

Boston Part A EMA HIV Health Services

**Policy Committee  
2008-2009 Year-End Report**

June 2009



Planning Council Support  
1010 Massachusetts Avenue, 2<sup>nd</sup> Floor  
Boston, MA 02118  
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*The Policy Committee of the Boston EMA HIV Health Services Planning Council presents  
its 2008-2009 Year End Report*

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### **Committee Charge**

The Policy Committee is one of the Council's standing committees. The Council's bylaws state the charge to the committee in Section 6.4.5:

*"The Policy Committee shall analyze local and federal policy and legislative issues, and advise the Council on how these issues may impact the Boston EMA, recommend response strategies, and coordinate such response activities."*

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### **Committee Membership**

#### **Members**

Neil Cronin (Chair)  
Fred Verro (Vice-Chair)  
Jim Campbell  
Larry Day  
Donna Gallagher  
Diane Hackett  
Ethan Herschman  
Alison Kirchgasser  
Florence Saintiche

#### **Support Staff**

Laura Kozek, PCS  
Sharon Asonganyi, PCS  
Apryl Pagliaro, PCS  
Andrew Shawhan, PCS  
Benn Grover, BPHC

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### **Committee Meetings**

- Thursday, November 6, 2008 2:00pm- 4:00pm Boston Public Library  
*Nomination of Committee Vice-Chair, Initial Selection of Policy Topics*
- Thursday, December 18, 2008 2:00pm- 4:00pm Boston Public Library  
*Election of Committee Vice-Chair, Final Selection of Policy Topics*
- Thursday, January 15, 2009 2:00pm- 4:00pm Boston Public Library  
*Committee Updates on Policy Topics, Preparation of Policy Updates to Executive Committee*
- Thursday, February 19, 2009 2:00pm-4:00pm Boston Public Library  
*Committee Updates on Policy Topics*
- Thursday, March 19, 2009 2:00pm-4:00pm Boston Public Library  
*Committee Updates on Policy Topics, Presentation on Federal Issues by Henia Handler*
- Thursday, April 16, 2009 3:00pm-5:00pm Boston Public Library  
*Committee Updates on Policy Topics, Draft Year-End Report*
- Thursday, May 21, 2009 3:00pm-5:00pm Boston Public Library  
*Finalize Year-End Report and Presentation to Planning Council*

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## Work of the Committee

Policy Committee structured its work around several concerns that influence the lives of people living with HIV locally and nationally. Some of these issues were studied per the recommendation of last year's Policy Committee; others were added due to their relevance to Policy Committee issues. Each issue was followed by a particular committee member.

1. Possible Changes to the Ryan White Act ..... *Donna Gallagher*
  2. Massachusetts (and United States) Health Law Reform Implementation ..... *Neil Cronin*
  3. Names-Based HIV Case Reporting ..... *Fred Verro*
  4. CDC Counseling and Testing Guidelines ..... *Ethan Herschman and Larry Day*
  5. Massachusetts Updates ..... *Neil Cronin and Diane Hackett*
  6. New Hampshire Updates ..... *Alison Kirchgasser*
  7. HIV and Aging ..... *Jim Campbell*
  8. Policy Committee Liaison with Consumer Committee ..... *Diane Hackett*
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## Policy Issues

### 1. Possible Changes to the Ryan White Act (Donna Gallagher)

Donna Gallagher monitored the impacts of potential changes in Ryan White HIV/AIDS Treatment Modernization Act (RWTMA) on the Boston EMA, as well as other federal-level issues. The legislation will sunset on September 30, 2009. If the legislation is not reauthorized or extended prior to that date, it will cease to be in effect and will not provide funding for HIV/AIDS services. The consensus among the HIV/AIDS community is that the best course of action is to extend the Ryan White Act for another three years. Although the extended Ryan White Act would be substantially the same as the current Ryan White Act, the Ryan White Working Group, a coalition of groups involved with HIV/AIDS care and treatment, has recommended that a number of adjustments and technical fixes be made to the Act. They are as follows:

- Give more flexibility in setting funding levels, so that Congress is better able to respond to changing conditions.
- Allow states without mature names-based reporting systems to continue submitting their own data to the Health Resources and Services Administration (HRSA).
- Allow Transitional Grant Areas (TGAs) to demonstrate their eligibility for Ryan White Funding by giving HIV data systems more time to mature and fully capture the true number of cases.
- Update the Ryan White Act so that its 'hold harmless' provisions apply to the coming years.
- Expand the definition of the service category *Medical Nutrition Therapy* to include food and nutritional services provided pursuant to a dietician's assessment.

- Split the service category of *Medical Transportation* into *Medical Transportation*, a core service, and *Non-Medical Transportation*, a support service.
- Cease counting ADAP rebate dollars as program income, thus allowing ADAP programs to spend rebate dollars after their federal award monies.
- Allow Part A and B grantees to carry over up to 5% of their formula funds from one fiscal year to the next.
- Eliminate the penalties related to unspent formula funds.
- Cease requiring Part D grantees to pay for primary care when other payers are available.
- Use the existing funding mechanisms for formula and supplemental dollars (for Part A and B grantees) through 2012.
- Make Special Projects of National Significance (SPNS) funds available to aid in the development of Client-Level Data Systems.

In other developments on the national level, Jeff Crowley was appointed Director of the Office of National AIDS Policy on February 26, 2009, and Eric Goosby was nominated to be Global AIDS Coordinator for the State Department on April 27, 2009.

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## **2. Health Reform in Massachusetts and Nationwide (Neil Cronin)**

Neil Cronin monitored the effects of the 2006 health reform law in Massachusetts and the prospect of national-level health reform.

The Health Insurance Connector board decided in their meeting of March 12, 2009 that there would be no increases in premiums for Commonwealth Care, which should favorably impact people's eligibility for coverage and their ability to afford it. Immigrants may be made ineligible for Commonwealth Care, which would increase demands on other elements of the health care system (including Ryan White-funded care.) Nationally, the administration has begun holding a series of regional meetings to hear various views on what national health reform should look like. The administration included a significant amount of money, approximately \$600 billion, in the federal budget for national health care reform. Congress has been charged with putting together the specifics of the health care reform proposal, and an official plan is thought to be put forth this upcoming year.

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### **3. Names-Based HIV Case Reporting in Massachusetts (Fred Verro)**

Fred Verro monitored Massachusetts's transition from a code-based HIV case reporting system to a names-based case reporting system. This change is taking place because the CDC has concluded that names-based reporting is the only way to achieve accurate and reliable case reporting. In addition, while HRSA currently accepts case counts based on code-based reporting (albeit subject to a 5% 'correction'), it is possible that it will cease to do so in the future. If this occurs before Massachusetts' names-based system is mature, then Massachusetts' HIV case counts will drop significantly, imperiling the Boston EMA's and the Commonwealth's formula funds.

Mr. Verro contacted Thera Meehan at the Massachusetts Department of Public Health and learned that roughly 40% of Massachusetts' code-based reports have been re-reported by name.

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### **4. CDC Counseling and Testing Guidelines (Larry Day, Ethan Herschman)**

Larry Day and Ethan Herschman monitored Massachusetts' response to Centers for Disease Control and Prevention (CDC) guidelines around counseling and testing for HIV.

In order to facilitate early diagnosis and treatment of HIV, the CDC has recommended that HIV testing be made routine and that consent procedures surrounding HIV testing be streamlined. Specifically, the CDC recommends that HIV screening be carried out on an opt-out basis (i.e. unless a patient specifically requests that it not be carried out) and that separate written consent for HIV testing not be required. However, Massachusetts law (Massachusetts General Law Chapter 111 Section 70F) requires that health care providers obtain separate written consent for HIV tests.

The Massachusetts Department of Public Health has convened a task force of physicians, other care providers, HIV+ consumers, legal and policy advocates, and governmental officials to examine their response to the guidelines. The task force finished its work during the week of April 6 and the final report is expected to be released by mid-June. Massachusetts law regarding consent procedures for HIV tests is likely to remain the same.

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### **5. Massachusetts State Budget and Funding for HIV/AIDS Services (Neil Cronin and Diane Hackett)**

Neil Cronin and Diane Hackett monitored the Commonwealth's budget and the funds it provides for HIV/AIDS services. Due to the poor economic climate and the resultant decreases in tax revenues, Governor Patrick made a series of '9C' budget cuts (named after the law that gives the governor the authority to make unilateral cuts in the budgets of executive agencies.) The first round of 9C cuts was in October 2008; the Department of Public Health's (DPH) budget was cut by \$30 million, with \$1.5 million in cuts from the HIV/AIDS line item. The second round of 9C cuts was announced on January 28, 2009; the DPH's HIV/AIDS line item was reduced by \$600,000, for a total of \$2.1 million in cuts since the beginning of state Fiscal Year 2009. [As of April 16, 2009, a third round of 9C cuts was forthcoming but had not yet happened.]

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## **6. New Hampshire– NH Medicaid HIV/AIDS Waiver Status and NH AIDS Line Item (Alison Kirchgasser)**

Alison Kirchgasser followed the status of the New Hampshire Medicaid HIV waiver and funding for HIV/AIDS services in the New Hampshire state budget.

### ***Background***

Medicaid is a public health insurance program for low-income individuals that is jointly administered and funded by the federal government and the states. The federal government sets the minimum standards for eligibility and services covered by Medicaid but states can ask the federal government to “waive” certain requirements to allow the state to cover individuals normally not eligible and/or provide services that fall outside the range of mandatory and optional services allowed under federal law.

In general, people with HIV/AIDS can only qualify for Medicaid once they have an AIDS diagnosis and have been determined to be disabled. Some states have requested waivers (under Section 1115 of the Social Security Act) to allow them to cover HIV positive individuals through their Medicaid programs, on the grounds that improved health outcomes and potential savings might result from getting people who are HIV positive into care before their disease progresses to AIDS.

