Report of the
New York City Commission on HIV/AIDS

Recommendations to make NYC
a national and global model for
HIV/AIDS prevention, treatment, and care

October 31, 2005

Table of Contents

Executive Summary

Our goal is to drastically reduce the spread of HIV and strengthen our response so that NYC is a national and global model for HIV/AIDS prevention, treatment, and care.

Despite substantial progress and excellent institutions, significant challenges remain. To reflect the dramatic changes in the epidemiology of the epidemic over the past quarter century, and to take advantage of new opportunities for synergy in prevention, treatment, and care, NYC must build on its strengths and update its approach.

We can drastically reduce the spread of HIV and significantly improve control of the epidemic if we:

- Increase the use of evidence-based prevention methods;
- Expand HIV testing to increase the proportion of HIV-positive New Yorkers who know their status and are receiving treatment and care; and
- Increase our focus on improving patient outcomes.

Recommendations on Prevention

To drastically reduce the spread of HIV, New York City must increase prevention activities that are effective and reach populations most at risk. Because almost all HIV infections in NYC occur through unprotected sexual intercourse or sharing of HIV-contaminated syringes, prevention efforts should concentrate on reducing these risky behaviors.

1. **Make condoms much more widely available.** Make male and female condoms easily available in a wide variety of locations, including AIDS clinics and community-based organizations (CBOs); drug and alcohol treatment programs, harm reduction programs, and syringe exchange programs; hotel rooms; public facility restrooms; bars and clubs; bathhouses and other commercial sex venues; movie theaters; schools; correctional facilities in New York State; hospital emergency departments, doctors' offices, clinics, and other health care facilities; beauty parlors, nail salons, and barbershops; laundromats; community centers; etc.
2. **Expand harm reduction programs.** Expand services and review and recommend revisions to city, state, and federal laws governing injection drugs, other drugs, and commercial sex work in order to reduce HIV risk and increase access to harm reduction programs. Expand low-threshold drug treatment programs that incorporate a harm reduction approach.
3. **Expand drug treatment programs and facilitate referrals.** Expand services including buprenorphine treatment and review and recommend revisions to city, state, and federal laws in order to improve access to drug treatment and HIV care and treatment programs. Fund and evaluate crystal methamphetamine and crack and powder cocaine prevention and treatment strategies.
4. **Expand Prevention With Positives initiatives.** Expand Prevention With Positives efforts led by HIV-positive people. Expand partner notification and counseling services.
5. **Improve HIV prevention among HIV-negative people with continued risk-taking behaviors.** Reduce risk behaviors among high-risk groups among men who have sex

with men (both gay- and non-gay-identified), women of color, adolescents, alcohol- or drug-using individuals, immigrants, individuals with recurrent sexually transmitted diseases (STDs), sex workers, and incarcerated and criminal justice populations.

6. **Expand social marketing programs that work.** Use City funding to create and disseminate effective social marketing campaigns.
7. **Improve HIV/AIDS health education in schools.** Update and revise the HIV/AIDS School Health curriculum and provide as part of comprehensive health education curriculum.
8. **Reduce HIV-related stigma in order to improve HIV prevention, testing, and treatment.**
9. **Evaluate prevention programs and expand those that work.**

Recommendations on Testing and Linkage to Care

Most new HIV infections are transmitted by people who are infected but unaware of their status. More timely diagnosis of HIV improves treatment and care of people infected with HIV, improves health outcomes, prolongs survival of people living with HIV, and reduces the spread of HIV. Making HIV testing a normal part of medical care and reducing HIV-associated stigma will increase the proportion of HIV-positive New Yorkers who know their HIV status. An estimated 1 in 4 New Yorkers living with HIV do not know that they are infected. Last year, more than 1,000 New Yorkers – 3 every day – found out that they had HIV when they were already sick with AIDS. NYC must remove barriers to HIV testing and expand testing availability.

