

**Johns Hopkins University School of Medicine**

**Who's at Risk for HIV? Today's HIV Epidemic**

***Victoria A. Cargill, MD, MSCE***

***William R. Short, MD, MPH***

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This activity is intended for primary care providers (family and internal medicine); hospitalists; emergency medicine clinicians; pediatricians; women's health providers; oncologists; nurses/nurse practitioners; physician assistants; and infectious disease/HIV specialists.

## Goal

The goal of this activity is to increase the use of opt-out HIV testing as a means to improve patient health and reduce HIV transmission.

## Learning Objectives

Upon completion of this activity, participants will be able to:

1. Define the latest trends in HIV incidence and prevalence, including shortcomings in testing and screening practices
2. Describe data on the incidence and consequences of undiagnosed HIV infection in the United States
3. Explain recommendations for "opt-out" testing in the United States

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### Author(s)

#### **Victoria A. Cargill, MD, MSCE**

Director, Minority Research and Clinical Studies, Office of AIDS Research, National Institutes of Health, Bethesda, Maryland

*Disclosure:* Victoria A. Cargill, MD, MSCE, has disclosed no relevant financial relationships.

Dr. Cargill does not intend to discuss **off-label** uses of drugs, mechanical devices, biologics, or diagnostics approved by the US Food and Drug Administration (FDA) for use in the United States.

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#### **William R. Short, MD, MPH**

Assistant Professor of Medicine, Jefferson Medical College, Philadelphia, Pennsylvania

*Disclosure:* William R. Short, MD, MPH, has disclosed no relevant financial relationships.

Dr. Short does not intend to discuss **off-label** uses of drugs, mechanical devices, biologics, or diagnostics approved by the FDA for use in the United States.

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### Editor(s)

#### **Mary E. Anderson, PhD**

Scientific Director, Medscape, LLC

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Spouse provided writing services for: Forest Laboratories, Inc.; Genentech, Inc.; GlaxoSmithKline

### CME Reviewer(s)/Editorial Commentary

#### **John G. Bartlett, MD**

Professor of Medicine, Department of Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland

*Disclosure:* John G. Bartlett, MD, has disclosed no relevant financial relationships.

#### **Veronica Miller, PhD**

Director, Forum for Collaborative HIV Research, Washington, DC

*Disclosure:* Veronica Miller, PhD, has disclosed the following relevant financial relationships:  
Served on the advisory board for: Bristol-Myers Squibb Company

## CE Reviewer/Nurse Planner

### Laurie E. Scudder, DNP, NP

Accreditation Coordinator, Continuing Professional Education Department, Medscape, LLC; Clinical Assistant Professor, School of Nursing and Allied Health, George Washington University, Washington, DC; Nurse Practitioner, School-Based Health Centers, Baltimore City Public Schools, Baltimore, Maryland

Disclosure: Laurie E. Scudder, DNP, NP, has disclosed no relevant financial relationships.

## CONTENT:

### Who's at Risk for HIV? Today's HIV Epidemic CME/CE

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## Pre-Activity Questionnaire

### Who's at Risk for HIV? Today's HIV Epidemic

1. Do you routinely conduct opt-out HIV screening for every patient age 13-64 years regardless of perceived risk and link HIV-positive individuals identified through screening to appropriate care?

- No, and I do not intend to in the next 6 months
- No, but I intend to in the next 6 months
- No, but I intend to in the next 30 days
- Yes, and I have been for less than 6 months
- Yes, and I have been for less than 6 months

### Decision-Making (Pros and Cons)

The next section lists statements that represent different opinions about conducting opt-out screening in every patient age 13-64 years, regardless of perceived risk, and linking HIV-positive individuals identified through screening to appropriate care. We are not asking whether you agree or disagree with the statements. We are asking you to take a little more time to rate the importance of each in your decision to use this approach to HIV screening and linkage to care.

**If the statement does not apply to you, you should respond Not important.**

**Question: How important is each of the following in your decision about whether to conduct opt-out screening for HIV in every patient age 13-64 years, regardless of perceived risk, and link HIV-positive individuals identified through screening to appropriate care?**

2. This approach reduces the likelihood that HIV-positive persons will transmit the virus to others.

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**3.** *This approach is uncomfortable for me because I don't know how to provide counseling for HIV-positive patients.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**4.** *This approach decreases stigma of HIV testing.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**5.** *This approach could upset or offend patients.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**6.** *This approach prevents HIV complications through earlier treatment.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**7.** *This approach is too burdensome.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**Confidence**

The next section lists situations in which some clinicians might not conduct opt-out screening in every patient age 13-64 years, regardless of perceived risk, and link HIV-positive individuals identified through screening to appropriate care. Please tell us **how confident** you are that you would conduct opt-out screening and link HIV-positive individuals to appropriate care in these situations.

8. *If the mechanisms are not in place for easy referral.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

9. *If my patient is resistant to screening.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

10. *If my peers aren't doing this.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

11. *If it is difficult to believe my patient is at risk.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

12. *If it requires additional resources (eg, training or staff).*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

### Editors' Commentary

We are facing a unique moment of opportunity to turn around the HIV/AIDS epidemic in the United States. But for this to happen, routine opt-out HIV testing needs to be fully implemented.

Diagnosis of HIV and treatment of the infection have the potential to reduce transmission through multiple effects. Once their HIV status is known, people can alter their behavior, reducing the likelihood of transmission. Engagement of HIV-infected individuals in care can decrease the amount of virus available for transmission through effective antiretroviral therapy, which also has the potential to reduce transmission. Treatment of HIV has advanced to the point where extending the lives of infected individuals to reach normal lifespans is within reach. We are not succeeding in the public or individual goals, and a major contributor to this failure is that we are not conducting routine opt-out screening for HIV.

Routine HIV testing, as recommended by the US Centers for Disease Control and Prevention (CDC),<sup>[1]</sup> has been endorsed by the American College of Physicians,<sup>[2]</sup> the American Congress of Obstetricians and Gynecologists, and many other professional societies.<sup>[3]</sup> Commonly reported barriers to testing include the perception that it is burdensome and difficult to integrate into the system of care. Fortunately, state laws have been changed to facilitate testing. Federal agencies (such as the Centers for Medicare and Medicaid Services) and departments (such as the US Department of Veterans Affairs) have changed rules and regulations to accommodate and reimburse routine testing.

It is now time for clinicians from all specialties to join the effort, and we invite you to participate in this educational activity. To help prepare you for taking an active role in rolling back the HIV epidemic, we have asked Drs. Cargill and Short to provide an overview of the current status of the HIV epidemic. The article describes the demographic characteristics of the most affected populations and highlights the disparities faced by many people at risk for HIV infection. It also explains the need to consider the possibility of HIV infection and to offer HIV testing to any of your patients, not just those with the well-known historically defined risk factors.

We would like to highlight some new data for you to consider as you read about the epidemiology of HIV in the United States and its implications for routine screening for HIV infection.

According to the most recent estimates, how many new HIV infections occurred in the United States in 2006?

- 1000-20,000
- 21,000-50,000
- > 50,000
- > 75,000

Relative to 1995, the number of new infections in the United States in 2005

- Declined to about half the 1995 levels
- Remained about the same.
- Rose 10%
- Rose 50%



## The Number of Undiagnosed HIV Infections Is Unacceptably High

At the end of 2006, 21% of the estimated 1,106,400 adults and adolescents living with HIV were undiagnosed.<sup>[4]</sup> Moreover, the distribution of undiagnosed cases is worrisome. Table 1 lists the numbers and rates per 100,000 infections of undiagnosed cases in various demographic categories. The rate of undiagnosed HIV cases among black/African Americans is 9 times higher than among whites (380.3 per 100,000 population vs. 42.2 per 100,000 population). The highest rate among any group was among black/African American males (556.5 per 100,000), followed by black/African American females (225.7 per 100,000). For Hispanic/Latinos, the estimated rate of undiagnosed HIV cases was 3 times higher than for whites.

**Table 1. Number and Rate of Persons  $\geq$  13 Years of Age Estimated to Have Undiagnosed HIV Infection, According to Race/Ethnicity and Sex**

Race/Ethnicity and Sex	Number	Rate Per 100,000 Population
<b>White</b>	72,000	42.2
Male	62,800	75.6
Female	9200	10.5
<b>Black/African American</b>	113,100	380.3
Male	77,500	556.5
Female	35,700	225.7
<b>Hispanic/Latino</b>	41,900	126.4
Male	34,700	201.6
Female	7200	45.2
<b>Asian/Pacific Islander</b>	4500	38.6
Male	3700	66.0
Female	800	13.2
<b>American Indian/Alaska Native</b>	1200	60.4
Male	848	87.4
Female	336	33.0
<b>Total</b>	232,700	94.2

Data from Campsmith ML, et al.<sup>[4]</sup>

Traditional risk-based testing has not worked to identify individuals with undiagnosed infection, and even many people with traditional risk factors remain undiagnosed (Table 2). Routine testing of everyone between the ages of 13 and 64 has a chance of reversing the trend and saving lives.

