

**Estimating averted HIV-related
medical costs on the path to
eliminating mother-to-child
transmission among HIV-infected
pregnant women in New York
State: 1998–2010**

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Eliminating mother-to-child transmission (MTCT)

- ▶ Centers for Disease Control and Prevention
 - Transmission rate of less than 1% of exposed infants, and
 - Incidence of less than one case of MTCT per 100,000 live births
- ▶ New York State
 - Transmission rate of 0.7% in 2010

Calculating the return on investment (ROI)

- ▶ Determine infections averted during the 13-year period of 1998–2010
- ▶ Estimated HIV medical care costs averted
- ▶ Calculate expenditures for services directly associated with preventing MTCT
- ▶ Calculate ROI:

$$\frac{\text{HIV medical care costs averted}}{\text{Expenditures for services}}$$

HIV infections averted among newborns, 1998 – 2010

- ▶ 1997: prevalence rate of HIV–infected newborns in New York State was 11.5%
- ▶ Estimate the number of HIV–infected newborns for each subsequent year assuming constant prevalence rate of 11.5%
- ▶ 1998 – 2010:
 - Extrapolated MTCTs – 1,045
 - Known MTCTs – 296
 - Estimated infections averted – 749

HIV medical care costs averted

- ▶ Lifetime HIV-related medical care costs for a perinatally HIV-infected child
 - \$251,243 in 2001 US\$¹
 - \$357,741 after adjusted to 2010 using Consumer Price Index for medical care
- ▶ Total HIV medical care costs averted for the estimated 749 MTCTs averted is \$267.95 million

¹Sansom et al. *JAIDS* 2006;41(4):521–526.

Expenditures for services directly associated with preventing MTCT

Category	Cost (000s) in 2010 US\$
Testing - HIV testing, confirmatory testing, and increased CD4/VL testing of pregnant women	\$51,231
Enhanced Medicaid payments for HIV counseling during expedited testing during labor and delivery	168
Antiretroviral therapy for pregnant mothers and HIV-exposed newborns	13,111
New York State's Newborn Screening Program	<u>6,083</u>
Total Costs	\$70,593

Calculating the ROI

- ▶ Calculate ROI:

$$\frac{\text{HIV medical care costs averted}}{\text{Expenditures for services}}$$

$$\frac{\$267.95 \text{ million}}{\$70.593 \text{ million}} = \$3.80$$

- ▶ Expenditures for treatment protocols and interventions directly associated with preventing MTCT as relatively inexpensive and can result in almost 4 times their value in HIV treatment cost savings

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