10. **Increase voluntary HIV testing and linkage to care of those who test HIV-positive.**
    a. Advocate for the integration of HIV testing in normal medical care. Voluntary testing, availability of counseling, informed consent, right of refusal, confidentiality safeguards, and availability of anonymous testing must be preserved. No one should feel pressured into taking an HIV test based upon sociodemographic profiles or other factors, and medical care and other governmental and social services must not be denied to individuals who decline to be tested. Post-test counseling of HIV-positive persons should be strengthened to include explicit monitoring of referral to comprehensive health care.
    b. Ensure that reimbursement schedules maintain the existing testing and counseling infrastructure, which will be needed even more urgently in order to link newly diagnosed PLWHA to treatment and care.
    c. Increase citywide availability of HIV testing, especially rapid tests, in venues where high-risk populations can be found in order to encourage people who would not normally get tested to do so. Improve and expand partner notification.
    d. Support a high-visibility social marketing and media campaign involving cultural role models, elected officials, entertainers, athletes, activists, and other high-profile individuals who agree to be tested and to publicly describe the benefits to them of being tested; results of testing would of course be confidential.
11. **Monitor HIV testing closely**. Ensure, particularly with wider use of rapid testing, that all HIV tests are accurately performed and that confirmed positive results are

reported to existing surveillance systems while continuing to maintain strict patient confidentiality.

12. **Evaluate testing programs and expand those that are effective**.

Recommendations on Treatment, Care, and Coordination

NYC must enhance its systems in order to keep pace with increased caseloads, increased complexity of medical care, and unmet needs (particularly for housing and substance use and mental health treatment), and to continue to improve patient outcomes.

13. **Preserve and strengthen treatment, case management, and support services to further improve patient outcomes.** Continue to review and improve case management services provided by governmental and non-government entities.
14. **Increase housing opportunities and improve allocation based on client needs**. All housing programs receiving funding for HIV-positive persons should be required to ensure that residents receive appropriate health care and social services, low-threshold substance use treatment/harm reduction services, and other needed services. Alternatives to emergency housing placement locations (e.g., SRO hotels) should be found as quickly as possible. In the interim, social services and harm reduction services should be provided on-site or by referral. Address the needs of HASA-ineligible immigrant PLWHA.
15. **Expand mental health, behavioral health, and harm reduction services and co-locate them with HIV/AIDS care.** Expand mental health services and co-locate with medical services wherever possible, including, at a minimum, harm reduction providers and full-time mental health providers in all centers treating a large number of HIV-positive persons.
16. **Increase access to care by further improving health care worker and community staff training, enhancing patient education and empowerment, and disseminating information on service availability to PLWHA and service providers.**

Areas Requiring Additional Study

There are several areas on which the Commission is in general agreement, but acknowledges that additional review is needed in order to formulate recommendations. These include:

- Possible legislative changes to facilitate normalization of testing and counseling to make it a regular part of medical care, particularly with widespread adoption of new rapid testing technologies;
- Possible methods to improve case management, including establishing single points-of-entry, the use of patient registries, implementation of managed care models for delivery of health care, and changes to case management enabling legislation (i.e., Local Law 49 of 1997); and

- Specific city, state and/or federal laws that should be revised to promote the harm reduction approach to reduce HIV/HCV risk and improve access to treatment and care.
- Appropriate methods to improve diagnosis, treatment, and care of people in correctional facilities that address the specific needs of these individuals and their communities.

Introduction

Mayor Michael Bloomberg charged the New York City Commission on HIV/AIDS to build on existing strengths in order to make NYC a national and global model for HIV/AIDS prevention, treatment, and care. In the 1980s, NYC showed the world that gay men, intravenous drug users, and other high-risk individuals could change their behavior and thus reduce the spread of HIV.[1,2,3,4,5,6] In the 1990s, led by New York State's AIDS Institute in partnership with the HIV Planning Council and community-based organizations, New York demonstrated that it is possible to provide high-quality community-based primary care, mental health services, housing, and other support services for tens of thousands of PLWHA.

Despite substantial progress and excellent institutions, significant challenges remain. NYC continues to be the epicenter of the HIV/AIDS epidemic in the U.S., but is also a center for AIDS research in this country; we must take better advantage of these resources. There are more than 100,000 people living with HIV/AIDS (PLWHA) in NYC today, approximately 1 in 6 people living with HIV/AIDS in the United States.[7] Each year in NYC, there are still approximately 4,000 people newly diagnosed with AIDS and 1,700 deaths from AIDS.