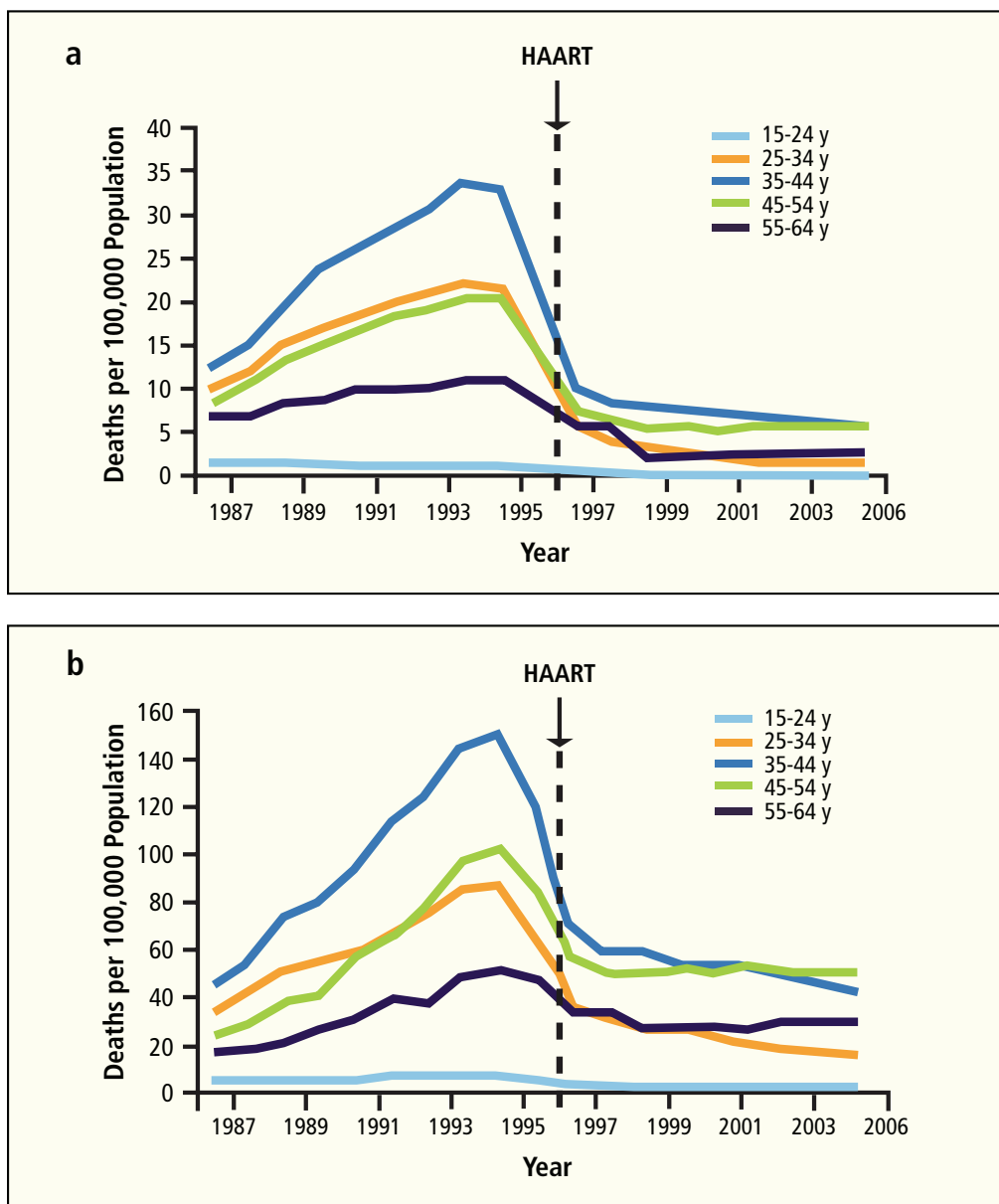
**Table 2. Number and Percentage of Persons  $\geq$  13 Years of Age Estimated to Have Undiagnosed HIV Infection, According to Age Group and Transmission Category**

Demographic Variable	Number and Percentage
<b>Age group</b>	
13-24 yr	23,100 (47.8)
25-34 yr	49,700 (28.4)
35-44 yr	76,100 (19.4)
45-54 yr	53,300 (16.1)
$\geq$ 55 yr	229,300 (19.1)
<b>Transmission category</b>	
<b>MSM</b>	124,900 (23.5)
<b>IDU</b>	
Male	19,000 (14.5)
Female	10,000 (13.7)
<b>MSM and IDU</b>	6700 (12.1)
<b>High-risk heterosexual contact male</b>	27,900 (26.7)
<b>High-risk heterosexual contact female</b>	42,700 (21.1)
<b>Other (hemophilia, blood transfusion, perinatal, unknown)</b>	1600 (17.6)

IDU = intravenous drug use; MSM = men who have sex with men  
 Data from Campsmith ML, et al.<sup>[4]</sup>

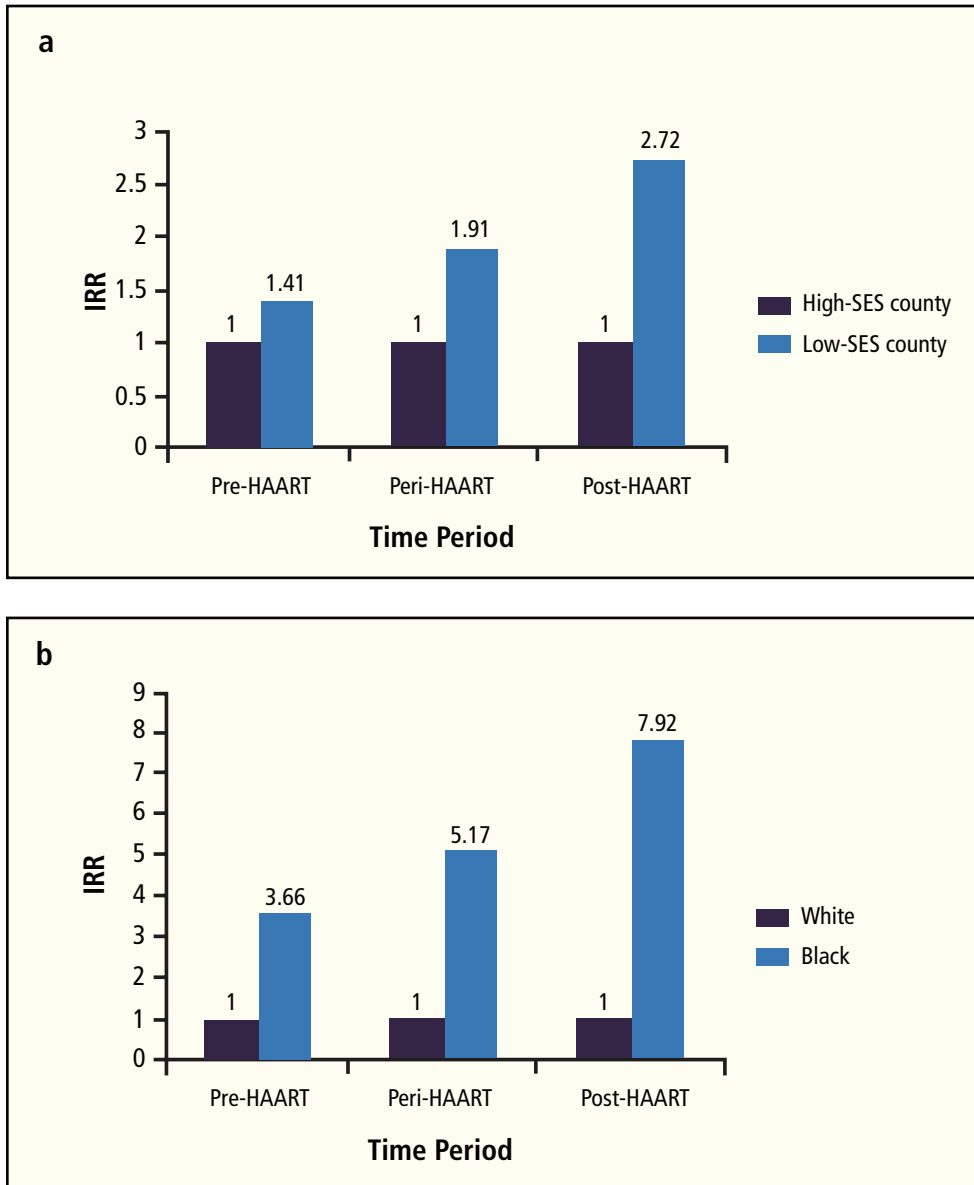
### HIV/AIDS Manifests Itself in the United States as an Example of Profound Healthcare Disparity

