

Epidemiology

The first AIDS cases in the pediatric population in the United States were identified in children born to HIV-infected mothers and in children who received blood products. More than 90% of these children acquired the disease perinatally from their mothers. Smaller numbers of children were infected through the transfusion of contaminated blood or blood products before establishment of screening blood products routinely for HIV. Currently, the principal modes of HIV transmission to the pediatric population are mother-to-child transmission and adolescent risky behaviors, such as sexual activity and IV drug use (Siberry, 2014; Simpkins, Siberry, and Hutton, 2009; Joint United Nations Programme on HIV/AIDS (UNAIDS), 2013).

The estimated number of children with perinatally acquired AIDS peaked in 1992; subsequent years have seen significant declines. This trend is a result of implementation of recommended HIV counseling and voluntary testing practices and the use of highly active antiretroviral therapy (HAART) to prevent perinatal transmission. HAART, typically a combination of two nucleoside analog reverse transcriptase inhibitors and a non-nucleoside reverse transcriptase inhibitor protease inhibitor or integrase inhibitor, is the current standard in the United States for the treatment of HIV-infected pregnant women, and it has significantly reduced the transmission of HIV (Hayden, 2013; Siberry, 2014; Siegfried, van der Merwe, Brocklehurst, et al, 2011; Simpkins, Siberry, and Hutton, 2009). Routine HIV counseling and voluntary testing using the opt-in (must agree) or opt-out approach (right of refusal) is the recommended standard of care for pregnant women in the United States (Centers for Disease Control and Prevention, 2006; 2014b; American Academy of Pediatrics Committee on Pediatric AIDS, 2008; Siberry, 2014; Simpkins, Siberry, and Hutton, 2009).

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HIV is a retrovirus that is transmitted by lymphocytes and monocytes. It is found in the blood, semen, vaginal secretions, and breast milk. It has an incubation or latency period of months to years (Yogev and Chadwick, 2011). There are different strains of HIV. Whereas HIV-2 is prevalent in Africa, HIV-1 is the dominant