In the 25 years since the emergence of HIV/AIDS, the epidemiology of the epidemic has changed dramatically. New York must update its approach to effectively address these changes. Increased use of evidence-based prevention methods, expanded voluntary HIV testing in order to increase the proportion of HIV-positive New Yorkers who know their status, strengthened linkage to and improved coordination of HIV/AIDS treatment and care, and improved patient outcomes can reduce HIV-related illness and death. We can significantly improve control of the HIV epidemic in NYC.

Evolution of an Epidemic

The first cases of what would become known as HIV/AIDS were reported in the United States in June 1981.[8] The first wave of the epidemic occurred largely among sexually active, gay-identified MSM, a group that then as now experiences extreme stigma and discrimination within our society. Subsequently, other groups such as people who use injection drugs (who are also highly stigmatized) and hemophiliacs who received blood transfusions became affected. Women have accounted for an increasing proportion of infections.

Although MSM continue to comprise the largest proportion of new HIV and AIDS diagnoses, the epidemic in NYC has increasingly affected other groups, many of which also face stigma and lack of access to health care. Racial/ethnic minority MSM in particular face a double burden of stigma.

Over the past two decades, New York City's epidemic has increasingly affected blacks (44% of AIDS cases in 2003 vs. 31% in 1987),[7,9] Latinos (32% of AIDS cases in 2003 vs. 25% in 1987),[7,9] women (31% of AIDS cases in 2003 vs. 12% in 1987),[7,9] and the poor. Today more than 80% of new AIDS diagnoses and deaths are among blacks and Hispanics, who comprise half of NYC's population. In 2003 among New Yorkers age 13 and older, 2.0% of blacks, 1.3% of Hispanics, and 0.7% of whites had been diagnosed and were living with HIV/AIDS. Black men are nearly 3 times more likely to be living with HIV/AIDS than other New Yorkers, with black men age 40-54 about 7 times more likely.

In addition, evidence suggests a resurgence of risky behavior among MSM both nationwide and in New York City.[10] The ongoing outbreak of syphilis among MSM suggests a significant increase in high-risk behavior. The majority of cases in the recent outbreak of lymphogranuloma venerem (LGV) were among HIV-positive MSM. Gonorrhea has been endemic in NYC's MSM community since the early 1990s. There have been increasing anecdotal reports of sexually transmitted drug-resistant *Staphylococcus* infections. Three behavioral risk surveys show recent unprotected anal intercourse (UAI) in 30-53% of respondents, and UAI was reported by 41% of HIV-positive MSM responding to the Computer-Assisted Behavioral Surveillance and Medication Adherence survey, a behavioral risk and medication compliance study of HIV-positive persons on antiretroviral therapy (ARV).

The percentage of all new HIV diagnoses that were among MSM increased from about a quarter to a third between 2001 and 2004, and the proportion of MSM cases among all males increased from 42% to 52%. Among MSM, new HIV diagnoses among whites increased from 35% to 41% between 2001 and 2004; in 2004 among MSM with new HIV diagnoses, 29% were among African Americans, 27% among Hispanics, and 3% among Asian MSM. The extent to which these trends reflect better access to HIV testing and/or more accurate ascertainment of risk behaviors in different groups is not known.

Drug use, particularly use of crystal methamphetamine, plays a significant role in facilitating HIV transmission within this community.[11] The recent case in NYC of a methamphetamine-using MSM who became infected with a multidrug-resistant strain of HIV with apparent rapid progression to AIDS is particularly troubling.[12]

Women are increasingly affected by HIV/AIDS, and women appear to be more vulnerable to HIV infection than men.[13] Early in the epidemic, about 1 in 10 New Yorkers with AIDS were women, with most infected as a result of IDU. In 2003, about 1 in 3 people diagnosed with AIDS were women, and more than two thirds with known risk factors had been infected with HIV through sexual intercourse with an infected male partner. More than 90% of NYC women newly diagnosed with HIV or AIDS are black or Latina.