Not only do black/African Americans bear a greater proportional burden of undiagnosed HIV infections (see Table 1), they also bear a hugely disproportional HIV/AIDS mortality burden: 782% greater among blacks than among whites.<sup>[5]</sup> Not only were HIV/AIDS deaths significantly higher for blacks than whites in each age group, but the decline in HIV/AIDS deaths following the introduction of combination antiretroviral therapy was steeper among whites than among blacks (Figure 1).<sup>[6]</sup>



**Figure 1.** Deaths due to HIV/AIDS in whites (a) and blacks (b). Data are for deaths/100,000 US population age 15-64 years from 1987 to 2005. Data from Rubin MS, et al.<sup>[6]</sup>

This information can also be viewed from the perspective of the incidence rate ratio of death within high-socioeconomic-status vs low-socioeconomic-status populations, or among blacks vs whites in 3 separate time periods: before, during, and after the introduction of highly active antiretroviral therapy (Figure 2). Only by routine testing can we hope to reverse this major health disparity.



**Figure 2.** Incidence rate ratios (IRR) for low-socioeconomic-status (SES) and high-SES areas of the United States (a) and for blacks and whites (b) before, during, or after the introduction of highly active antiretroviral therapy. Data from Rubin MS, et al.<sup>[6]</sup>

## Late Presentation for HIV Management Continues to Occur

Data from 13 cohorts in the United States and Canada,<sup>[7]</sup> representing a total of 44,491 HIV-infected individuals, show that although CD4 count at first presentation has increased steadily between 1997 and 2007 (from 256 to 317 cells/ $\mu$ L), it remains below 350 cells/ $\mu$ L, the lower threshold for treatment initiation as recommended by the US Department of Health and Human Services HIV treatment guidelines.<sup>[8]</sup> These latest data confirm late presentation for initial care from a series of earlier studies, including from national studies performed by the CDC (median CD4 count of 170 cells/ $\mu$ L within 1 year of HIV diagnosis),<sup>[9]</sup> and smaller cohort studies from South Carolina (41% of AIDS cases diagnosed within 1 year of HIV diagnosis),<sup>[10]</sup> North Carolina (50% had a CD4 count < 200 cells/ $\mu$ L at first presentation),<sup>[11]</sup> Alabama (41% of new patients had already progressed to AIDS),<sup>[12]</sup> and Washington, DC (66% of AIDS cases were diagnosed within 1 year of HIV diagnosis).<sup>[13]</sup>

The demographic characteristics of newly identified HIV-infected individuals have changed between 1997 and 2007: The proportion of whites has decreased (from 30% to 24%), the proportion of women has increased (from 14% to 16%), and the median age has increased (from 40 to 43 years of age).<sup>[7]</sup> These data show that efforts to identify infected individuals earlier are working, but we need to intensify those efforts.

## Life Expectancy for Individuals Diagnosed With High CD4 Counts Approaches Normal

Van Sighem and colleagues<sup>[14]</sup> used an innovative approach to assess life expectancy of recently diagnosed HIV-infected individuals who remained off antiretroviral treatment for 24 weeks following diagnosis. The 24-week postdiagnosis median CD4 count in this population of 4612 Dutch patients was 480 cells/ $\mu$ L. Of these, 90.4% were in CDC stage A (asymptomatic). Of note, this population had little history of drug use (5.4%) or alcohol abuse (4.0%), and most were not co-infected with hepatitis B or C virus (88.5% and 81.9%, respectively). When the analysis was restricted to individuals with no CDC stage B event at the beginning of follow-up, the median number of years lived after age 25 years was 52.7 for men and 57.8 for women, compared with 53.1 and 58.1 for uninfected men and women, respectively. Thus, under ideal conditions, life expectancy for people infected with HIV is shortened by at most a few years. How this translates to populations with comorbid conditions remains to be seen, but nonetheless, van Sighem and colleagues' study<sup>[14]</sup> reaffirms the value of earlier HIV diagnosis. Complications of HIV can be prevented through earlier treatment.

## Treating HIV May Prevent Transmission

For HIV to be transmitted, it needs to be present in sufficient quantities within the transmitting medium, whether blood/plasma or genital secretions. Retrospective observational data indicating that transmission is significantly less likely to occur if the index patient receives antiretroviral therapy are accumulating.<sup>[15,16]</sup> While conclusions for benefit at the population level need to also consider other factors, such as potential behavior changes, potential transmission of drug resistance, and the likelihood that viral load is reduced in both genital secretions and blood compartments, a recently published analysis based on a prospective cohort with phylogenetic linkage analyses of transmissions within study participant couples yielded the most robust information on this question to date.<sup>[17]</sup> Among 3381 discordant couples in Africa, 349 individuals initiated antiretroviral therapy. A total of 103 genetically linked HIV transmissions were documented, and only 1 of these was from an individual receiving antiretroviral therapy (Table 3). This translates into a transmission rate of 0.37 per 100 person-years for antiretroviral-treated individuals and 2.24 per 100 person-years for those not receiving treatment -- a 92% reduction in risk for HIV transmission. The transmission rate was higher (8.79 per 100 person-years of follow-up) among individuals with low CD4 counts (< 200 cells/ $\mu$ L) not receiving antiretroviral therapy. This latter point is perhaps the most relevant to the issue of late diagnosis of HIV infection.

**Table 3. Use of Antiretroviral Therapy and Risk for HIV Transmission**

CD4 Stratum (cells/ $\mu$ L)	No ART/ Before ART			ART			Adjusted Incidence Rate <sup>a</sup>
	Trans-missions	Follow-up (Person-Years)	Incidence/100 Person-Years	Trans-missions	Follow-up (Person - Years)	Incidence/100 Person-Years	
Any	102	4558	2.24	1	273	0.37	0.08
< 200	8	91	8.79	0	132	0.00	0.00
200-349	41	1467	2.79	1	90	1.11	0.65
350-499	24	1408	1.7	0	30	0.00	0.00
$\geq$ 500	29	1592	1.82	0	21	0.00	0.00

ART = antiretroviral therapy

<sup>a</sup>Adjusted for time since enrollment.

Data from Donnell D, et al.<sup>[17]</sup>

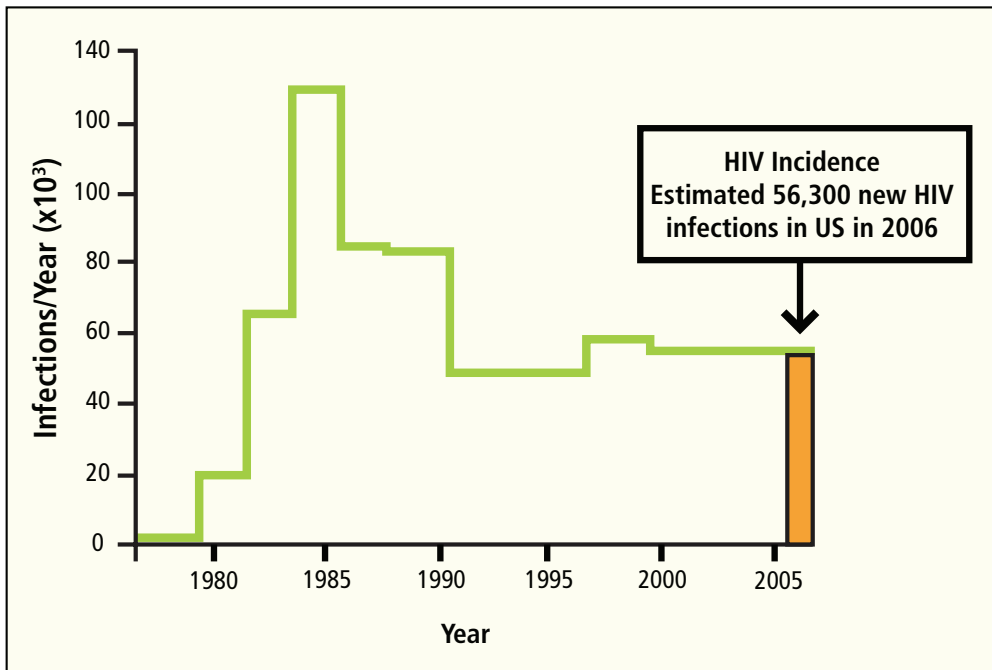
In summary, here a few key points as you consider your role in the effort to turn around the HIV epidemic in the United States:

- Most people discovered to have HIV in 2010 do not consider themselves to be at risk, underscoring the importance of opt-out testing for all patients.
- Late detection is a healthcare tragedy. The average CD4 count with entry to HIV care in the US is 300-350 cells/ $\mu$ L. That means almost half of the patients have already been committed to losing several years of life -- it is like telling a smoker to stop smoking next year.
- Early detection of HIV with treatment permits a nearly normal lifetime.
- Legislation is changing to support opt-out testing and remove the previous obstacles related to counseling, so more and more of your peers are conducting opt-out testing every day.
- HIV disproportionately affects people in poverty, but the Ryan White Care Act assures that the great majority get the drugs they need.
- Most people who know they have HIV infection are careful not to transmit the virus. Thus, HIV testing equals prevention.
- Most newly detected cases of HIV in the United States are poor, black, and/or gay, but risk-based testing has failed. Thus, the CDC advises testing everyone age 13-64 years.
- In people with HIV who are diagnosed early and treated successfully, probability of transmission is reduced by 90%-99%.
- If we had a vaccine that was as good as standard treatment for HIV for HIV prevention it would win a Nobel prize, but we need to find the patients.
- The rate of new HIV infections in the United States has not changed in 20 years. Don't just stand there -- do something.

## Introduction

In June 1981, reports from Los Angeles and New York began to describe previously healthy gay men presenting with *Pneumocystis carinii* pneumonia and Kaposi's sarcoma, both of which were unusual in healthy patients.<sup>[18]</sup> What was first recognized as a disease affecting primarily gay men quickly emerged as a global pandemic affecting men, women, and children of all races and ethnicities. Since those first reports, an estimated 1.7 million people in the United States have been infected with HIV, encompassing the more than 580,000 people who have died and 1.1 million that are estimated to be infected and alive today. Every 9.5 minutes, someone in the United States becomes infected with HIV.<sup>[19,20]</sup>

HIV incidence in the United States rose quickly and steeply in the early years of the epidemic, reaching its peak in the mid-1980s at an estimated 160,000 infections per year. Since that time, HIV incidence has declined significantly, but an estimated 56,300 new HIV infections still occur annually in the United States (Figure 3).<sup>[21]</sup>



**Figure 3.** Estimated new infections, extended back-calculation model in 50 US states and Washington, DC, 1997-2006. Data from Hall HI, et al.<sup>[21]</sup>

The new estimate differs from the earlier reporting of 40,000 new infections annually by the CDC, and is derived from a new national surveillance system based on new HIV infections.<sup>[22]</sup> In 2006, 73% of newly acquired HIV infections were in men, 53% were acquired through homosexual intercourse, and 45% were in African Americans.<sup>[21]</sup> These data reflect stability in the rate of new HIV infections. At the same time, however, they illustrate that the number of new infections remains unacceptably high and has continued despite improving trends in morbidity and mortality. Far too many people are at risk and are not being reached by prevention messages.

With advances in the diagnosis, management, and treatment of HIV infection, the disease has been transformed from a rapidly fatal illness to a chronic manageable disease. Yet, despite these successes, many challenges remain, including the marked disparities in the rates of HIV infection among racial and ethnic populations, marked disparities in disease progression and death, as well as the ongoing increase in HIV cases among men who have sex with men (MSM), women, and youth. The occurrence of new infections reflects the need to further reduce HIV transmission through many interventions, including awareness of one's HIV status.

## HIV Infection and Gender

Patients who know their HIV serostatus can take precautions to avoid transmitting the virus to others. This knowledge also allows individuals to establish a link to medical care and early interventions. Three decades after this syndrome was initially described, late diagnosis of HIV remains a substantial problem in the United States. The CDC examined data from 1996 to 2005 from 34 states with confidential name-based data on HIV and AIDS to determine the percentage of persons who received an AIDS diagnosis less than 3 years after receiving their initial HIV diagnosis<sup>[23]</sup>: AIDS was diagnosed in 38.3% of patients within 1 year of their HIV diagnosis and in another 6.7% 1-3 years after their HIV diagnosis. Clinical consequences of late HIV diagnosis have been defined and are well established. Individuals who do not begin antiretroviral therapy when indicated may forgo decades of life they might otherwise have had and give up the possibility of achieving a nearly normal lifespan.<sup>[24-26]</sup>

In 2006, 40.4% of the population age 18-64 years (an estimated 71.5 million persons) reported ever being tested for HIV infection, with 10.4% tested in the preceding 12 months. The CDC estimated that at the end of 2006, approximately 232,700 total persons, or 21%, infected with HIV were unaware of their infections.<sup>[27,28]</sup>

## CDC Recommends Opt-out HIV Testing

Recognizing that risk-based testing was missing many new diagnoses, the CDC revised the HIV testing recommendations on September 26, 2006.<sup>[1]</sup> The revised recommendations promote HIV testing of all patients age 13-64 years in healthcare settings, including hospital emergency departments, urgent care clinics, sexually transmitted diseases clinics, substance abuse treatment clinics, community clinics, correctional healthcare facilities, and primary care settings, as part of their routine medical care, regardless of risk factors; the recommendations also promote annual retesting if HIV traditional risk factors are present.<sup>[1]</sup> Pregnant patients should be tested regardless of other factors. There are some logical exceptions to this recommendation, including blood donors (because they are already tested), persons who have recently been tested and have no new risks, people already known to be positive, and people with terminal illnesses. In addition, testing is not cost-effective when the prevalence of HIV infection in that practice setting is known to be < 0.1%; the CDC makes an exception for this as well.

The CDC recommends eliminating requirements for consent to HIV testing and pretest counseling. This is a significant departure from previous policy recommendations. Specifically, this guidance is for "opt-out" testing, meaning that the patient is notified that the test will be performed unless the patient elects to decline or defer testing. Assent is inferred unless the patient declines testing.<sup>[1]</sup> It is important to note that these guidelines do not modify the existing guidelines concerning HIV counseling, testing, and referral for persons at high risk for HIV who seek or receive HIV testing in nonclinical settings (eg, community-based organizations, outreach settings, or mobile vans).<sup>[1]</sup>

In Washington, DC, where the seroprevalence is estimated to be 3%, the Department of Health launched an initiative in 2006 to promote routine opt-out testing with linkage to care immediately following an HIV diagnosis. A recent analysis comparing trends in testing as well as initial CD4 count at presentation provided encouraging results.<sup>[29]</sup> In 2004, 19,766 HIV tests were performed in DC. With the start of this campaign in 2006, about 35,000 tests were performed. By 2008, the number of HIV tests performed had substantially increased to 72,866 -- a 3.7-fold increase in the number of tests performed in DC during the 5-year period. CD4 counts among patients entering care for the first time were also higher after the 2006 program was implemented. In 2004, CD4 counts averaged 216 cells/μL; by 2008, the average was 343 cells/μL. These data reflect the benefits of implementing routine HIV testing.

Below we discuss the trends in HIV infection by age, gender, and race, with specific attention to the impact of HIV infection, the need for increased awareness of HIV risk, the role of HIV testing, and the challenges healthcare providers may encounter with specific populations.

## HIV Infection by Age Group

HIV infection has affected every age group in the United States. However, some age groups are affected more than others, and some age groups in the future will be affected in increasing numbers. For example, HIV in individuals over age 50 years will become of increasing importance as (1) the current HIV-infected population lives longer and (2) individuals become infected at older ages.<sup>[30,31]</sup>

## Children Under Age 13

In 2007, 159 children were newly diagnosed with HIV; most of these infections resulted from perinatal transmission.<sup>[19]</sup> Implementation of the recommendations for universal prenatal HIV testing, antiretroviral prophylaxis, elective cesarean delivery, and avoidance of breast-feeding has resulted in a 95% decrease in the number of perinatal AIDS cases in the United States since 1992 and a decline in the risk for perinatal HIV transmission from an HIV-infected mother to her child to less than 2%. The vast majority of perinatal HIV transmission in the United States in 2007 was due to lack of HIV testing in women.<sup>[32]</sup> Although great strides have been made in decreasing the number of perinatal HIV infections in the United States, significant challenges still must be addressed. In 1991, the number of perinatal transmissions peaked at 1650 cases and declined subsequently to the current level. This decline has been heralded as one of the great success stories in the field of HIV medicine. Although women in general have expressed support of the opt-out HIV testing recommendations, there are subpopulations of women who have yet to be reached or for whom access to health care services is difficult.<sup>[33]</sup> Healthcare services -- specifically those that will provide treatment to pregnant women who are also coping with drug addiction (alone or confounded by mental health disorders) -- are not available in all areas, and those that are available are often overwhelmed. As a result, pregnant women may wait longer to access prenatal care.