Currently there are only three states with waivers to expand Medicaid coverage to people with HIV prior to an AIDS diagnosis and disability determination. In 2000, the state of Maine was granted a waiver to cover individuals with HIV with income up to 250% of the federal poverty level (FPL). In 2001, the District of Columbia was granted a waiver to cover individuals with HIV (we believe with income up to 100% FPL) and in 2001 Massachusetts began implementing a waiver to cover individuals with HIV with income up to 200% FPL.

### ***New Hampshire HIV/AIDS Medicaid Waiver Legislation***

Current eligibility for people with HIV/AIDS to qualify for NH Medicaid is limited to those with AIDS who have been determined to be disabled and who have income of less than 75% of the Federal Poverty Level.

In 2007 New Hampshire enacted RSA 126-A:4-d, which requires the New Hampshire Department of Health and Human Services (DHHS) to develop and present a design concept and cost estimates for a five year Medicaid HIV/AIDS waiver to the legislature for approval prior to submitting it to the federal Centers for Medicare and Medicaid Services (CMS). As noted in the legislation, the purpose of this waiver is to “support the extension of Medicaid-allowable HIV/AIDS services” by modifying the eligibility requirements to allow more individuals with HIV/AIDS to qualify for Medicaid in New Hampshire.

### ***Waiver Proposal Status***

Due to New Hampshire’s budget outlook for the next two years (including reductions that have already been implemented for this year), the waiver proposal will not be developed for advancement during the FY2010-2011 cycle. The statutory requirement that DHHS propose this waiver is still in place.

### ***New Hampshire HIV/AIDS Line Item***

NH operates on a two year budget cycle. The current biennial budget, which ends June 30, 2009, included \$500,000 per year for HIV/AIDS drug treatment and \$500,000 per year for HIV/AIDS services but the \$500,000 for services was removed this year due to mid-year budget cuts.

The state legislature is in the process of finalizing the biennial budget for July 1, 2009 through June 30, 2011. Some of the budget proposals would restore the \$1M per year in funding but it is unclear whether this restoration would pass.

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## **7. HIV and Aging (Jim Campbell)**

Jim Campbell monitored the policy environment around HIV and aging, attending meetings related to that topic and reporting back to the Policy Committee on important developments.

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## **8. Policy Committee Liaison with Consumer Committee**

Policy Committee member Diane Hackett worked with the Consumer Committee Chair and PCS to provide timely updates on pressing policy developments to the Consumer Committee.

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## **Discussion with Henia Handler of Fenway Health**

Henia Handler, Director of Government Relations at Fenway Health, was invited to meet with Committee members to discuss the reauthorization of the Ryan White Act. Henia provided the Committee with a sheet illustrating the amount of money that had been allocated to Ryan White in the Fiscal Year (FY) 2008 federal budget, the actual amounts allocated for FY2009, and the requests by the Communities Advocating Emergency AIDS Relief (CAEAR) Coalition for FY2010. Henia also gave the committee the *Federal AIDS Policy Partnership Ryan White Work Group Consensus* document outlining how the Ryan White Act should be extended, explaining that the work group requests that the Act be extended for another three years.

Ms. Handler also discussed ways that committee members could advocate for Ryan White funding, including meeting with and writing letters to Congressional representatives.

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## **HIV-Related Policy Discussions**

Planning Council Support staff led discussions of two developments in the news related to HIV/AIDS:

- The report by the Washington, D.C. Department of Health stating that there is an HIV prevalence of at least 3% in the District of Columbia, and an article, discussing the report's findings ("HIV/AIDS Rate in D.C. Hits 3%," by Jose Antonio Vargas and Daryl Fears, *The Washington Post*, March 15, 2009) (Appendix A).

- A study of the effects of PEPFAR on HIV in African countries that found that receipt of PEPFAR funding was associated with lower HIV/AIDS mortality (“The President’s Emergency Plan for AIDS Relief in Africa: An Evaluation of Outcomes,” by Eran Bendavid and Jayanta Bhattacharya, *Annals of Internal Medicine*, May 19, 2009) (Appendix B).

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## **Progress on Recommendations from the 2007-2008 Policy Committee**

The 2007-2008 Policy Committee made several recommendations to the incoming committee members. They included:

- Continuing to track the issues surrounding the 2009 sunset of the Ryan White Act.
- Monitoring the transition to names-based reporting.
- Monitoring the implementation of Health Law Reform.
- Monitoring Massachusetts’ response to the CDC Counseling and Testing Guidelines.

The policy areas recommended by the 2007-2008 Committee were followed, with the addition of the area of HIV and aging, which was followed by Jim Campbell.

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## **Recommendations to the 2009-2010 Policy Committee**

1. Continue monitoring federal health reform.
2. Continue following the extension or reauthorization of the Ryan White HIV/AIDS Treatment Modernization Act.
3. Continue monitoring Massachusetts’ progress toward names-based reporting.
4. Continue monitoring the Massachusetts budget and funding for the HIV/AIDS line item.
5. Continue monitoring the New Hampshire budget and funding for the HIV/AIDS line item.
6. Continue monitoring regulations and policies regarding HIV counseling and testing in Massachusetts.
7. Continue monitoring the interaction of HIV and aging-related issues.
8. Monitor the impact of racial and other disparities in HIV infection rates and outcomes (including, e.g., the impact of gender and sexual orientation).
9. Create a ‘scorecard’ to track developments in each policy area and update it at each meeting.
10. The Committee’s meeting time is provisionally set for 3-5 pm, but the Committee should decide on its meeting time at the first meeting.

**Appendix A:**  
**HIV/AIDS in Washington, D.C.**

## SYNOPSIS

### “HIV/AIDS Rate in D.C. Hits 3%”

*Washington Post*

March 15, 2009

According to a study released by the Washington, D.C. health department, at least 3% of the District of Columbia’s residents are living with HIV. The true number of cases is almost certainly higher, since the study relied on diagnosed and reported cases of HIV and roughly 25% of people living with HIV have not been diagnosed.

#### Subpopulations

- African-Americans are most heavily affected by HIV/AIDS among the city’s racial and ethnic groups and account for 76% of the population living with the disease.
- African-American men are the most heavily-affected subgroup of all, with a prevalence rate of 6.5%.
- 70% of people infected are over 40 years of age. Among that group, people aged 40-49 years have the highest prevalence of HIV/AIDS; 7.2% of this age group in the population are living with the disease. People aged 50-59 years also have a higher-than-average prevalence, with 5.2% of this age group living with HIV.
- Men account for 70% of the epidemic in the District of Columbia.

#### Mode of Transmission

- MSM is the leading mode of transmission (accounting for 37% of cases), followed by heterosexual sex (28%) and injection drug use (18%). Overall, the role of heterosexual sex as a mode of transmission is increasing.
- Among African-Americans, heterosexual sex is the leading mode of transmission, accounting for 33% of cases.
- Among Whites, MSM is the leading mode of transmission, accounting for 78% of cases.
- Among Latinos, MSM is the leading mode of transmission, accounting for 49% of cases.

#### Bright Spots

- People are being diagnosed with HIV earlier in the course of the disease, partly due to the District of Columbia’s implementation of a routine testing policy. This policy has led to a 68% increase in the number of HIV tests done.
- Perinatal transmission has dropped dramatically, with only two cases occurring during 2006-2007, compared to 10 cases in 2005.
- The D.C. health department has been putting a strong focus on prevention, with both needle exchange and condom distribution programs. In 2008, 190,000 needles were exchanged and 1.5 million condoms were distributed.

# The Washington Post

## HIV/AIDS Rate in D.C. Hits 3%

**Considered a 'Severe' Epidemic,  
Every Mode of Transmission Is Increasing, City Study Finds**

By Jose Antonio Vargas and Darryl Fears Washington Post  
Sunday, March 15, 2009; A01

At least 3 percent of District residents have HIV or AIDS, a total that far surpasses the 1 percent threshold that constitutes a "generalized and severe" epidemic, according to a report scheduled to be released by health officials tomorrow.

That translates into 2,984 residents per every 100,000 over the age of 12 -- or 15,120 -- according to the 2008 epidemiology report by the District's HIV/AIDS office.

"Our rates are higher than West Africa," said Shannon L. Hader, director of the District's HIV/AIDS Administration, who once led the Federal Centers for Disease Control and Prevention's work in Zimbabwe. "They're on par with Uganda and some parts of Kenya."

"We have every mode of transmission" -- men having sex with men, heterosexual and injected drug use -- "going up, all on the rise, and we have to deal with them," Hader said.

In addition to the epidemiology report, the city is also releasing a study on heterosexual behavior tomorrow. That report, funded by the CDC, was conducted by the George Washington University School of Health and Health Services.

Among its findings: Almost half of those who had connections to the parts of the city with the highest AIDS prevalence and poverty rates said they had overlapping sexual partners within the past 12 months, three in five said they were aware of their own HIV status, and three in 10 said they had used a condom the last time they had sex.

Together, the reports offer a sobering assessment in a city that for years has stumbled in combating HIV and AIDS and is just beginning to regain its footing. A more accurate accounting of the crisis offers a chance to contain what is largely a preventable disease.

So urgent is the concern that the HIV/AIDS Administration took the relatively rare step of couching the city's infections in a percentage, harkening to 1992, when San Francisco, around the height of its epidemic, announced that 4 percent of its population was HIV positive. But the report also cautions that "we know that the true number of residents currently infected and living with HIV is certainly higher."