In 2003, 34% of cases with a known risk factor in 2003 contracted HIV through IDU, down from 54% in 1993.[7,9]

Younger people are also increasingly affected by HIV/AIDS; the Centers for Disease Control and Prevention (CDC) estimates that half of new HIV infections in the United States now occur in people under age 25.[14] At the same time, there is an aging of the epidemic in NYC; between 1993 and 2003, the number of people with AIDS who are age 50 and older increased six-fold, and more than a quarter of PLWHA are now 50 or older.[15] Increased HIV prevention and care for elderly populations will be needed. As people are living longer with HIV infection, the proportion of deaths among PLWHA from non-HIV-related causes has increased from 7% in 1995 to 26% in 2003, indicating that medical needs of PLWHA increasingly include prevention and treatment for chronic diseases such as cardiovascular disease, drug and alcohol dependence, and tobacco use.

The HIV/AIDS epidemic has evolved in complex ways, and is likely to continue to evolve. New York City's population is also not static; enhanced surveillance will be critical to providing an up-to-date epidemiologic assessment and predicting the future course of the epidemic.

Some Areas Where We Have Succeeded

Annual AIDS deaths among New Yorkers have decreased 75% since the peak in 1994. Maternal to fetal transmission of HIV in NYC has been nearly eliminated, decreasing from 320 cases of perinatal HIV transmission in 1990 to 5 such cases in 2003.[16] HIV seroprevalence among IDUs has declined from an estimated 50% in the 1980s and early 1990s to about 13% today,[17,18,19] and the number of people diagnosed annually with AIDS from injection drug use has fallen by 89%, from 6,626 in 1993 to 760 in 2003.[7,20] Hospitalizations for AIDS-related causes in NYC declined by more than two thirds between 1995 and 2002.[21]

Modest reductions in mortality were achieved in the early 1990s due to improved prophylaxis of opportunistic infections. The most significant reductions in mortality can be attributed to the introduction and widespread access to protease inhibitors and antiretroviral therapy (ARV), also known as highly active antiretroviral therapy (HAART).

NYS has comprehensive Medicaid and AIDS Drug Assistance Program (ADAP) benefits. New York State created an enhanced Medicaid reimbursement rate system for HIV care, resulting in the establishment of dedicated HIV centers throughout the State and improving care for tens of thousands of PLHWA.[22] ADAP Plus covers comprehensive HIV primary care services and the treatment of both HIV-related and non-HIV-related illness. New York State's Home Care Program provides skilled nursing and home health services, intravenous medications and supplies, and medical equipment. The ADAP Plus Insurance Continuation Program (APIC) pays insurance premiums for PLWHA who have cost-effective insurance plans and cannot afford to pay the premiums. The State has implemented a unified approach to facilitate client enrollment; with one application, clients can enroll in ADAP, ADAP Plus, and the Home Care Program.

In collaboration with Designated AIDS Centers, community health care providers, consumers, and other health care advocates, New York State has one of the strongest fee-for-service Medicaid programs in the country for people living with HIV/AIDS and also has developed a voluntary Medicaid capitated managed care model focused on quality care for people with HIV. Unlike other jurisdictions, access to ARV in NYS is not affected adversely by age, gender, exposure category, race/ethnicity, or type of facility.[23,24]

In addition, there are hundreds of active, committed organizations providing effective services to people living with and affected by HIV and AIDS that also provide crucially important HIV prevention activities. These organizations and initiatives – large and small – operate throughout the five boroughs in the communities most affected by the epidemic, funded by federal, state, city, and private dollars. They are medical, cultural, legal, governmental, community-specific, and culturally competent organizations that form the fabric of the HIV/AIDS prevention and service community. In addition, many new initiatives, such as rapid testing, the expansion of syringe exchange and harm reduction, and focused activities within the health care and faith communities, are underway today.

However, the Commission does not intend that this report be primarily a document of our successes. It is instead meant to identify areas for improvement. It is also not an operational plan, but rather is a strategic framework from which such a plan will be developed. The implementation of the recommendations made in this report will be tracked.