Stigma and discrimination also influence the decision to avoid or delay care.<sup>[34-36]</sup> HIV-associated stigma is linked to many poor outcomes, including depression, high-risk sexual behavior, suicidal ideation, and delayed seeking of care for women, especially African American women.<sup>[36]</sup> Opt-out testing can play an important role in decreasing the stigma of HIV testing.

Finally, some healthcare providers may not be aware of their specific state regulations regarding HIV testing in pregnancy.<sup>[37]</sup> To summarize, all pregnant women should be screened for evidence of HIV infection as early as possible in pregnancy. A second



HIV test during the third trimester of pregnancy, preferably before 36 weeks, should be considered for all pregnant women and recommended for women who meet certain criteria, such as being at high risk for acquiring HIV infection (eg, intravenous drug use [IDU], or the sexual partner of someone with IDU or an HIV-infected person), having symptoms of acute HIV infection; or other site-specific criteria that can be found in the CDC screening recommendations.<sup>[1]</sup>

## Adolescents and Adults Age 13-29 Years

Teens and young adults under the age of 30 continue to be at risk; those age 13-29 accounted for 34% of new HIV infections in 2006, the largest share of any age group.<sup>[38]</sup> Most HIV diagnoses within this age group can be attributed to sexual contact, with the median age of first intercourse being 16.9 years for boys and 17.4 years for girls in the United States.<sup>[39]</sup> These data are for those engaging in heterosexual sex contact. Adolescents and young adults who identify as gay or bisexual are exposed to many of the same risks as those engaging in heterosexual activity, but the risks of HIV acquisition within the MSM community continues to be higher when compared with the general population, and it is even higher in MSM of color.<sup>[40]</sup>

Race and ethnicity are associated with differing HIV infection/AIDS rates in this age group. For 2007, in the 34 states with long-term confidential name-based HIV infection reporting, 72% of HIV/AIDS diagnoses in 13- to 19-year-olds were in black/African American adolescents, yet only 17% of US adolescents 13-19 years of age were black/African American.<sup>[41]</sup>

Adolescents are particularly vulnerable to HIV infection because of their developmental stage, the decision-making processes they use, and their unique needs. All adolescents need social support, factual and nonjudgmental information, and safe environments for risk discussion and disclosure. Acquiring information about HIV risk reduction from a trusted source, involvement of peers, and information expressed in terms that are comfortable for teens is also essential.<sup>[42,43]</sup>

In 2007, 23% of high school students who reported sexual intercourse during the past 3 months drank alcohol or used drugs before last sexual intercourse.<sup>[44]</sup> Drug and alcohol use that occurs immediately before sexual contact is negatively associated with safer sexual practices occurring during the interaction. Providers can play an important role in emphasizing the importance of consistent condom use, despite use of drugs or alcohol before sexual contact. This is particularly important because a large proportion of youth are reported to simply not be concerned with becoming HIV infected.<sup>[45]</sup> For this age group, in particular, opt-out testing provides an opportunity to educate seronegative patients.

**Undiagnosed HIV alert.** According to the data reported by Campsmith and coworkers, individuals 13-24 years of age are particularly likely to have undiagnosed HIV,<sup>[4]</sup> with 47.8% in that age group being undiagnosed. The percentage for people 25-34 years of age was also very high, 28.4%.

## Adults Age 30-49

Adults age 30-49 accounted for approximately 54% of new HIV diagnoses in 2007.<sup>[19]</sup> The alarmingly high rate of infection within this age group may be due to a variety of factors, including lack of awareness of HIV status, as well as limited and inconsistent risk reduction counseling. A secondary data analysis from the 2004 Behavioral Risk Factor Surveillance System demonstrated that black and Hispanic women were more likely than white women to report a prior HIV test.<sup>[46]</sup> However, Hispanic women were more likely to have received follow-up condom consultation from a healthcare professional, while the increased HIV testing among black women did not correlate with increased condom consultation from healthcare professionals. Providers must use every available opportunity while delivering healthcare for the “teachable moment” to provide important HIV prevention messages, along with offering an HIV test.<sup>[47]</sup> Opt-out testing makes it easier to have these conversations with people who may not know they are at risk.

Particular populations within the 30-49 years-of-age group are at enhanced risk. In 2006, most new infections among white MSM occur among those age 30-39 years (4670), followed by those age 40-49 years (3740).<sup>[48]</sup> Although the rate of HIV infection in almost every other risk group has remained steady or decreased over the past decade, the rate of HIV infection within the MSM community has actually risen. Lack of awareness of HIV status, persistent unprotected anal intercourse, and substance use continue to drive infection rates.<sup>[48]</sup>

**Undiagnosed HIV alert.** According to the data reported by Campsmith and coworkers, individuals 35-44 years of age are less likely than younger individuals to have undiagnosed HIV,<sup>[4]</sup> but approximately 1 in 5 (19.4%) remain unaware of their infection.

## Adults Age 50 and Older

The number of older Americans who are living with and becoming infected with HIV is increasing. A disease that was once found almost exclusively among younger persons is now being recognized as an important public health concern among older adults. The guidance from the CDC recommends opt-out testing of individuals up to 64 years of age.<sup>[1]</sup> The American College of Physicians has largely endorsed the CDC recommendations but recommends testing for persons up to age 75 years.<sup>[2]</sup>

In 2005, persons age 50 and older accounted for 15% of new HIV/AIDS diagnoses.<sup>[49]</sup> Several factors account for the increase in HIV/AIDS cases in this age group. With the advent of combination antiretroviral therapy, and increased effectiveness of HIV management regimens, patients are living longer with HIV infection.<sup>[30]</sup> Older individuals continue to be sexually active, but may not be aware of their risk for HIV infection. Age may confer additional risk in some groups because of physiologic changes of aging (ie, menopausal women with increased vaginal thinning).<sup>[50]</sup> Finally, providers may underestimate their older patient's risk for HIV infection.<sup>[51]</sup>

This is further complicated by attitudes toward testing, where older individuals may both lack knowledge/awareness of HIV infection and fail to perceive themselves as being at risk. This is especially true for older women, who may not use condoms once they are past the childbearing years.<sup>[52,53]</sup> Thus, routine HIV testing is important in this age group. Furthermore, HIV infection must be included in the potential differential diagnosis of patients over age 50 who present with vague and protean symptoms, such as fatigue, weight loss, mental confusion, or increasing frailty.<sup>[54]</sup>

**Undiagnosed HIV alert.** According to the data reported by Campsmith and coworkers,<sup>[4]</sup> individuals 45-54 years of age have the lowest rate of undiagnosed HIV infection (16.1%), but that number rises again for older individuals ( $\geq 55$  years of age, 19.1%).

## HIV Infection and Socioeconomic Status

There is no question that HIV infection occurs across every racial and ethnic group and socioeconomic stratum in the United States. That said, there are also abundant data that HIV infection is a disease that disproportionately affects the poor and socially marginalized, making it yet another example of health disparity. Poverty is a major driver of the many health disparities, including HIV infection, with the link between poverty and HIV infection well documented.<sup>[55,56]</sup>

Nowhere is this association clearer than in the southern United States, where HIV infection rates have increased dramatically. This area has the most (1) new AIDS cases, (2) new AIDS diagnoses, and (3) AIDS deaths.<sup>[57]</sup> The Deep South (historically defined as southern states that actively promoted slavery and whose agricultural and economic base was in cotton) has over one third of the US African American population, and all 6 of the states constituting the Deep South are included among the 15 states with the highest AIDS death rates. The Deep South also has the lowest rates of educational attainment and high rates of people without health insurance coverage, poverty, and unemployment.<sup>[58]</sup>

Lack of educational attainment, unemployment and underemployment, incarceration, and limited or no health insurance all are products of poverty -- the final common pathway that links socioeconomic status and HIV risk. Limited educational attainment also includes limited health education and health literacy, a factor infrequently considered as a contributor to the disparity between whites and blacks with respect to HIV infection and its outcomes.<sup>[59]</sup>

Health insurance status also reflects socioeconomic status, which in turn affects ability to access good-quality healthcare, as well as when individuals enter care. Blacks with HIV/AIDS are more likely to be covered under Medicaid or be uninsured than their white counterparts.<sup>[60]</sup>