The District's report found a 22 percent increase in HIV and AIDS cases from the 12,428 reported at the end of 2006, touching every race and sex across population and neighborhoods, with an epidemic level in all but one of the eight wards. Black men, with an infection rate of nearly 7 percent, carry the weight of the disease

The report notes that "this growing population will have significant implications on the District's health care system" as residents face chronic medical problems associated with aging and fighting a disease that compromises the immune system.

Men having sex with men has remained the disease's leading mode of transmission. Heterosexual transmission and injection drug use closely follow, the report says. Three percent of black women carry the virus, partly a result of the increase in heterosexual transmissions.

"This is very, very depressing news, especially considering HIV's profound impact on minority communities," said Anthony Fauci, director of the National Institutes of Health's program on infectious diseases. "And remember: The city's numbers are just based on people who've gotten tested."

Ron Simmons, who is black, gay and HIV positive, said he's not shocked by the study's findings. "You have a high incidence of HIV among African Americans, and a lot of African Americans live in the city," said Simmons, who is a member of a black gay support group. "D.C. also has a high number of gay men, and HIV is high among gay black men."

Charlene Cotton, a D.C. resident who got an HIV positive diagnosis five years ago, said breaking the taboo on discussing HIV is the key to moving forward. "You need to start at home and talk about it," Cotton said. "It's so hush-hush."

Mayor Adrian M. Fenty (D) said he is aware that some advocates have called on elected officials and others to more aggressively and publicly address the crisis. He praised the city's recent efforts, however, and expressed his frustration about the struggle ahead.

"In order to solve an issue as complex as HIV and AIDS, you have to step up," he said. "It's the mayor and certainly other elected officials. But it's also the community. You have this problem affecting us, and you tell people how serious it is and it literally goes in one ear and out the other."

David Catania (I-At Large), chairman of the D.C. Council's health committee, said that although the District's testing and monitoring have improved in the past two years, the AIDS office is still playing catch-up. The city was in the forefront of the crisis when it created the office in 1986, but it fell far behind. Hader took control in 2007. She is its 12th director and the third in five years.

"Frankly, there can be no excuse for the state of the HIV/AIDS Administration that I found in 2005," Catania said. "I cannot speak to why it was not a priority previously. For years prior to 2005, mayors and previous individuals allowed things to exist in an unacceptable way. And I do blame this government for part of the epidemic we're confronting."

Until recently, the District's AIDS office lacked a fully staffed surveillance unit to collect, analyze and distribute data. Inevitably, the office lost credibility, and although it has received millions in federal and local funds -- \$95 million this year -- some care providers questioned whether resources were being properly allocated.

Critics also say congressional control over the District had restricted the AIDS office's ability to combat the virus among drug injection users by banning the use of local tax dollars for a needle exchange program. After almost a decade, the ban was lifted last year.

The study is the most precise count to date, according to the authors. The document is an update of a breakthrough 2007 report

For years, District HIV/AIDS workers depended on estimates that put the rate at 1 of 20 living with HIV and 1 of 50 living with AIDS.

The current study notes that its tracking occurred as the city made a switch from a code-based counting system to a name-based one. The surveillance unit interviewed medical providers to find unreported cases, pressed providers who did not consistently report to the administration and searched databases for unreported cases.

More than 4 percent of blacks in the city are known to have HIV, along with almost 2 percent of Latinos and

1.4 percent of whites. More than three-quarters -- 76 percent -- of the HIV infected are black, 70 percent are men and 70 percent are age 40 and older.

Heterosexual sex was the principal mode of transmission for blacks with the disease, 33 percent. Men having sex with men was the chief mode of transmission for white residents, 78 percent; and Latinos, 49 percent. Black women represent more than a quarter of HIV cases in the District, and most, about 58 percent, were infected through heterosexual sex. About a quarter of black women were infected through drug use.

The companion study, "Heterosexual Relationships and HIV in Washington, D.C.," is a detailed look at those whose social networks include individuals at high risk of infection and aims to analyze people's choices and actions before they set foot in a clinic or get HIV.

The 750-participant study targeted four areas in wards 1, 2, 5, 6, 7 and 8 with both high rates of AIDS and poverty. Salaries of a majority of participants -- 60 percent -- were under \$10,000 yearly; a similar percentage had never been married; and 43 percent were unemployed.

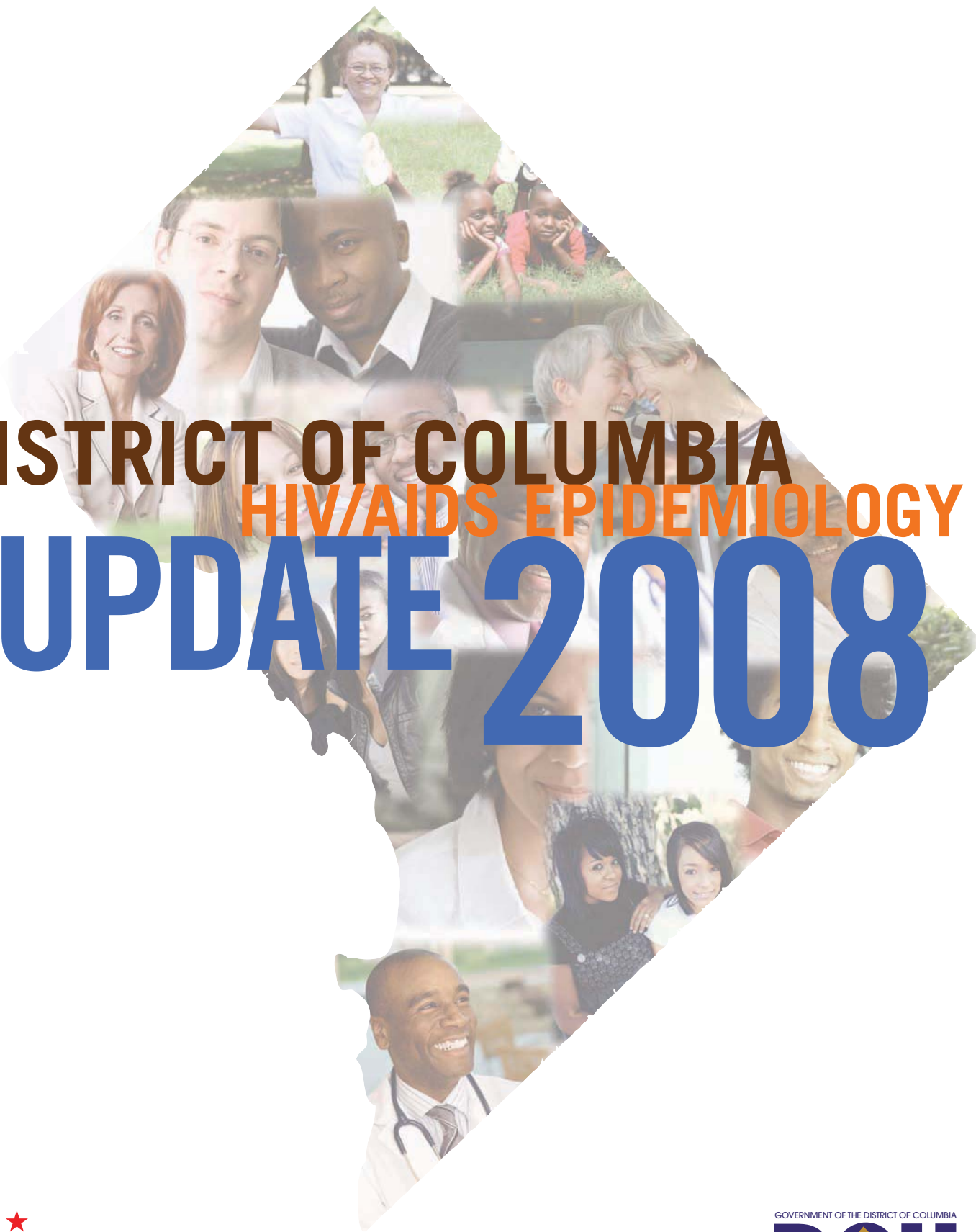
The survey's methodology -- interviewing those with connections to high-risk networks rather than those who exhibit high-risk behavior themselves -- highlights a shift in the direction by the CDC, which developed the survey protocol.

There is good news in the AIDS office's report: More people are getting HIV diagnoses early, while they are still healthy, as a result of a policy of routine testing implemented by the city in mid-2006. Publicly supported HIV testing expanded by 70 percent.

Walter Smith, executive director of the DC Appleseed Center for Law and Justice, praised the study but also lamented that it did not offer more current data on new infections. The report said that detailed information on new HIV cases is not included because the transition from the code-based tracking system to a name-based one takes five years to be mature, according to the CDC.

"I'm not criticizing them for that," he said. "But we've had more testing, more needle exchange programs. We don't have, at this moment, any understanding about what impact the new programs have had."

*Staff writers Jon Cohen and Jennifer Agiesta contributed to this report.*



**DISTRICT OF COLUMBIA**  
**HIV/AIDS EPIDEMIOLOGY**  
**UPDATE 2008**



Government of the  
District of Columbia  
Adrian M. Fenty, Mayor



## EXECUTIVE SUMMARY

In 2007, the DC Department of Health HIV/AIDS Administration released the first annual report on HIV/AIDS in over five years, with the first ever statistics on HIV. The report documented the District of Columbia as having a modern HIV/AIDS epidemic – modern because of its sheer size and complexity. This year's *2008 Report Update* reaffirms the depth and diversity of the epidemic showing in an updated snapshot of how severe an impact it has on District residents. The *Update* provides the “What” of the epidemic. Along side this report, the HIV/AIDS Administration will release a first ever report on the behavior of heterosexual District residents delving into the “Why” of this challenging epidemic.