Challenges: Areas Where We Must Do Better

Continued improvements in all aspects of our approach to the epidemic will be essential to build on our successes to date.

Prevent risk-taking behavior among people who are HIV-negative as well as among those who know they are HIV-positive.

Approximately 350,000 New York City adults age 18-64 engage in high-risk* sexual behavior.[25] Nearly 15,000 NYC public high school students report having sex before age 14.[26] In 2003, 48% of all NYC public high school students reported having sex, and 17% of public high school students have had sex with 4 or more partners. Among teen girls in NYC in 2003, there were about 25,000 pregnancies[27] and more than 10,000 reported cases of chlamydia and other sexually transmitted diseases.[28] Less than half of MSM report using condoms consistently, and more than a third of MSM who had three or more sexual partners within the past year do not use condoms consistently. As a result of these behaviors, far too many New Yorkers become newly infected with HIV each year.

Promptly diagnose HIV infection.

In NYC in 2003, there were approximately 4,000 new AIDS diagnoses, including more than 1,000 people who were not diagnosed with HIV until they were already sick with AIDS. Risk factors for late detection of HIV infection include being male, being Black, and living in Brooklyn.

More than a third of people newly diagnosed with HIV have either a CD4 cell count of less than 350 at the time of their HIV diagnosis or receive an AIDS diagnosis within one year of the HIV diagnosis. Approximately 1,000 New Yorkers – 3 per day – do not learn they are infected with HIV until they are already ill with AIDS. Since it takes on average 10-12 years from the time of HIV infection for a person's CD4 cell count to decline to less than 350,[29,30,31] many of these individuals had multiple opportunities to have been diagnosed and receive care to prevent their HIV from progressing, and may have been engaging in sexual or needle-sharing practices that resulted in preventable infections of their sexual or needle-sharing partners.

People with concurrent HIV and AIDS diagnoses have higher rates of illness, opportunistic infections, and death than those diagnosed in early stages of HIV infection.[32] HIV-infected persons who are aware they are infected are more likely to reduce behaviors that transmit HIV to others.[33,34,35,36,37] Many individuals with concurrent HIV and AIDS diagnoses have had multiple contacts with the health care system; if offer of testing had been a routine part of medical care, they would have been diagnosed and treated earlier, and thus would be healthier and fewer of their partners would have become infected.

There are many missed opportunities for HIV testing.[38,39] Until recently, more than 60% of people diagnosed with STDs and 90% of Rikers Island inmates were not tested for HIV.[28,40] In addition, 21% of New Yorkers who received standard (non-rapid) HIV tests did not return for their test results.[41] Testing of partners (spouses, sexual partners, or needle-sharing partners) of HIV-positive persons is the exception rather than the norm. Only 1 in 4 New Yorkers who test

* High-risk behavior defined in this survey as: 1) having 3 or more sex partners in the past year and not using condoms at last sex; *or* 2) using intravenous drugs; *or* 3) having been diagnosed with a sexually transmitted disease (STD) in past 12 months; *or* 4) exchanging sex for money or drugs; *or* 5) having unprotected anal intercourse.

HIV-positive provides the name of a partner through HIV partner counseling and referral services (PCRS),[42] and less than 20% of partners of PLWHA get tested through PCRS.

Link people newly diagnosed with HIV to care.

Many newly diagnosed HIV-positive individuals in NYC have no evidence of receiving care within the first year of diagnosis. HIV-positive persons with alcohol or other substance use problems or mental health problems, or who lack social support, are homeless, or are recent immigrants, are more likely to delay entry into care.[43,44]

Optimally treat and care for all of the more than 100,000 New Yorkers living with HIV/AIDS.

Despite the availability of free or low-cost drugs and medical care for New Yorkers with HIV/AIDS provided through the Medicaid-funded continuum of HIV services (including the HIV Special Needs Plans) and through ADAP, many who are in care are not receiving consistent care. We must continue to improve our monitoring of patient outcomes to ensure that PLWHA are receiving the best possible medical treatment and care.

