

is HIV prevention a good investment?

why spend money on AIDS?

In 1994, AIDS became the leading cause of death for adults aged 25-44 in the US.¹ HIV infection is increasing most rapidly among American youth—one in four new infections occurs in people under age 22.²

The cost of the AIDS epidemic is incurred not only in dollars, but also in the suffering and death of friends, family and lovers. The loss to society is untold. We lose productivity and creativity, as well as health and social service dollars.

The lifetime medical cost of treating a person infected with HIV is estimated at \$119,000.³ Other costs include loss of earnings due to premature death from AIDS. One study estimated that for the first 10,000 AIDS cases in the US, the average cost of years of work lost equaled about \$480,000 per death, or \$4.6 billion total.⁴ As the epidemic affects a younger population, these costs will undoubtedly rise.

why is prevention important?

As prospects for a cure or vaccine seem remote, HIV prevention efforts take on an even greater importance for helping stem the tide of this epidemic. But prevention is a hard sell. It's easier to get thousands of dollars spent to rescue a baby from a well than a few hundred dollars to safely cover the well and prevent children from falling in.

Prevention efforts may have beneficial effects on other health conditions besides HIV.⁵ For example, some needle exchange programs have resulted in a reduction in hepatitis B transmission. Consistent condom use not only can prevent HIV infection, but can also aid in reducing sexually transmitted diseases (STDs) and unwanted pregnancies.

is prevention cost saving?

Successful HIV prevention programs that are targeted to the correct populations can be highly cost-effective. One million dollars spent on HIV prevention can save \$2.7 million, depending on the HIV prevalence in the population targeted.⁶ In an age of budget tightening for all public health activities, HIV prevention can help save limited funds, save lives and impact the course of the AIDS epidemic.

Looking at costs of a prevention program is another way to help evaluate effectiveness. A low cost per HIV infection prevented makes a program cost-effective, especially if it is less than the lifetime cost of treatment (\$119,000). Cost-effectiveness is determined using the following variables: program cost, number of people reached, their risk behaviors and HIV incidence, and the effectiveness of the intervention in changing behavior. Due to limited funding, program planners often face the difficult task of choosing from a spectrum of prevention strategies. Cost-effectiveness analysis can help decide how to save the most lives with the resources available.

Cost-effectiveness can also help answer the question of how much behavior change is enough. In certain settings, minimal behavior change can have important public health effect; in other settings, 100% behavior change can be insufficient to justify costs.

Prevention interventions targeted to high-risk populations have a greater effect on the number of HIV infections prevented. One way to assess this is to compare the number of HIV infections likely to be prevented over five years in a program that reduces risk behaviors by a modest 10% (many programs are better). In populations with HIV prevalences of 10-15% (injection drug users or young gay men in San Francisco) \$1 million will prevent about 100 infections. In populations with HIV prevalence of about 1% (female patients in STD clinics in California) \$1 million will prevent about 15 infections. In the large portion of the US population at very low risk, with 0.1% prevalence (job corps applicants), about two infections would be prevented.⁶

Says who?

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what programs are cost effective?

The ideal HIV prevention strategy uses a combination of prevention interventions.⁷ For example, some people at risk can be reached by intensive education and outreach, some by HIV counseling and testing, some by condom distribution programs, some by needle exchange, and so on.

Studies of HIV prevention for injection drug users (IDUs) compared a variety of prevention strategies. In one high-risk East coast city, cost per HIV infection prevented is lowest for needle exchange and extended counseling/education (about \$4,000). HIV counseling and testing is more expensive per infection prevented (\$13,000).⁸

Community interventions have been shown to be effective at reaching people at high risk for HIV. A program that trained community leaders to deliver AIDS risk-reduction messages to their peers in gay bars resulted in a decrease in unprotected anal sex.⁹ Because the program has relatively low costs, the estimated cost per HIV infection prevented is \$12,000 which is much lower than the \$119,000 lifetime cost of treatment.¹⁰

A targeted condom distribution/peer education program in Mexico, the Dominican Republic, and Antigua was found to be extremely cost-effective in the early phase of the AIDS epidemic. The cost per HIV infection prevented was between \$400 and \$1000.¹¹

A community intervention for young gay men in Eugene, OR used a variety of social, outreach, and small group activities designed and run by peers to help lower rates of unprotected anal intercourse.¹² This successful program is estimated to cost about \$11,000 per HIV infection prevented.

A program of STD/HIV prevention among female prostitutes in a low-income area of Nairobi, Kenya was estimated to have helped prevent between 6,000 and 10,000 new cases of HIV per year among clients and sexual contacts of clients. This program was inexpensive to undertake and resulted in costs of \$8 - \$12 per HIV infection prevented.¹³

There are certain cases where a simple cost-effectiveness analysis does not reflect the value of a program. For example, some programs benefit more risk groups than just their audience (partners of HIV-infected pregnant women).¹⁴ Prevention programs that address a low HIV prevalence population are necessary if the prevalences are rapidly rising and do not yet reflect current high risk behaviors (IDUs in New York in the early 1980s). Also, successful prevention programs that are already well established often show decreased risk behavior and HIV prevalence (efforts aimed at older gay/bisexual men). This does not indicate that prevention funds would be better used elsewhere; these programs need to be maintained so that new HIV infections do not recur.

what needs to be done?

Prevention is a smart investment. Nationwide, adding \$500 million to HIV prevention targeted to high-risk groups would yield total medical care savings of \$1.25 billion. The potential for HIV prevention interventions to save lives and dollars emphasizes the need to spend money now rather than later, and to maintain consistent, if not increasing, funding for high-risk groups.

A comprehensive public health HIV prevention strategy uses multiple elements to protect as many people at risk for HIV as possible. Cost-effectiveness analyses can help determine how to save the most lives with limited funding. The failure to adopt public health standards is done only at the peril of wasting scarce prevention dollars on ineffective programs, and thereby missing the opportunity to save lives.

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