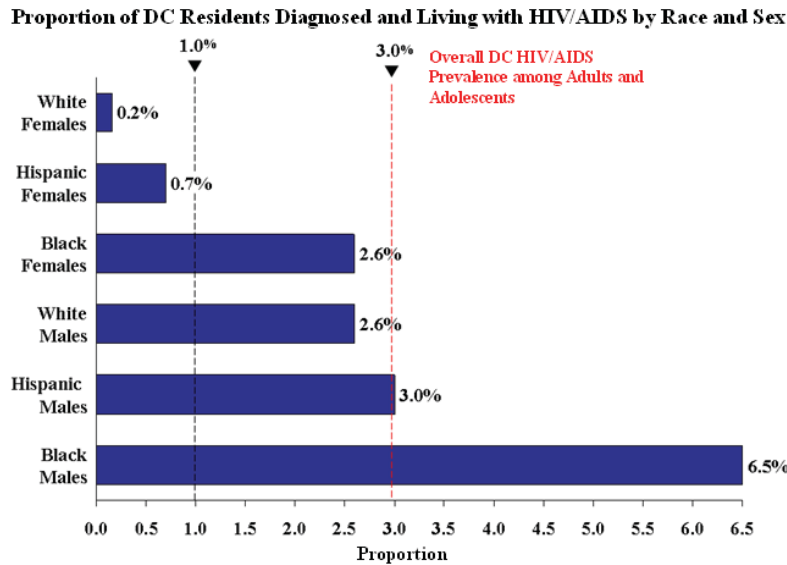
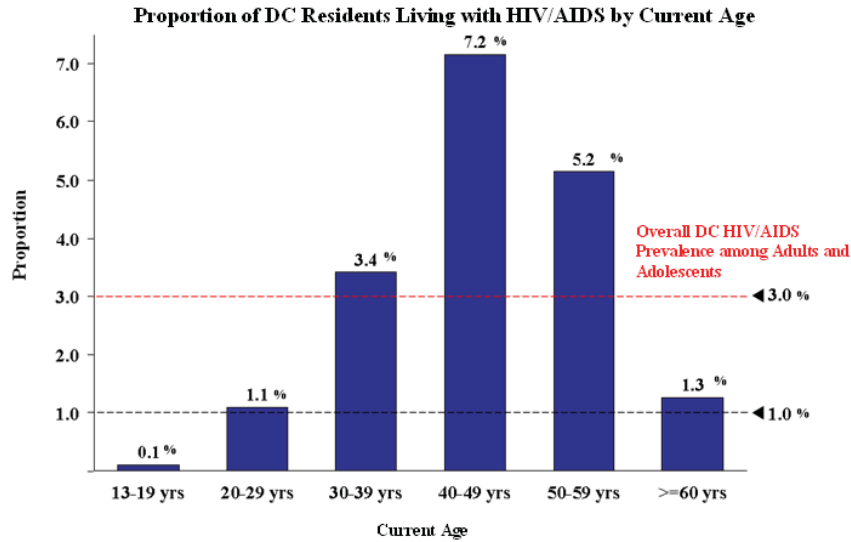
Statistics have far more potential than just reporting the facts, they equip government, community and individuals to better respond to the epidemic. The goal of the 2007 Annual Report was not to sit on a shelf, but to transform programs and policies. In one year, there has been a significant shift in the District's prevention interventions and care and treatment services which redirects resources and innovation to reduce infections and improve the health of persons living with HIV.

This *Update* is the first in an annual series that will release some current statistics on HIV/AIDS in the District while the HIV/AIDS Administration's surveillance system matures with full reporting. The data presented remain the strongest and best statistics compiled on HIV/AIDS in the District of Columbia.

## MAJOR FINDINGS

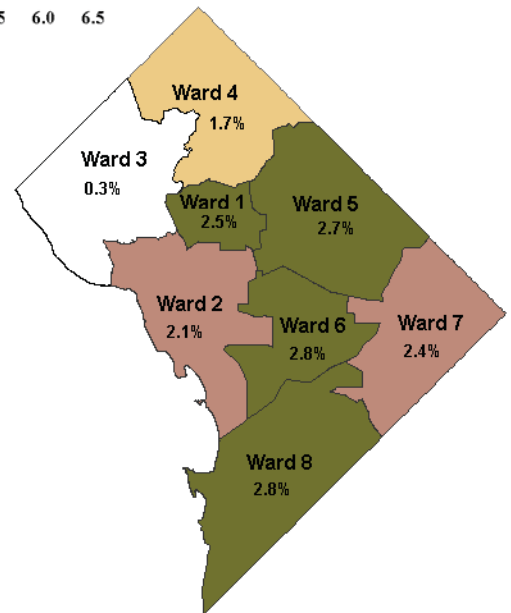
### *1. Huge Impact Across Populations and Neighborhoods*

Overall, 3 percent of all District residents are currently known to be living with HIV/AIDS. To put that in context, the United Nations Joint Program on HIV/AIDS (UNAIDS) and the U.S. Centers for Disease Control and Prevention (CDC) have historically defined an HIV epidemic as generalized and severe when the overall percentage of disease among residents of a specific geographic area exceeds 1 percent. The overall proportion in the District is three times higher. This calculation is based on the number of cases already diagnosed and reported and U.S. Census figures of our population. Moreover, based on new targeted studies of behavior that indicate between one-third and one-half of residents may be unaware of their infection, we know that the true number of residents currently infected and living with HIV is certainly higher. In the District, nearly every population group and age is experiencing a substantial epidemic. The next charts and figures present visually the huge impact.



Currently, the highest rates of HIV are among residents aged 40 to 49 years old, and black men, with approximately seven percent of their respective adult populations already diagnosed and living with HIV. Notably, there are only a few exceptions to the one percent threshold of a severe epidemic across our many populations in the District.

Moreover, we find high rates of HIV in nearly every neighborhood in the District. The map below provides HIV rates by ward for persons diagnosed and living with HIV/AIDS. *Note—these ward-level rates are an undercount, as 20% of our reported cases do not have sufficient information to attribute to a specific ward.* Thus the true rates of persons diagnosed and living with HIV/AIDS in these wards are higher still.



Rates of Persons Living with HIV/AIDS by Ward in the District of Columbia, through 2007 (N=12,174)

In addition to the District’s overall population being affected, some groups remain even more severely and disproportionately affected. These rates are more challenging to calculate precisely, due to difficulties in estimating the overall number of persons with specific individual or group vulnerabilities. Smaller targeted studies will help to better estimate the severity of the HIV epidemic among specific at-risk groups. In 2009, the District will be able to provide information on HIV rates and behaviors among heterosexuals living in or connected to areas of both high HIV / AIDS and high poverty rates (National HIV Behavioral Surveillance Study or NHBS 2007), and on men who have sex with men frequenting social venues and clubs (NHBS 2008). In 2010, the District will be able to provide information on HIV rates and behaviors among Injection Drug Users (NHBS 2009).

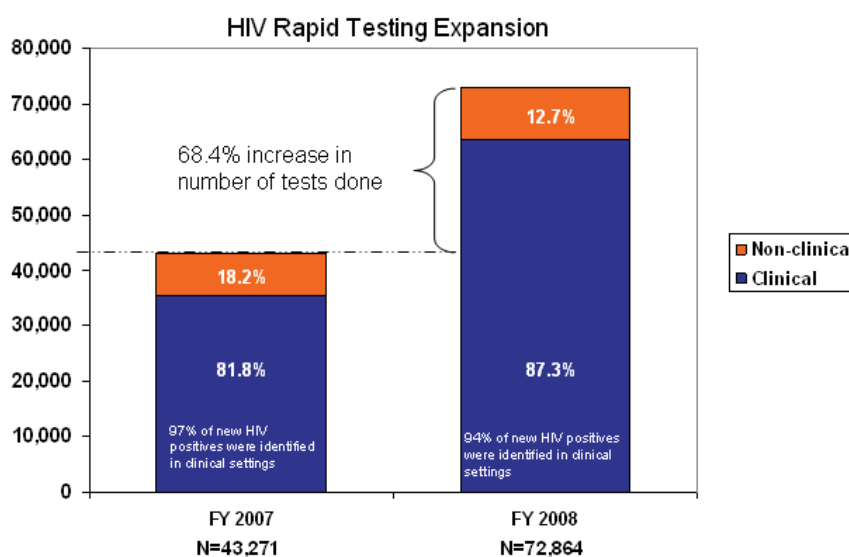
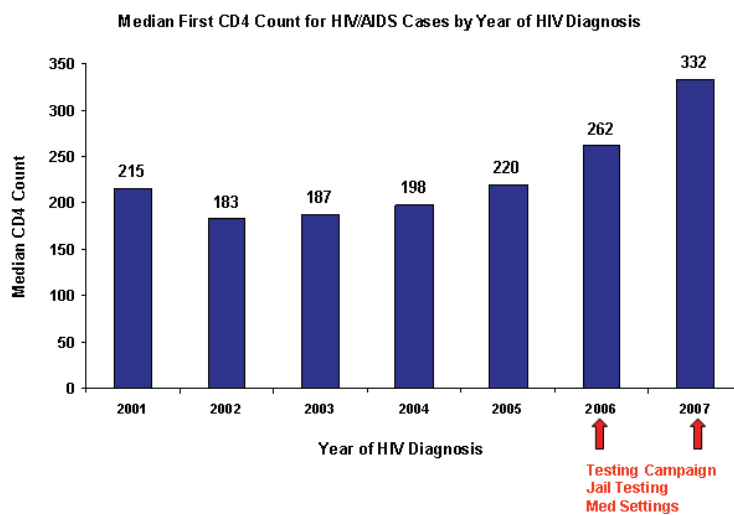
2. Earlier diagnosis of persons living with HIV

Being diagnosed with HIV earlier, before one’s immune system is severely compromised and symptoms arise, provides greater opportunities for better health outcomes for those infected with the virus. It also helps prevent new transmissions by making those infected aware of their status.

