



## National HIV Prevention Conference

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### **[TITLE:] ESTIMATED HIV INFECTIONS PREVENTED AND RELATED COST SAVINGS AS A RESULT OF THE CALIFORNIA PREVENTION FOR HIV POSITIVES PERSONS (PHIPP) PROJECT**

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**BACKGROUND:** The HIV Transmission Prevention Project (HTPP) was a prevention case management intervention conducted at 11 sites in California through the CDC's PHIPP project. Significant changes in sexual and drug using behaviors, six and 12 month post-baseline, have been reported. The objective of this study was to use program outcome and cost data to perform a cost effective and cost-utility analysis of HTPP.

**METHODS:** Estimates were calculated using standard economic and Bernoulli probability models. Costs to prevent HIV infections were compared to the expected future medical care costs associated with total estimated HIV infections and associated impact on quality of life. Program cost data for fiscal years 2001/02 and 2002/03 were provided by the California Office of AIDS. Program cost was calculated as the sum of annual expenditures, where individual program sites expenditures were added to arrive at total program cost. Self-reported behavioral data were from 117 clients who completed a baseline and follow-up questionnaires. Among the 83 HIV-positive clients, 92% were male, 42% were Hispanic, and 21% were African American. Among the 34 HIV-negative clients, 71% were women, 27% were Hispanic, and 3% were African American.

**RESULTS:** Program costs were \$626,696.85, adjusted to June 2003 dollars (all costs were adjusted to allow for comparability in the analyses). Model parameters utilized to calculate the probability of HIV infection and expected secondary infections in the base case analysis. Base case analysis assumes midpoint parameter estimates. Given this scenario, the average number of primary and secondary infections averted by HTPP was calculated to be .04, which would equate to a total of 4.422 HIV infections prevented. Discounted lifetime cost of treating a case of HIV/AIDS is estimated to be \$253,196.12 - this suggests 4.422 HIV infections would likely cost society \$1,119,633.20. The

difference between the total expected medical costs and the net cost of HTPP is the best dollar estimate, for the base case scenario, of total savings provided by HTPP. As such, the estimated cost savings for HTPP is \$492,936.40. Sensitivity analyses were performed to assess the robustness of the model. Sensitivity analysis requires use of varied parameters as inputs into the probability and economic models to assess how alternate estimates will affect cost-effective and cost-utility outcomes. In scenario presented herein, we hold HIV infection estimates constant and assume access to lower quality of medical care and delayed knowledge of HIV infection. This has the effect of decreasing estimated medical care cost savings. This scenario is appropriate when considering higher risk populations. Results indicated while the program is not cost-saving, it is cost-effective - the cost-utility ratio was \$2,185.77. Programs with cost-utility ratios less than \$30,000 or \$50,000 are considered cost effective.

**CONCLUSIONS:** HTPP is a cost-effective program. Overall, and given the model limitations, the model demonstrated robustness over variable model inputs. Even when assuming the .worst. case scenario with higher estimates of HIV infection and lower future medical care cost savings, HTPP was still a cost effective program. We conclude that HTPP was a sound investment of HIV prevention dollars.



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