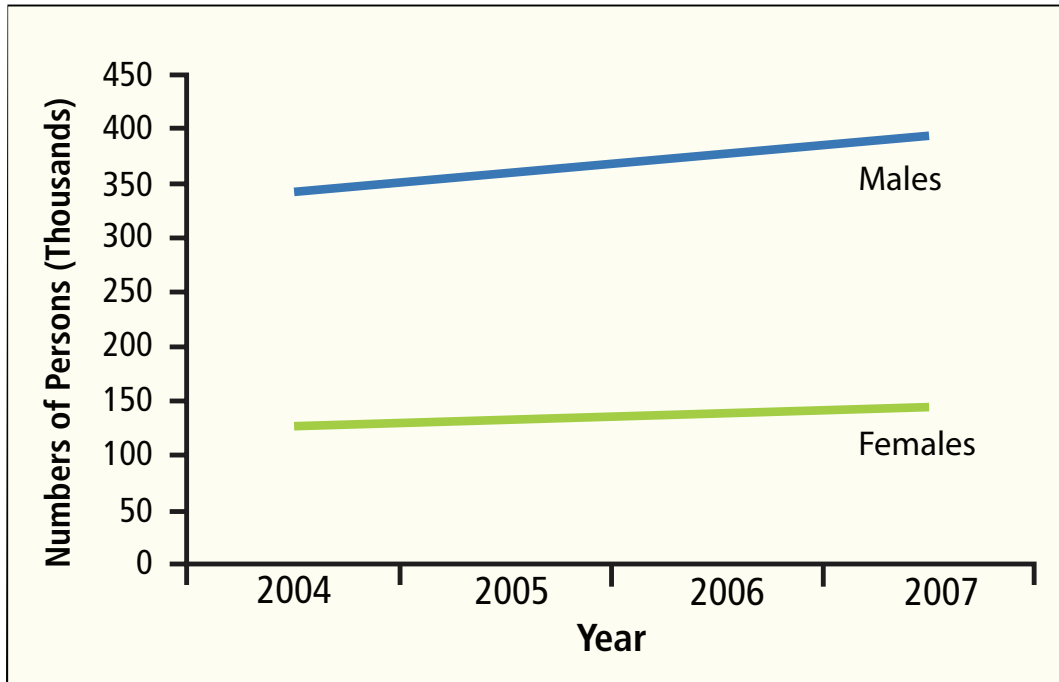
In the Deep South, blacks are 1.5 times more likely to lack health insurance compared with whites, and about half of blacks have incomes below double the poverty line.<sup>[58]</sup> These differences may profoundly influence how healthcare resources are apportioned and utilized and may have additional ramifications for those infected, such as postponing care and having lesser access to care.<sup>[61]</sup>

## HIV Infection and Gender

In addition to age and socioeconomic status, gender plays a significant role in the risk for HIV transmission. The term gender is used instead of sex because it refers to the socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for men and women.<sup>[62]</sup> This perspective is especially helpful when examining the impact of HIV infection on women, men, and transgender individuals.

### Women

The numbers of women living with HIV/AIDS increased steadily from 2004 to 2007 (Figure 4).<sup>[63]</sup> Women continue to make up a large proportion of cases of incident and prevalent HIV infections for many, including biological, societal, economic, and cultural.



**Figure 4.** Estimated numbers of adults and adolescents living with HIV/AIDS by sex, 2004-2007, from 34 states. Data from Centers for Disease Control and Prevention.<sup>[63]</sup>

Several studies of serodiscordant couples have shown the greater efficiency of male-to-female transmission than female-to-male transmission of HIV.<sup>[64,65]</sup> Although the vagina has several innate defense mechanisms, women are biologically at greater risk for HIV infection than men. Vaginal and cervical defenses can be overwhelmed by the presence of microscopic vaginal tears due to the trauma of sexual intercourse or by the presence of inflammatory or ulcerative vaginal infections (eg, bacterial vaginosis, herpes simplex virus infection, syphilis) that can increase the risk for HIV transmission.<sup>[66,67]</sup> Additional factors, such as female sex hormones, as well as components in semen, may also exacerbate or downmodulate HIV transmission.<sup>[68]</sup> Although a detailed discussion of the biological phenomenon underlying HIV transmission is beyond the scope of this article, these factors are worth noting. An in-depth examination of this issue can be found in a report on sex, gender, and HIV from the Forum for Collaborative HIV Research.<sup>[69]</sup>

Differences in age, race, and gender are associated with marked disparities in the rates of HIV infection among women. AIDS case rates vary widely for women by race. The rate in black/African American women is highest -- 39.8 AIDS cases per 100,000 women -- and is more than 20 times the AIDS case rate in white women (1.8 AIDS cases per 100,000 women) in 2007 (Table 4).<sup>[70]</sup> AIDS case rates for Hispanic/Latina women are almost 5 times that of white women, followed by Native Hawaiian and other Pacific Islander women at 7.1 AIDS cases per 100,000. American Indian/Alaskan Native women have AIDS case rates nearly triple that of white women. Age and race further confound the epidemiologic picture of HIV among women because higher rates of sexually transmitted infections (STIs) are found particularly among women of color and at younger ages. Thus, given the enhanced susceptibility to HIV infection in the presence of certain STIs, it is not surprising that HIV transmission is occurring at higher rates among women of color, especially at younger ages.<sup>[71]</sup>

**Table 4. Estimated Numbers of AIDS Cases and Rates for Female Adults and Adolescents in 2007 for 50 States and Washington, DC, by Race/Ethnicity**

Race/Ethnicity	Number of Cases	Rate (Cases/1000 Population)
American Indian/Alaska Native	46	5.0
Asian <sup>a</sup>	93	1.6
Black/African American	6243	39.8
Hispanic/Latina <sup>b,c</sup>	1452	8.9
Native Hawaiian/Other Pacific Islander	12	7.1
White	1600	1.8
Total <sup>c</sup>	9579	7.5

<sup>a</sup>Includes Asian and Pacific Islander legacy cases.

<sup>b</sup>Includes Hispanics and Latinas of any race.

<sup>c</sup>Includes 132 female patients of unknown race or multiple races.

Data from Centers for Disease Control and Prevention.<sup>[70]</sup>

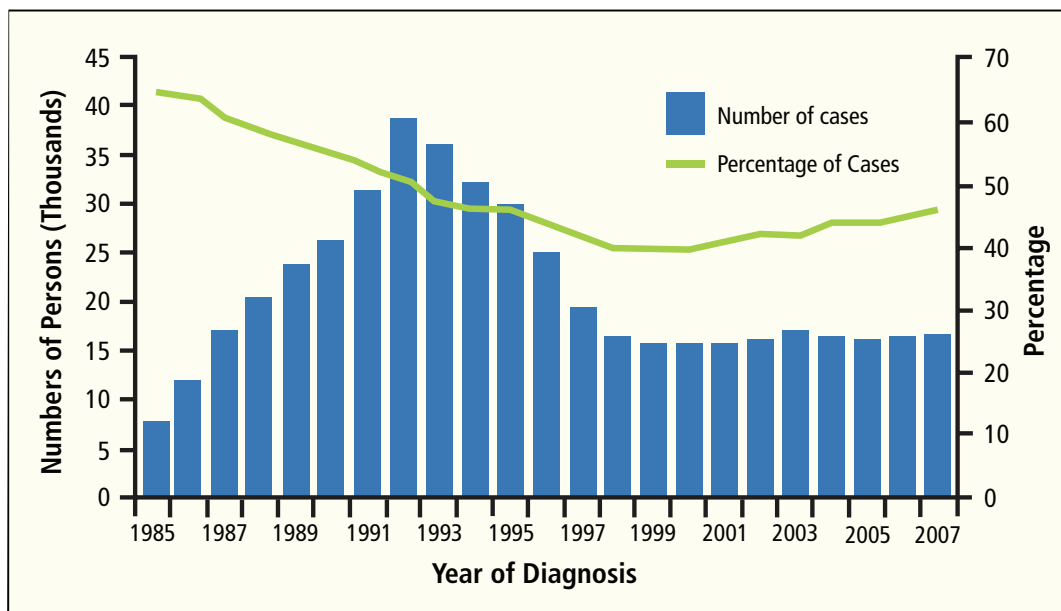
Different regions of the country reflect differing AIDS case rates, as more cases of AIDS in females are occurring in the South, especially for heterosexual women and African American women.<sup>[61,72]</sup> The synergistic effects of poverty and gender inequalities result in an ongoing vicious cycle, where poverty often limits educational attainment, and thus economic opportunities, trapping women in settings with power imbalances and the subsequent gender-based violence that often ensues.<sup>[73]</sup> Alcohol and drug use also play a significant role in HIV risk for women.<sup>[74]</sup>

To summarize, the intersection of race, gender, age, and socioeconomic status place women directly in the path of the epidemic, with no significant sign of reduction in the near future. Providers must seize the teachable moments in the clinical encounter to not only educate women about their risk for HIV infection but also determine their awareness of, and ability to use, barrier protection. Women presenting with STIs provide the opportunity to raise and explore HIV risk behaviors, HIV risk reduction, and, ultimately, HIV testing on an opt-out basis. Unfortunately, many women are unaware of their partners' risk for HIV infection (multiple sexual partners, sex with men and women, injection drug use).<sup>[61]</sup> Providers must be willing to explore potential barriers to condom use, recognizing that these may include physical violence and fear of abandonment. Women who engage in high-risk sexual behavior may do so because of financial dependence on the man, poor sense of self, and substance abuse issues.<sup>[75,76]</sup> Finally, HIV testing alone will not alter the course of the epidemic in women; however, HIV testing is an important adjunct to broad-based effective HIV prevention strategies, which also include safer sexual practices, knowing the HIV status of their partner, and attention to basic survival needs (eg, food and housing).