In mid-2006, the District became the first city in the country to implement a policy of routine HIV testing, and implemented a series of measures to encourage residents to get tested and providers to normalize HIV testing as part of routine care.

Preliminary results from just the first 18 months of expanded testing suggest that this strategy has been successful in getting more people diagnosed with HIV while still healthy. CD4 counts are a measure of immune status—higher CD4 counts indicate that individuals are generally healthier and have not yet progressed to AIDS. A CD4 count below 200 is an AIDS diagnosis. In just the first 18 months of expanded HIV testing, the median first CD4 count had risen to 332, a 50 percent increase in CD4 counts since 2005.

Between 2007 and 2008, publicly-supported HIV testing expanded an additional 70%. We hope and anticipate that this continued expansion in HIV testing will result in continued gains helping residents to find out about their HIV early enough to stay healthy.



# MAKING PROGRESS TO STOP HIV

The District Government has made progress in multiple program areas in the fight against HIV/AIDS. Here are a few highlights of those achievements:

- ◆ *Access to care and treatment.* Between 2007 and 2008, the HIV/AIDS Administration increased enrollment by 50 percent in its AIDS Drug Assistance Program through a District-wide advertising and outreach campaign called “It’s Free to Treat Your HIV.”
- ◆ *Youth HIV/STD testing.* The number of young people tested for HIV doubled between 2007 and 2008 from 10,000 to 20,000. Though fortunately the numbers of adolescents with HIV remain low, STD rates are extremely high revealing risky behavior which could lead to HIV infections as they get older. The District is one of only three cities implementing a school-based STD screening program. A pilot of the program showed a 34 percent reduction in infections in a repeat annual screening. In FY09, the HIV/AIDS Administration plans to more than double the number of young people tested for STDs to 5,000 and more than double that again to 12,000 in FY10.
- ◆ *Perinatal.* In 2005, there were 10 children born with HIV in the District, accounting for 9 percent of all mother-to-child (perinatal) HIV infections in the U.S. Mayor Fenty set a goal of eliminating mother-to-child transmission in the District by 2009. In 2006 and 2007, updated data show that only one new infection has occurred per year. In 2007, the HIV/AIDS Administration began working with the District’s birthing centers (or Labor and Delivery Suites) to implement routine HIV screening. By 2008, the HIV/AIDS Administration hired a new perinatal coordinator and implemented routine HIV testing in three of the seven Labor and Delivery suites in the District. For FY09, the HIV/AIDS Administration will be expecting all seven to be routinely screening and supporting more OB/GYNs and primary care providers to ensure HIV is a part of routine perinatal care.
- ◆ *Harm Reduction and Needle Exchange.* Barred from using local funds for nearly ten years, in 2007, Congress lifted the ban on needle exchange and in 2008 Mayor Fenty allocated \$650,000 to expand needle exchange and harm reduction services to reduce infection rates among injection drug users. In 2008, the HIV/AIDS Administration provided funding to four organizations, several in new models of integrated services, increasing the number of people served and exchanging 190,000 needles. For 2009, the plan is to increase both the number of people served and to exchange 250,000 needles.
- ◆ *Free Condoms.* The District of Columbia is one of only two cities in the country with a large scale condom distribution program. In 2008, the HIV/AIDS Administration distributed 1.5 million condoms, making progress toward the goal of three million condoms per year.

- ◆ *Expanding the Frontlines of the HIV Fight.* Starting in 2007 and continuing through 2008, the HIV/AIDS Administration has expanded its partnerships with District Government agencies and communities to broaden the frontline on the fight against HIV in the District. The HIV/AIDS Administration launched its Faith-Based Initiative to fully engage the interfaith community by incorporating HIV into its day-to-day faith and community program activities. The HIV/AIDS Administration built on the earlier East of the River HIV/AIDS Initiative to develop the Effi Barry HIV/AIDS Program. The Effi Barry Program has provided capacity building training and technical assistance in both organizational development and HIV skills to more than 50 small Ward-based organizations. In 2008, the HIV/AIDS Administration has provided new support and enhanced investment into the official community planning panels – the Ryan White HIV/AIDS Planning Council and HIV Prevention Community Planning Group – for their effectiveness in assessing need and direction for care and treatment programs and guidance for prevention directions. Lastly, the HIV/AIDS Administration translated data into funding opportunities by retooling the prevention and care and treatment Request for Applications to guide community provider proposals.

## LIVING LONGER WITH HIV

The District's overall goal is to reduce new transmissions of HIV and new diagnoses of AIDS. While those trends will eventually move downward due to an effective HIV response, the overall number of people living with HIV/AIDS will continue to trend upward. With early diagnosis and consistent treatment, the District is already seeing an aging population living with HIV/AIDS. Although 45 percent of HIV/AIDS cases were 40 and older at the time of diagnosis, over 70 percent of persons living with HIV/AIDS are currently 40 and over. This growing population will have significant implications on the District's health care system.

## NEXT STEPS

Overall, the District continues to experience a high burden of HIV/AIDS. To some, three percent of the city's population living with HIV/AIDS may seem like a small number. In comparison, of all Americans, less than one-half of one percent are living with cancer. The District is committed to a data-driven response, by using facts and science to deploy the best interventions and medical treatment. However, self-perception of risk, that HIV/AIDS affects only certain individuals, is a significant barrier that must be changed. 2008 was a remarkable year where the word "change" has taken on new meaning and power. It resulted in a change of direction for the country and it can change the direction of the District's HIV/AIDS epidemic.

***“Good HIV data is vital to our work and the 2007 Epi Data report gave us our first real look at the epidemic in DC. I know that I speak for many when I say that while this data is long overdue, we’re ready to build a surveillance system that is responsive to the needs of DC residents. This report is a great first step.”***

*— Adam Tenner, Executive Director, Metro TeenAIDS*

**Appendix B:**  
**The Effects of PEPFAR in Africa**

## SYNOPSIS

**Title:** The President's Emergency Plan for AIDS Relief in Africa: An Evaluation of Outcomes

**Authors:** Eran Bendavid and Jayanta Bhattacharya

**Journal:** *Annals of Internal Medicine*, Vol. 150 Issue 10

**Date:** May 19, 2009

### Background:

The President's Emergency Plan for AIDS Relief (PEPFAR) provides funds for HIV/AIDS prevention, treatment, and care in 20 countries, many of which are in Sub-Saharan Africa. PEPFAR began providing funds in 2003. The authors carried out an analysis of PEPFAR's effect on HIV-related population health outcomes, by comparing outcomes in countries that received PEPFAR funding with those that did not.

### Outcomes measured:

- HIV prevalence among adults aged 15-49.
- Deaths due to HIV or AIDS.
- Number of adults living with HIV in intervention and control countries.

### Intervention (or Focus) Countries:

Twelve African countries that received PEPFAR funding: Botswana; Cote d'Ivoire; Ethiopia; Kenya; Mozambique; Namibia; Nigeria; Rwanda; South Africa; Tanzania; Uganda; Zambia.

### Control Countries:

Twenty-nine African countries with generalized and severe epidemics (HIV prevalence above 1%) that did not receive PEPFAR funding.

### Method:

Quantitative comparisons of the trends in the epidemic in the intervention and control countries both before and after the introduction of PEPFAR funds.

### Results:

- Receipt of PEPFAR funding was associated with a greater reduction in deaths from HIV/AIDS in intervention countries.
- Receipt of PEPFAR funding may be linked to a relative increase in the number of people living with HIV. This is likely due to decreased mortality from HIV/AIDS.
- Receipt of PEPFAR funding had no effect on trends in HIV/AIDS prevalence.

### Limitations:

There was possible selection bias: countries were not selected at random to receive PEPFAR funds, so there may be differences between the intervention and control countries beyond the receipt or non-receipt of PEPFAR funds (e.g., problems with corruption or poor governance, civil unrest, or civil war.)

**April 7, 2009**

GLOBAL UPDATE

## **Aids Relief: U.S. Initiative Is Found to Reduce Deaths From AIDS, but Not New Cases, in Africa**

By DONALD G. McNEIL Jr.

The President's Emergency Plan for AIDS Relief, the \$15 billion program begun by the Bush administration in 2003, cut the AIDS death toll in its African target countries by more than 10 percent, but did not prevent new cases, according to a new study.

The assessment of the plan, by two Stanford University School of Medicine professors, was published online Monday in *The Annals of Internal Medicine*.

"It has averted deaths — a lot of deaths," said Dr. Eran Bendavid, one of the authors. "However, we could not see a change in prevalence rates."

The report said the full impact of the program, known as Pefpar, "may not be felt for years." Unlike the Global Fund for AIDS, Tuberculosis and Malaria, which is open to all countries, the Bush administration plan was originally directed at only 15 countries, 12 of them in Africa. Using data from Unaid, the United Nations AIDS-fighting agency, the authors compared cases and deaths in those 12 countries against similar data for 29 African countries with more than 1 percent of adults infected but not getting Pefpar help.

Before 2003, the year Pefpar was organized, they found a slightly lower annual increase in AIDS deaths in the 12 Pefpar countries. By 2007, they found it was 10.5 percent lower. But AIDS infections climbed in all countries studied.

Nearly half of Pefpar's money is spent on antiretroviral treatment.

Last year, Congress reauthorized Pefpar as part of a \$48 billion package, but money must be budgeted each year.

**ARTICLE:** The President's Emergency Plan for AIDS Relief in Africa: An Evaluation of Outcomes

▶ Eran Bendavid, MD, and Jayanta Bhattacharya, MD, PhD

**19 May 2009 | Volume 150 Issue 10**

**Background:** Since 2003, the President's Emergency Plan for AIDS Relief (PEPFAR) has been the most ambitious initiative to address the global HIV epidemic. However, the effect of PEPFAR on HIV-related outcomes is unknown.

