

Preventing one case of HIV saves over \$225K, study shows

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How much money would be saved if one high-risk person was prevented from contracting HIV in the United States? A new study led by a researcher at Weill Cornell Medical College and published online Feb. 24 in *Medical Care*, answers this question: from \$229,800 to \$338,400, depending on the continuity of treatment.

The researchers projected these amounts by estimating the lifetime medical costs of people both with and without HIV, assuming that the HIV-infection occurred at age 35. The study's results, which were presented Feb. 25 at the annual Conference on Retroviruses and Opportunistic Infections in Seattle, will be used by fiscal planners and public health advocates as they evaluate current prevention programs and make decisions about resource allocation. One relatively new – and expensive – HIV prevention option is Pre-exposure Prophylaxis (PrEP), which is targeted at high-risk individuals and uses a medication that is also part of some HIV treatment regimens.

"This study shows the continued value of HIV prevention, even in an era when people effectively treated with HIV medications can have a close-to-normal life expectancy," said Dr. Bruce Schackman, the Saul P. Steinberg Distinguished Professor of Psychiatry and Public Health at Weill Cornell Medical College and lead author of the study. "There is still significant value in avoiding infection, from both cost and quality of life points of view."

"Recently, there has been an increased focus on new HIV prevention approaches," continued Schackman, who is also a professor of health care policy and research and a professor of health care policy and research in medicine. "That focus on prevention approaches, including the use of PrEP, led to our interest in determining the value of preventing an HIV infection."

In a 2006 study on the same topic, Schackman's

team found that the lifetime medical cost of care for people with HIV, beginning at the time of infection, was \$361,400 in today's dollars. While that finding was seen as a benchmark for evaluating HIV treatment and prevention, updated estimates revealed that the costs differ depending on when people with HIV enter treatment and how consistently they stay in treatment. After subtracting medical costs that the authors projected would have occurred anyway without HIV infection, the potential savings are lower than the previous estimate. This is because people with HIV are now living longer and have many of the same medical care costs as people without HIV.

To reach the new figures, the study team, including researchers from Brigham and Women's and Massachusetts General Hospital in Boston and Johns Hopkins School of Medicine and the U.S. Agency for Healthcare Research and Quality, used the Cost-Effectiveness of Preventing AIDS Complications model coupled with the data from the HIV Research Network to project life expectancy and costs among HIV-infected persons in the U.S.

The new study consists of two types of analyses: a base case and sensitivity analyses, all tracking individuals from the age of 35 until death. The base case represents current care patterns, where patients often don't enter care as soon as they become infected and don't always follow their treatment regimens consistently or are lost from care. The sensitivity analyses, on the other hand, include a best-case scenario in which the infected individual receives antiretroviral therapy immediately and is never lost from care.

The base case resulted in a lifetime medical cost with HIV of \$326,500. The best-case scenario found a lifetime medical cost with HIV of \$435,200. The average lifetime medical cost for similar people without HIV was estimated at \$96,700.

"Effective treatments have increased life expectancy after HIV infection to levels near those of noninfected individuals," noted Dr. Kelly Gebo, a co-senior author of the study and professor of medicine and public health and vice provost for education at Johns Hopkins University. "In fact, deaths from non-AIDS-related causes now exceed deaths from AIDS for those with HIV in the United States."

"As treatments becomes more effective, people with HIV will stay on them and live longer, thereby incurring greater medical costs," said another co-senior author, Dr. Elena Losina, professor of orthopedic surgery at Harvard Medical School and associate professor of biostatistics at the Boston University School of Public Health. "The more effective the treatment is, the greater the medical cost saving is for preventing the disease in the first place."

Provided by Cornell University

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