**Undiagnosed HIV alert.** According to the data reported by Campsmith and coworkers,<sup>[4]</sup> approximately 1 in 5 HIV-positive women (19.1%) are unaware of their infection.

## Men

From the beginning of the epidemic, MSM have been significantly affected by HIV infection. The reported cases of AIDS among MSM peaked in 1992 and then began to decline (Figure 5).<sup>[77]</sup> This downward trend, however, has recently been replaced by a leveling, then an increase, in reported cases, even as HIV infection rates have been decreasing in all other risk groups.<sup>[48]</sup>



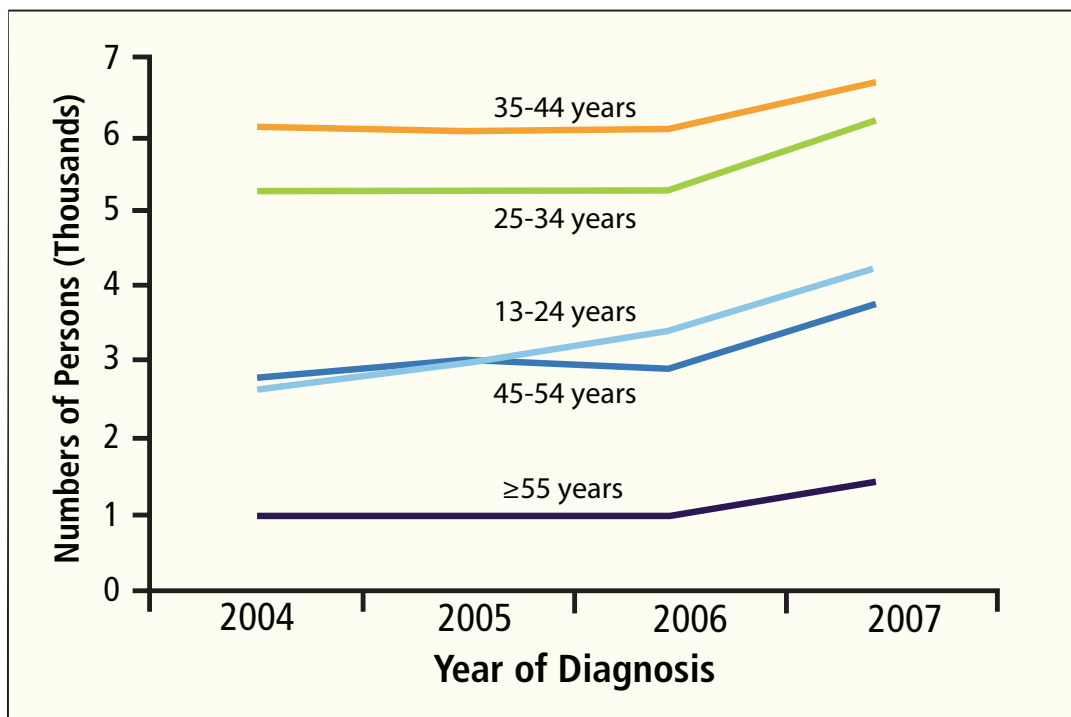
**Figure 5.** Estimated numbers and percentages of AIDS cases among men who have sex with men (MSM) 1985-2007. Data from Centers for Disease Control and Prevention.<sup>[77]</sup>

As the epidemic matured, heterosexual men became increasingly represented among the cases of HIV/AIDS among men, especially black heterosexual men. In 2006, gay and bisexual men of all races and black heterosexual men accounted for the greatest number of new HIV infections in the United States.<sup>[48]</sup>

The Baltimore Young Men’s Study, a venue-based sampling of young men in Baltimore, MD, provided a snapshot of the incidence and prevalence of HIV among young MSM. Clear disparities emerged:

The incidence varied from 0 among Hispanics to 11.0% per year for non-Hispanic blacks.<sup>[78]</sup> Additional data from the Baltimore Young Men’s Survey are more disconcerting -- the HIV prevalence was 12% overall, with a wide disparity among racial and ethnic groups studied. HIV prevalence ranged from 2.9% among non-Hispanic whites to 27.1% among non-Hispanic blacks, even though most of the participants reported a prior HIV test (78.9%). Ironically, the report of a prior HIV test was associated with a higher prevalence of unprotected anal intercourse in the antecedent 6 months. Over two thirds of these participants also reported sexual contact with both men and women.<sup>[79]</sup>

Surveillance data from the 34 states with confidential name-based HIV reporting demonstrate that HIV infection has continued to increase in every age group for MSM (Figure 6).



**Figure 6.** Estimated numbers of HIV/AIDS cases among men who have sex with men (adults and adolescents) by age group. Data from Centers for Disease Control and Prevention.<sup>[77]</sup>

There are many reasons for this increase, including prevention message fatigue, substance use (eg, crystal methamphetamine and sildenafil), and stigma.<sup>[80,81]</sup> The probability of high-risk sexual behavior (eg, unprotected anal intercourse) was associated with alcohol and drug use in the Baltimore Young Men's Study.<sup>[79]</sup> Multiple studies have demonstrated the risk for HIV infection associated with crystal methamphetamine use, alone or in association with other drugs.<sup>[82-84]</sup>

Evidence of increasing HIV infection rates has also been found in other ethnic populations within the larger MSM community. Asian and Asian Pacific Islander populations, as well as Native Americans, have shown increases in HIV infection. Data from a cohort of Asian Pacific Islander MSM demonstrate the impact of country of birth and circuit parties on unsafe sexual behavior; being born in America is highly associated with unprotected anal intercourse.<sup>[85]</sup> In Native Americans, sexual network and mixing patterns (including concurrency), as well as drug use, appear to drive the HIV disparities.<sup>[86]</sup>

Finally, the impact of HIV infection among heterosexual black men reflects the intersection of many epidemics, including substance use, STIs, and incarceration.<sup>[87,88]</sup> Substance use plays an important role as a facilitator of transmission not only because of disinhibition but also its role of sexual currency in drug transactions.<sup>[89,90]</sup> Focus groups with low-income black men confirm that substance use affects risk behavior and that prioritization of scarce resources may place procurement of drugs ahead of purchasing condoms.<sup>[91]</sup> Substance use is also highly correlated with incarceration, and rates of incarceration for drug offenses for black males increased as much as 707% between 1985 and 1995, compared with 306% for white males.<sup>[92]</sup> Incarceration becomes a destabilizing force in communities where 1 of 3 of the males is incarcerated during their lifetime.<sup>[93]</sup> This has ramifications in terms of partner selection, employment opportunities, and ultimately poverty, all drivers of sexual risk behavior.<sup>[94,95]</sup> HIV testing in incarceration settings is one way to not only identify those with HIV infection but also to intervene as prior inmates return to their communities. HIV testing in jails has been shown to be feasible, with enhanced delivery of test results, successful completion of HIV risk counseling, and modest impact on HIV risk behavior.<sup>[96]</sup> Opt-out HIV testing has proven to be feasible, with the highest rates of consent occurring among both male and female inmates who receive opt-out HIV testing within the first 24 hours of incarceration.<sup>[97,98]</sup> Such interventions are important in decreasing transmissions in communities where incarceration rates are high, especially among African Americans. Given the many missed opportunities for earlier diagnosis of HIV infection in this population, HIV testing within incarceration settings is not only feasible but also an important public health intervention.<sup>[99]</sup>

In summary, these data, while overwhelming, provide an important snapshot of HIV infection among different populations of men in the United States. These data also confirm the importance of accurately assessing risk behaviors in individuals and using opportunities that emerge in the clinical setting to review HIV risk, offer HIV testing, and counsel clearly and candidly about safer sexual practices. The Baltimore Young Men's Study also reinforces the importance of seeking descriptions of sexual behavior rather than labeling the behavior because over two thirds of the respondents reported sex with males and females. Having a prior HIV test was associated with higher rates of unprotected anal intercourse. Thus, HIV testing alone cannot and will not prevent HIV transmission. However, it can be an important adjunct to prevention, by linking those who infected with appropriate HIV care and treatment, as well as provide important opportunities to underscore and repeat important prevention messages.