**Objective:** To assess the effect of PEPFAR on HIV-related deaths, the number of people living with HIV, and HIV prevalence in sub-Saharan Africa.

**Design:** Comparison of trends before and after the initiation of PEPFAR's activities.

**Setting:** 12 African focus countries and 29 control countries with a generalized HIV epidemic from 1997 to 2007 (451 country-year observations).

**Intervention:** A 5-year, \$15 billion program for HIV treatment, prevention, and care that started in late 2003.

**Measurements:** HIV-related deaths, the number of people living with HIV, and HIV prevalence.

**Results:** Between 2004 and 2007, the difference in the annual change in the number of HIV-related deaths was 10.5% lower in the focus countries than the control countries ( $P = 0.001$ ). The difference in trends between the groups before 2003 was not significant. The annual growth in the number of people living with HIV was 3.7% slower in the focus countries than the control countries from 1997 to 2002 ( $P = 0.05$ ), but during PEPFAR's activities, the difference was no longer significant. The difference in the change in HIV prevalence did not significantly differ throughout the study period. These estimates were stable after sensitivity analysis.

**Limitation:** The selection of the focus countries was not random, which limits the generalizability of the results.

**Conclusion:** After 4 years of PEPFAR activity, HIV-related deaths decreased in sub-Saharan African focus countries compared with control countries, but trends in adult prevalence did not differ. Assessment of epidemiologic effectiveness should be part of PEPFAR's evaluation programs.

**Primary Funding Source:** Agency for Healthcare Research and Quality.

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Alleviating the burden of HIV in sub-Saharan Africa is one of the great challenges of our time (1). Infection with HIV is the leading cause of death in Africa, and it is responsible for a reduction in life expectancy in many countries (2). Available resources to prevent and treat HIV in less developed countries have expanded more than fivefold since the Declaration of Commitment on HIV/AIDS, adopted by the United Nations General Assembly in 2001 (3, 4), but the expansion has not been evenly distributed. Since 2003, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) provided the majority of its initial \$18.8 billion budget to 15 focus countries—12 of them in Africa—for HIV and AIDS prevention, treatment, and care (5, 6). Although the criteria for selecting focus countries were not explicit, they were related to the burden of disease, the focus countries' governmental commitment to fighting HIV, administrative capacity, and a willingness to partner with the U.S. government. Nearly half of PEPFAR's resources were spent on antiretroviral drugs and treatment infrastructure, and about one fifth was spent on prevention programs, of which one third was earmarked for abstinence-only programs. Through its various activities, PEPFAR aimed to support the provision of life-saving antiretrovirals to 2 million people and prevent 7 million HIV infections in the focus countries within 5 years. Of the 3 major funders of HIV and AIDS programs

(PEPFAR; The Global Fund to Fight AIDS, Tuberculosis, and Malaria; and the World Bank) PEPFAR is unique in its distinctive approaches and disproportionate funding of a few countries (7–10).

In July 2008, the U.S. Senate reauthorized PEPFAR with a \$48 billion budget for the next 5 years, including a broader emphasis on strengthening health systems (11). The U.S. leadership in the battle against HIV has been one of its most important legacies in Africa (12, 13). However, despite the substantial financial commitment and the important role PEPFAR plays abroad, no quantitative evaluation of the program's outcomes has been completed. The original legislation mandated a short-term evaluation that the Institute of Medicine completed in 2007 (14). Their report scrutinized the ability of PEPFAR to meet its targets for delivery of prevention, treatment, and care services in the focus countries, and it found that within 2 years, PEPFAR supported expansion of HIV and AIDS activities in the focus countries; however, it did not evaluate health-related outcomes, such as HIV mortality, incidence, or prevalence.

The number of human lives affected and the financial stakes make it essential to assess the impact of PEPFAR's investment in Africa. Although the full impact of PEPFAR may not be felt for years, an ongoing evaluation of programmatic outcomes is central to the direction of future policies. Therefore, we quantitatively evaluated HIV-related outcomes in PEPFAR focus countries compared with other countries in sub-Saharan Africa with a generalized HIV epidemic.

## Methods

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### Country Selection

All countries of central, east, west, and south Africa and the island nations of Cape Verde, Comoros, Madagascar, Mauritius, São Tomé and Príncipe, and Seychelles were eligible for this analysis. We excluded countries without epidemiologic data and those in which the HIV epidemic was not generalized. "Generalized epidemic" was defined as HIV prevalence of more than 1% in antenatal clinics and a predominantly heterosexual mode of transmission (9, 15). We examined the countries that PEPFAR selected as focus countries as the intervention group and designated all other sub-Saharan African countries with a generalized HIV epidemic as the control group.

### Data Sources

The joint United Nations Programme on HIV/AIDS (UNAIDS) has monitored the Declaration of Commitment on HIV/AIDS by working with individual countries to measure the global epidemiology of HIV and AIDS (16). We used country and year epidemiologic data obtained through UNAIDS from 1997 to 2007 as the outcome variables for this study. The UNAIDS determines the prevalence trends by using sentinel and population-based surveys. The prevalence estimates, vital registry data, and model-based calculations are then used to determine mortality and the number of people living with HIV. All the estimates are given uncertainty bounds that depend on the quality of the primary data and the strength of the assumptions used in the estimation process (17).

We obtained data on Global Fund allocation of resources, population structure, governance indicators, life expectancy, and per capita gross domestic product from publicly available databases (10, 18–20).

### Study Periods and Outcomes

We chose 2 study periods for this analysis: an early period, from 1997 to 2002, before PEPFAR began and a late period, from 2004 to 2007, during PEPFAR's activities. We excluded 2003, the watershed year when PEPFAR's operations were getting organized. Three outcomes were examined: HIV prevalence among adults 15 to 49 years of age, the number of deaths due to HIV or AIDS, and the number of adults living with HIV. We used these indicators as outcomes because they reflect the most consistent measures for cross-country comparisons available over time. The indicators are publicly available (21).

## Statistical Analysis

We compared trends of the epidemic outcomes between the focus and control countries during the early and late periods. We tested the hypothesis that the epidemic would show greater improvement (or less worsening) in the focus countries than the control countries during the late period, after the onset of PEPFAR's activities. We included the early period to separate the effects of PEPFAR from the natural course of the epidemic and any between-country differences; that is, we wanted to compare not only the relative trends after PEPFAR began but also any changes in the relative trends before and during PEPFAR.

We analyzed the trends by using a fixed-effects model for longitudinal data with fixed time and country effects (22). We clustered by country and calculated robust standard errors because of the inherent bias in serially correlated data (23). Year and PEPFAR designation as a focus country, and an interaction term between them, were included as predictors in the unadjusted model. Except for prevalence rates, the outcomes we examined depend on the size of the population. To account for that, we examined the percentage change in the outcomes of interest by using log transformations of the outcomes (24). For prevalence rates, we report the difference between the focus and control countries of the change in prevalence rather than the difference in percentage change. We report the interaction term coefficient, which estimates the difference in the trends between the focus and control countries. For example, a coefficient of  $-2\%$  in the number of deaths from 2004 to 2007 suggests that during that period, the percentage change in the number of deaths was 2% less in the focus countries than in the control countries (which means that deaths increased more slowly or decreased more rapidly, depending on the overall trend). We used Stata software, version 9.2 (StataCorp, College Station, Texas), for all analyses and Stata's `xtreg` command for the main regression.

In adjusted analyses, we accounted for baseline HIV prevalence in 1997, population size, life expectancy, per capita gross domestic product, the amount of funding from the Global Fund for HIV per capita, and 4 measures of governance from the World Bank's Worldwide Governance Indicators: control of corruption, political stability, rule of law, and government effectiveness (20). The indicators measure the quality of governance in more than 200 countries on the basis of 35 data sources from 32 organizations. They have been available since 1996 and are widely used in development research (25, 26). We also changed the model structure to allow for random year effects. Because none of these additional analyses changed the direction or significance of the relative effect of PEPFAR, we report the results of the unadjusted analyses.

To account for uncertainty in the primary data and model estimates of the UNAIDS data, we did 2 sensitivity analyses (27). First, we performed a Monte Carlo process where the outcome variable was drawn randomly from a uniform distribution of values within the uncertainty bounds for each country-year observation, and the analysis was repeated 1,000 times. We also performed a sensitivity analysis where we randomly selected groups of "focus" countries and ran the analysis 1,000 times to verify our analyses were not biased in favor of finding significant differences (23).

## Role of the Funding Source

This work was supported in part by a training grant from the Agency for Healthcare Research and Quality. The funding agency had no part in the design and conduct of the study; collection, management, analysis, and interpretation of the data; and preparation, review, or approval of the manuscript.

# Results

## Sample Characteristics

We examined 12 PEPFAR focus countries and 29 control countries from sub-Saharan Africa for the analysis. Tables 1 and 2 show the selected countries and their baseline characteristics, respectively. The focus countries had a significantly higher average population (37 million vs. 11.7 million people;  $P = 0.009$ ), but there was no difference in the life expectancy of men or women. The per capita disbursements from the Global Fund were slightly more generous in the control countries, but the annual per capita gross domestic product was significantly lower in those countries (\$1935 vs. \$4094). The focus countries ranked higher than the control countries on all governance indicators, and significantly higher in government effectiveness, at the time of PEPFAR's start. The adult HIV prevalence was higher in the focus countries throughout both study periods ( $P \leq 0.051$ ).

