during pregnancy.

Research has identified numerous factors that increase the risk of vertical transmission. Maternal factors related to vertical transmission include: advanced stage of disease; decreased CD4 cell count; high maternal viral load prior to birth; lack of cART during pregnancy; having a genital infection during pregnancy; and using alcohol, drugs, or cigarettes during pregnancy. The health of the fetus, which is related to maternal nutrition and prenatal care, has also been linked to in utero transmission. Overall, women who are less healthy are more likely to pass HIV to their babies. Intrapartum events associated with potential fetal exposure to maternal blood are also correlated with a higher incidence of vertical transmission of HIV. Such intrapartum events include placental abruption, use of fetal scalp electrodes, intrauterine catheters, episiotomy, and lacerations. Other obstetric factors associated with an increased risk of transmission include: longer duration between the rupture of membranes and delivery, presence of a bacterial infection in the membranes around the fetus and the amniotic fluid (chorioamnionitis), the use of forceps, and, in some circumstances, having a vaginal delivery.

In addition to identifying factors that increase the risk of transmission, research has identified numerous factors that significantly decrease the risk of vertical transmission of HIV. First, it is important for pregnant women to find a doctor whom they trust and see him or her regularly. Pregnancy and HIV require special medical care, so it is important for women to find a doctor who is knowledgeable about

HIV. Second, cART is vital for reducing the risk of vertical transmission in pregnant women living with HIV. The Canadian standard of treatment for pregnant women living with HIV includes antepartum cART, intrapartum zidovudine (AZT), and six weeks of postnatal oral AZT to the infant. In terms of antepartum cART, the most effective regimen that is safe in pregnancy should be selected as treatment. Treatment during pregnancy should focus not only on preventing vertical transmission, but also on ensuring optimal health for the mother. Finally, women with HIV should take special care to increase behaviours that support a healthy immune system, such as: getting enough sleep and rest, lowering their stress levels, ensuring they are getting proper nutrition, getting social support, maintaining contact with professionals, and decreasing substance use.

Researchers working in the areas of HIV prevention and prenatal care for pregnant women living with HIV have identified numerous barriers. Many of the barriers to HIV prevention and prenatal care include social determinants of health: lack of food, clothing, stable housing, adequate finances, and transportation. When pregnant women are unable to meet their most basic needs, it can be difficult for them to participate in prenatal treatment and care. Refusal to be tested and/or inability to obtain test results have been attributed in part to obstacles with transportation and having to return to health facilities. Other common reported barriers include: lack of childcare while attending doctor's appointments, mistrust of nurses and doctors, fear of health and social service organizations, fear of having the baby removed from their custody, and lack of access to appropriate substance use treatment programs. In order to receive appropriate treatment and counselling, women need to feel comfortable being honest with medical professionals about their lifestyle (e.g., treatment adherence, food intake, drug use).

Fear of potential judgements and discrimination by staff members, based on a pregnant woman's HIV status, can greatly decrease the likelihood that women will seek prenatal care. The stigma surrounding HIV can influence health and health seeking behaviours. For example, stigma from others can limit the services women receive, and internalized stigma can cause women to avoid seeking treatment and/or avoid disclosing their HIV status. Stigma against HIV is reported to be the main reason for women's reluctance to be tested, to disclose their HIV status, and to take cART. Stigma and discrimination are often based on fear and are often the result of a lack of information, or a wealth of misinformation, about HIV. Therefore, education about HIV and pregnancy is important for the general public, youth, vulnerable women, and health professionals. In addition to increasing knowledge, such education may reduce the stigma and discrimination faced by women with HIV. This, in turn, may increase women's willingness to seek appropriate care and treatment for their HIV in order to further reduce the risk of vertical transmission of HIV.

For more information, including a list of references, please refer to the complete report.