**Undiagnosed HIV alert.** According to the data reported by Campsmith and coworkers,<sup>[4]</sup> approximately 1 in 5 HIV-positive men (21.7%) are unaware of their infection.

## Transgender Individuals

HIV infection rates among both male-to-female and female-to-male transgender individuals have been high. Although prior studies have focused on HIV prevalence rates among transgender sex workers, additional data continue to demonstrate high rates of HIV infection.<sup>[100]</sup> HIV prevalence was much higher in the male-to-female transgender persons (35%) than in female-to-male transgender persons (2%). Predictors of a positive HIV test result were similar to those in other groups: African American race, history of multiple sex partners; and history of injection drug use and low educational attainment were all independently associated with positive HIV status. One third of male-to-female and female-to-male transgender individuals reported prior suicide attempts, and over half of each group reporting depression.<sup>[100]</sup> Male-to-female transgender individuals are placed at risk for HIV infection through several factors, including IDU with needle sharing, limited housing and healthcare access, violence, stigma and depression.<sup>[101]</sup> Given the rates of high-risk sexual behavior and the involvement of many male-to-female transgender individuals in commercial sex work, the effect of efficiently delivered HIV testing could be substantial. In a study of rapid HIV testing delivered by community-based organizations for male-to-female transgender persons, conducted in Miami, Florida; New York, NY; and San Francisco, California, 12% of the 559 participants were newly infected with HIV. An HIV diagnosis correlated with age and a prior HIV test more than 1 year earlier.<sup>[102]</sup>

## HIV Infection by Race

The intersection of race with other factors in the HIV epidemic has already been covered. However, to review briefly, HIV infection has been reported in every racial and ethnic population of the United States. HIV is an important health problem for every racial and ethnic group, but specific populations have been disproportionately affected by HIV infection. Blacks and African Americans accounted for over half of the new HIV/AIDS diagnoses in 2007, with whites second at 29% and Hispanics/Latinos at 18%.<sup>[103]</sup> Asians ranked fourth at 1% of the estimated HIV/AIDS diagnoses, and Native Americans, Alaska Natives, Native Hawaiians, and other Pacific Islanders each made up less than 1% of the estimated HIV/AIDS diagnoses.<sup>[104]</sup>

Strictly reviewing the estimated HIV/AIDS diagnoses underestimates the effect of the disease in populations with relatively small numbers. Although the indigenous people of the continental United States are only 1.4% of the total US population, the rates of AIDS diagnoses in this demographic group have been higher than that for white persons since 1995.<sup>[104,105]</sup> Misclassification of Asians may lead to underreporting of actual HIV cases.<sup>[106]</sup>

Thus, given the social, cultural, contextual, and behavioral factors that influence HIV transmission, it is important to examine subgroups within racial and ethnic groups to better understand the factors that affect HIV transmission. These factors include age, gender, sexual behavior, substance abuse, and the many social determinants of health, such as poverty. Nevertheless, what remains is the clear need for all individuals, regardless of race, ethnicity, sexual orientation, or socioeconomic status, to know their HIV status. HIV testing, especially opt-out HIV testing, has proven feasible in many different settings and for all of these populations. The recent CDC guidance to promote HIV testing in a number of venues will enhance the capture of populations that are often missed or may fail to return for results.<sup>[1]</sup>

## Summary

Since the first reported cases HIV/AIDS manifesting as *Pneumocystis carinii* pneumonia in Los Angeles, the HIV epidemic in the United States has grown to include every racial and ethnic group; men, women, and transgender individuals; every age group; and every region of the country. Great strides in HIV care and management may have modified the profound suffering and death seen early in the epidemic, but there is no room for complacency. HIV transmission continues to occur, and the annual estimated 56,300 infections represent missed opportunities for effective prevention intervention. Routine HIV testing can offer a powerful tool in decreasing transmissions -- an important aspect of controlling the HIV epidemic. Through earlier diagnosis of HIV infection, there is the opportunity for earlier intervention for HIV care, which includes earlier treatment as well as ongoing education and support for reduction in HIV risk behavior. When these interventions include effective treatment and contextually appropriate HIV

prevention messages, they not only improve the prognosis for the individual but also can reduce the risk for ongoing transmission to others.<sup>[22]</sup>

Currently, 1 of 5 HIV-positive Americans is unaware of their HIV status. This translates into missed opportunities to link them to care and to educate the individual about preventing transmission to others. Given the facilitation of HIV transmission within social and sexual networks (especially among racial and ethnic populations), this lack of awareness continues to fuel the epidemic.<sup>[107]</sup> Providers have an important opportunity to educate and test patients for HIV infection during routine office visits, emergency department care, prenatal care, and well child visits -- essentially during any contact with the healthcare system. The revised CDC recommendations for HIV testing are designed to increase HIV screening of patients, including pregnant women, in healthcare settings; foster earlier detection of HIV infection; identify and counsel persons with unrecognized HIV infection and link them to clinical and prevention services; and further reduce perinatal transmission of HIV in the United States.<sup>[1]</sup> Prevention of ongoing HIV transmission will not be achieved, in the short term, with a single intervention or strategy. Ultimately it will require the interaction of many interventions to reduce transmission, from knowing one's HIV status, to adopting the necessary safer behaviors, to improving skills necessary to negotiate safer sexual and drug encounters. The common denominator among all of these factors is the provider, who can offer HIV testing, provide HIV education and information, support risk reduction, and alter the face of HIV infection in the United States, one patient at a time.<sup>[108]</sup>

## Post-Activity Self-Assessment

Because outcome requirements for continuing healthcare education have highlighted the need for performance change, we ask you to please take a moment to complete the brief survey again. This post-assessment survey will evaluate the likelihood of participants having confidence in applying the knowledge to clinical practice. Thank you for your participation.

*Do you routinely conduct opt-out screening for HIV for every patient age 13-64 years, regardless of perceived risk, and link HIV-positive individuals identified through screening to appropriate care?*

- No, and I do not intend to in the next 6 months
- No, but I intend to in the next 6 months
- No, but I intend to in the next 30 days
- Yes, and I have been for *less* than 6 months
- Yes, and I have been for *more* than 6 months

## Decision-Making (Pros and Cons)

The next section lists statements that represent different opinions about conducting opt-out screening in every patient age 13-64 years, regardless of perceived risk, and linking HIV-positive individuals identified through screening to appropriate care. We are not asking whether you agree or disagree with the statements. We are asking you to take a little more time to rate the importance of each in your decision to use this approach to HIV screening and linkage to care.

**If the statement does not apply to you, you should respond Not important.**

**Question: How important is each of the following in your decision about whether to conduct opt-out screening for HIV in every patient age 13-64 years, regardless of perceived risk, and link HIV-positive individuals identified through screening to appropriate care?**

*This approach reduces the likelihood that HIV-positive persons will transmit infection to others.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important



*This approach is uncomfortable for me because I don't know how to provide counseling for HIV-positive patients.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

*This approach decreases the stigma of HIV testing.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

*This approach could upset or offend patients.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

*This approach prevents HIV complications through earlier treatment.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

*This approach is too burdensome.*

- Not important
- A little important
- Moderately important
- Important
- Extremely important

**Confidence**

The next section lists situations in which some clinicians might not conduct opt-out screening in every patient age 13-64 years, regardless of perceived risk, and link HIV-positive individuals identified through screening to appropriate care. Please tell us how **confident** you are that you would conduct opt-out screening and link HIV-positive individuals to appropriate care in these situations.

*If the mechanisms are not in place for easy referral.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

*If my patient is resistant to screening.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

*If my peers aren't doing this.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

*If it is difficult to believe my patient is at risk.*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

*If it requires additional resources (eg, training or staff).*

- Not at all confident
- Somewhat confident
- Moderately confident
- Confident
- Extremely confident

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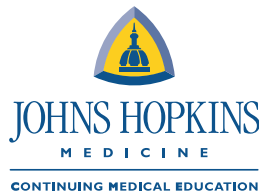
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