Table 1. Focus and Control Countries

### Focus Countries

Botswana  
Cote d'Ivoire  
Ethiopia  
Kenya  
Mozambique  
Namibia  
Nigeria  
Rwanda  
South Africa  
Tanzania  
Uganda  
Zambia

### Control Countries

Angola	Lesotho
Benin	Liberia
Burkina Faso	Madagascar
Cameroon	Malawi
Central African Republic	Mali
Chad	Niger
Congo	Senegal
Democratic Republic of Congo	Sierra Leone
Djibouti	Somalia
Eritrea	Sudan
Gabon	Swaziland
Gambia	Togo
Ghana	Zimbabwe
Guinea	



Guinea-Bissau

Table 2. Demographic Characteristics and Baseline HIV Epidemic Estimates

Variable*	Focus Countries†	Control Countries‡	P Value
Focus countries, n	12	29	
2007 population, million n (18)	37.0 (40.1)	11.7 (13.0)	0.009
Life expectancy, y (%)			
Men	45.7 (4.1)	46.9 (7.1)	0.58
Women	47.6 (4.4)	49.6 (7.7)	0.40
Gross domestic product per capita, 2007 USD (19)	4094 (5323)	1635 (1455)	0.051
Global Fund disbursement per capita, 2007 USD (10)	3.8 (4.0)	4.7 (7.4)	0.70
Governance indicator score in 2003 †(20)			
Control of corruption	33.6 (23.6)	25.9 (18.4)	0.27
Rule of law	32.2 (20.4)	23.6 (18.5)	0.20
Government effectiveness	37.2 (22.3)	21.3 (16.2)	0.022
Political stability	29.8 (24.5)	29.3 (19.8)	0.95
HIV deaths per 1000 persons			
1997	2.6 (1.8)	1.3 (2.4)	0.0103
2007	3.1 (2.0)	2.2 (3.1)	0.36
Adult prevalence, %			
1997	9.5 (5.9)	4.7 (7.1)	0.051
2007	9.7 (7.1)	4.5 (6.5)	0.028

\*Numbers in parentheses are reference numbers.

†Data are means (SDs) unless otherwise indicated.

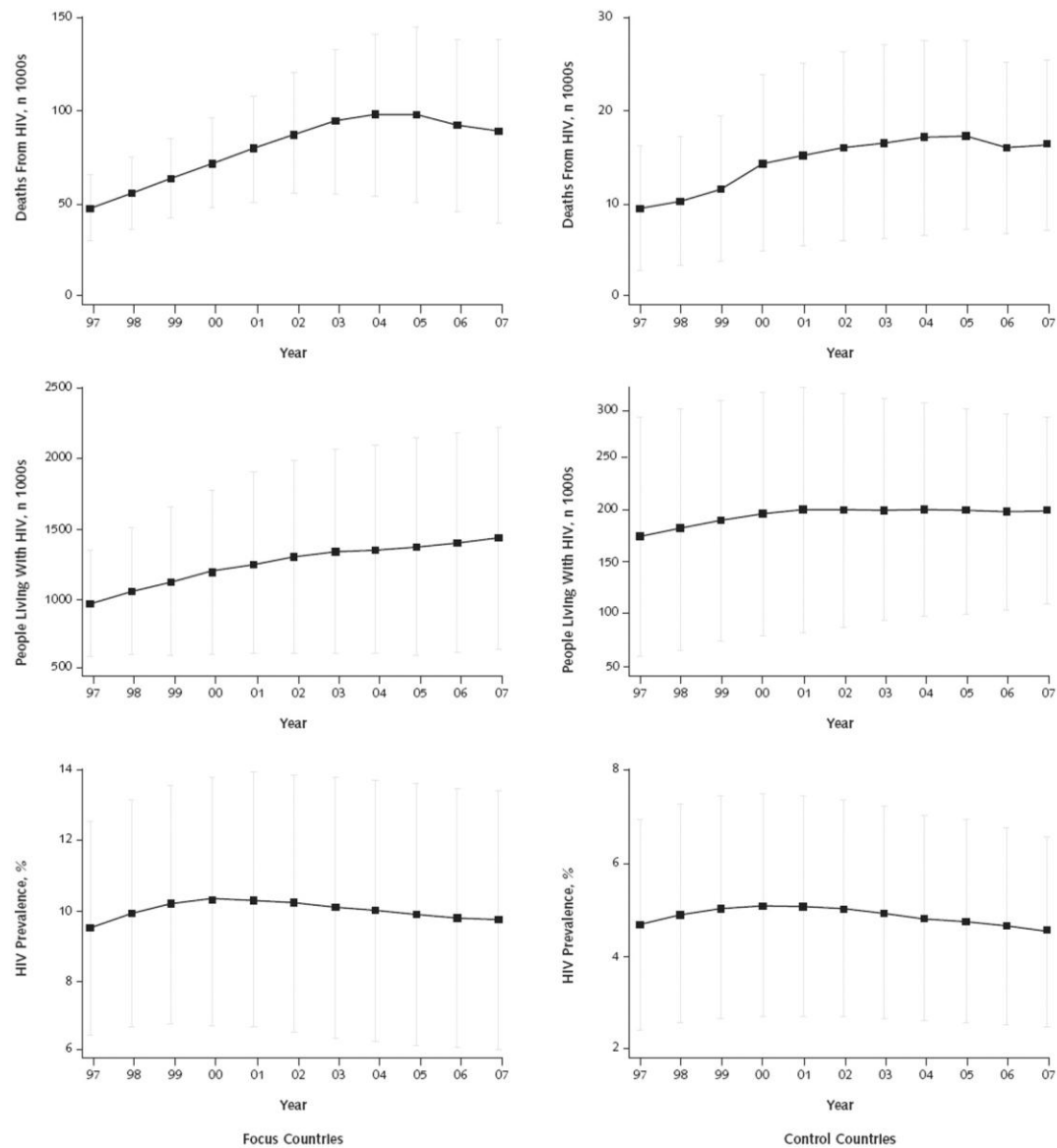
‡World Bank Governance indicators scores are calculated from the percentile rank (0-100) provided for the selected countries out of 212 countries followed.

# Outcome Measures

## Number of Deaths from HIV or AIDS

The number of deaths from HIV or AIDS increased in both groups during the early period but decreased in the late period in the focus countries and leveled off in the control countries (Figure 1). Before 2003, the annual percent increase in the number of deaths due to HIV was 3.5% higher in the control countries, but that difference was not significant ( $P = 0.22$ ). During the late period, however, the death toll from HIV decreased much more rapidly in the focus countries compared with the control countries. During this period, the difference in the percentage change was 10.5% lower in the focus countries ( $P = 0.001$ ) (Table 3). Figure 2 shows that the difference in death rates between the groups started after 2003 and was most pronounced between 2005 and 2006, after nearly 3 years of PEPFAR activities.

Figure 1. Longitudinal Epidemics of the Study Outcomes



## Number of People Living with HIV or AIDS

The number of people living with HIV or AIDS increased in the focus and control countries throughout both study periods (Figure 1). The annual percent change in the number was lower by 3.7% in the focus countries during the early period ( $P = 0.051$ ) (Table 3). In the late period, during PEPFAR's activities, the annual percent increase in the number of people living with HIV or AIDS was slower in both groups of countries. However, the difference (1.7% lower in the focus countries) was no longer significant ( $P = 0.124$ ). That is, between the early and late periods, the focus countries experienced a relative acceleration in the number of people living with HIV or AIDS compared with the control countries. Figure 2 shows that the difference in the annual percent change was diminishing (getting less negative) after 2003, but the difference in the number of people living with HIV/AIDS was negative (the increase was slower in the focus countries) before 2003.

## Adult Prevalence of HIV

The HIV prevalence in both groups peaked by 2002 (Figure 1). Before 2003, the prevalence increased faster in the focus countries than the control countries (0.05% faster annually), but this difference was not significant. During PEPFAR's activities, the difference in prevalence change between the groups was nearly 0% ( $P = 0.95$ ), as both groups of countries experienced a gradual decline of about 0.1% annually in the HIV prevalence in the adult population. Figure 2 shows that the difference in the adult prevalence diminished throughout the early period and remained stable around a 0% difference after 2003. Appendix Tables 1 through 6 provide additional details on the regression models.

Table 3. Differences in Outcomes Between the Focus and Control Countries During the Early and Late Study Periods

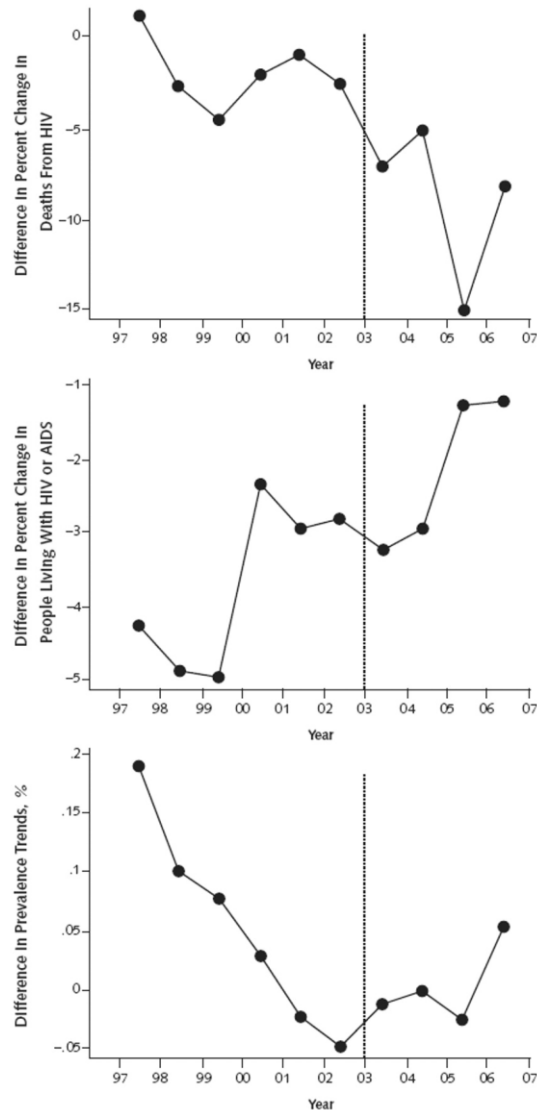
Outcome Measure	Mean Annual Percentage Change During Period*		Difference in Annual Percent Change, Focus Countries Relative to Control Countries (95% CI), %†	P Value
	Focus Countries	Control Countries		
<b>Deaths from HIV or AIDS, %</b>				
1997–2002	14.1	17.2	–3.5 (–9.1 to 2.2)	0.22
2004–2007	–6.3	1.2	–10.5 (–16.6 to –4.4)	0.001
<b>People living with HIV, n</b>				
1997–2002	4.7	8.9	–3.7 (–7.4 to 0)	0.051
2004–2007	1.2	3.1	–1.7 (–4.0 to 0.5)	0.124
<b>Adult HIV prevalence, %‡</b>				
1997–2002	0.14	0.07	0.05 (–0.3 to 0.41)	0.76
2004–2007	–0.09	–0.1	0.01 (–0.18 to 0.19)	0.95

\* Calculated from primary data as the mean of the percentage change in the outcome between consecutive years. Data are available from the United Nations Joint Program on HIV/AIDS Web site ([www.unaids.org](http://www.unaids.org)).

† Results from an unadjusted regression analysis of the difference in annual percentage change between the groups of countries.

‡ Changes in prevalence are compared directly; that is, they are not transformed to percentage change. For example, an increase in prevalence from 5% to 6% counts as a 1–percentage point change rather than a 20% increase.

**Figure 2. Differences in Outcomes between Focus and Control Countries over Time**



## Sensitivity Analysis

To assess the stability of our analyses, we used the uncertainty bounds provided by UNAIDS to select values for the outcome measures. We used a uniform distribution to draw a value for the outcome variables, avoiding assumptions about the true value. We then used the randomly picked value for each country-year as the value for the regression. This process was repeated 1000 times, and we collected the mean of the coefficients and *P* values. Using this procedure, the difference in the annual percent change in the deaths due to HIV or AIDS in the focus countries was  $-2.0\%$  during the early period ( $P = 0.29$ ) and  $-9.7\%$  in the late period ( $P = 0.0198$ ) compared with the control countries. A significant difference in deaths from HIV was observed in 90.7% of the iterations in the late period but only 3.7% of the iterations in the early period. [Appendix Table 7](#) shows full results of the sensitivity analysis.

Our second procedure for verifying the stability of our results, in which we randomly selected groups of countries to serve as "focus" countries for the analysis, showed that any significant differences, especially in the number of deaths, disappeared.

## Discussion

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We examined the effect of PEPFAR by comparing changes in 3 outcome measures between the focus countries and other countries with a generalized HIV epidemic in sub-Saharan Africa, before and after PEPFAR began. Our results show that after 4 years of activity, evidence suggests that PEPFAR was associated with a decrease in deaths due to HIV or AIDS and may be linked to a relative increase in the number of people living with HIV or AIDS. We also see no evidence that PEPFAR was associated with changes in adult HIV prevalence in the focus countries compared with other sub-Saharan African countries.

The reduction in HIV-related deaths is probably the result of improved treatment and care of HIV-infected persons in the focus countries, especially the greater availability of highly active antiretroviral therapy. Antiretroviral therapy coverage increased disproportionately in the focus countries during the past 5 years (9), and nearly half of PEPFAR's expenditures are dedicated to purchasing antiretrovirals, constructing treatment infrastructure, and providing antiretroviral services (28). Around the time of PEPFAR's launch, other governmental and multinational organizations, most notably the Global Fund, also scaled up their activities to combat HIV, which may have contributed to the decline in HIV deaths seen across the continent. However, the added infusion of funding for antiretrovirals in the focus countries made an appreciable impact on the deaths from HIV and indicates the power of antiretrovirals to improve survival in a relatively short period.

We observe a relative acceleration in the number of people living with HIV or AIDS in the focus countries relative to controls during PEPFAR's activities. Although long-term goals may target reductions in the size of infected populations, this increase probably reflects the decreasing death rate and may have several public health spillover benefits. For example, infected adults who live longer may be able to support their children and dependent elderly family members, reducing the burden of orphans and elderly care.

Changes in prevalence are complex and depend on the rate of new infections, deaths due to HIV or AIDS, and changes in the size of the population. We see no evidence that prevalence trends in the focus countries differed from those in the control countries during PEPFAR's activities. To effect a reduction in HIV prevalence, the combined effect of reduced HIV incidence and increased population size must offset the reduction in deaths from HIV or AIDS. Although it may be too early to observe these changes, it is important to follow this trend for several reasons: measurement of prevalence is standardized in many countries, longitudinal trends through sentinel sites are widely available, and it is a key determinant of infection risk (29). A reduction in prevalence that may be attributable to PEPFAR would be a consequential accomplishment for the next 5 years of PEPFAR.

As the number of people receiving antiretroviral therapy and the deaths averted in the focus countries continue to increase, the cost of providing treatment is expected to increase as well. Projections of financial resources needed to sustain the treatment scale-up suggest that even with PEPFAR's greater commitment, the gap between the available funds and those needed will continue to increase unless the incidence of HIV in Africa is substantially reduced (3). Striking the right balance between treatment and prevention with insufficient resources for the burden of the epidemic is a major challenge for comprehensive care programs, such as PEPFAR.

Monitoring impact will have important implications for the future of PEPFAR as well as other organizations that are operating with poor information about the effectiveness and efficiency of their programs. In a recent report, the Institute of Medicine drafted general considerations for evaluating PEPFAR's impact, including HIV prevalence, mortality, and incidence, as well as broader metrics, such as system capacity, economic development, and health status (30). Incidence in particular has not been directly estimated in Africa, but measurement techniques are increasingly available (31). Impact evaluations are difficult, but rigorous methods adapted specifically to resource-limited regions, including randomization into program entry, are commonly used in other disciplines (32).

We evaluated the contribution of PEPFAR to the abatement of the epidemic in the focus countries, which has implications for the program's economic efficiency. By the end of 2007, PEPFAR spent more than \$6 billion on HIV care, prevention, and treatment in the 12 focus countries examined in this study. In those countries, a reduction in the death rate of 10.5% implies about 1.2 million deaths were averted because of PEPFAR's activities. This large benefit cost about \$2450 per death averted, assuming that PEPFAR directed half of its budget towards treatment. This is a rough estimate, and it may change as the treatment infrastructure and supply chains become more established, but it could allow an evaluation of the program's efficiency. A formal cost-effectiveness analysis will also allow a comparison with other interventions for HIV in Africa (33).

Our study has several limitations. First, we used UNAIDS data that is derived in part through mathematical models. We dealt with this limitation by doing a sensitivity analysis using the uncertainty bounds, which take into account the imprecision in both the primary data and the model estimates. We used a resampling procedure that is agnostic about the exact values of outcomes within the uncertainty bounds and strengthens the results of the primary analysis. It is also possible that the data in the focus countries are more reliable than those in the control countries. This is unlikely to change the results, however, as PEPFAR's support for monitoring and evaluation programs was minor and this effect is likely to be small.

Second, we performed cross-country comparisons between groups of countries that were not picked at random and had significant baseline differences. We addressed this in part by controlling for observable potential sources of bias, such as population, gross domestic product, aid for HIV from other sources, and governance indicators. Because the focus countries were not selected randomly and we cannot fully observe the differences between the groups, our measured effects may be specific to the countries and years of the study—that is, we cannot fully generalize the results to other countries or other periods. If PEPFAR had chosen a different set of focus countries or operated at a different time, we may have observed a different impact.

Third, the observed difference in deaths after 2004 may have resulted from a difference in the phase of the epidemics in the study countries. That is, if the epidemic in the focus countries was more mature than in the control countries, then the observed relative reduction in deaths could occur without any intervention or program. However, the lack of difference in HIV deaths before 2003 argues against this possibility as an explanation of the results.

Although the Institute of Medicine scrutinized PEPFAR's operations, it did not evaluate outcomes that are central to prevention and treatment efforts regarding the epidemic. The commitment of funds by the U.S. government is commendable, but it is crucial to ascertain that PEPFAR is effective and that the investment in this program is cost effective. As PEPFAR enters its next funding period, evaluating outcomes will highlight the areas that are successful and those that are not making an appreciable impact. Our analysis shows the success of PEPFAR in averting HIV-related deaths in a relatively short period. It also underscores the importance of a continued outcome-based evaluation of this essential and expensive intervention.

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**Acknowledgment:** The authors thank Karen Stanecki of UNAIDS for help with providing and clarifying the data used in this study and Grant Miller, PhD, and Kanaka Shetty, MD, MS, of the Center for Health Policy at Stanford University for methodologic contributions.

**Grant Support:** By a training grant from the Agency for Healthcare Research and Quality (Dr. Bendavid) and the National Institute on Aging (Dr. Bhattacharya).

**Potential Financial Conflicts of Interest:** None disclosed.

**Reproducible Research Statement:** *Study protocol:* Not available. *Statistical code:* Available from Dr. Bendavid (e-mail, [ebd@stanford.edu](mailto:ebd@stanford.edu)). *Data set:* The HIV epidemiologic data are available from UNAIDS ([www.unaids.org](http://www.unaids.org)). The complete data set is available from Dr. Bendavid (e-mail, [ebd@stanford.edu](mailto:ebd@stanford.edu)).

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