Many organizations fund or provide HIV/AIDS services, including governmental (federal, state, city) and community-based providers. There is not uniformly sufficient communication, coordination, and information exchange among community-based organizations and primary care providers,[45] although there has been progress in this area.[46]

Broader Social, Political and Economic Context

This report and its recommendations focus on evidence-based activities proven to stop the spread of HIV and improve treatment outcomes. There are, of course, broader social, political, and economic forces (e.g., poverty, shortages of affordable and low-cost housing, empowerment of women, federal and state anti-drug policies) that result in health disparities and affect health generally and HIV/AIDS in particular. Addressing these broader social and economic forces can improve the health outcomes of people with HIV/AIDS and reduce new infections.

Lack of access to health care is an urgent national issue. Although New York City and State have addressed health care access through expanded public health insurance programs, more can be done to streamline and simplify enrollment in and access to these programs. Affordable private insurance opportunities for employees of small businesses as well as for individuals need to be expanded. Incentives to increase the proportion of employers doing business in or with New York City that provide health coverage to their employees should be explored.

The absence of systems to monitor and ensure the provision of effective preventive services, including HIV prevention, is another key barrier to improving health. Advocacy for broader policy changes such as universal access to quality health care, if effective, would have major health and social benefits.

In New York City, there are significant disparities in HIV-associated mortality.[47] About 20% of excess mortality in NYC is due to HIV, but substantial disparities continue to exist among neighborhoods and racial/ethnic groups in a broad variety of health measures, including HIV/AIDS, which is the leading cause of excess death in lower-income neighborhoods. Nationally, HIV prevalence among MSM tested in MSM-identified locations (e.g., bars/clubs,

community organizations, and street locations) was 46% among blacks, 21% among whites, 17% among Hispanics, and 15% among those who were multiracial or other race; of the nearly half of MSM previously unaware of their HIV infection, 64% were black, 18% Hispanic, 11% white, and 6% multiracial/other.[48] A recent study by the Rand Corporation indicates that beliefs within communities of color that HIV/AIDS is part of a conspiracy against them result in fear of testing, non-adherence to treatment, and barriers to prevention messages.[49] This must be addressed by actively involving community leaders and stakeholders to help mitigate conspiracy beliefs and engage their support for additional and non-traditional settings for prevention messages and community planning. Some HIV interventions rigorously studied early in the epidemic may not be transferable with the same results to communities most affected by the epidemic today, highlighting the need to try as well as evaluate new strategies. Additionally, culturally appropriate tactics need to be developed and expanded to most effectively reach some populations.

Addressing socioeconomic and psychosocial factors such as drug use, depression and other mental health problems, and domestic and sexual violence that contribute to risky behaviors would also significantly reduce the risk of HIV transmission.

In 2005, President Bush issued a set of principles to be followed in determining future federal HIV/AIDS funding under the Ryan White Care Act. Such changes would significantly reduce funding to NYC and other large cities that have invested heavily in HIV treatment and care. The Commission supports Mayor Bloomberg's letter expressing the City's concern about the stated principles.

HIV/AIDS Stigma

Stigma results in prejudice and discrimination directed at people perceived to have HIV or AIDS, and at the individuals, groups, or communities with which they are associated.[50] Although progress has been made in reducing HIV-related stigma, it remains all too common.[51] Prejudicial attitudes toward the lesbian/gay/bisexual/transgendered community appear to be the root cause of much HIV-related stigma; to reduce HIV-related stigma, homophobia in our society must be addressed. Stigma against injection drug users must also be addressed. Loss of social support, persecution, isolation, job loss, and problems accessing health services are still reported.[52] Women who disclose their HIV-positive status report rejection by family members, friends, health care providers, employers, and church members.[53,54,55]

Various approaches have been used to reduce HIV-related stigma. Historically, reduction in stigma for other infectious diseases can be traced to the availability of drugs that cured the illness or relieved the worst symptoms.[56] Introduction of quality HIV care reduced HIV-related stigma and increased voluntary counseling and testing in Haiti.[57] Contact with people living with HIV/AIDS, provision of information, and skills building are promising approaches to reduce negative attitudes toward PLWHA.[58,59]

Although the Americans with Disabilities Act protects HIV-infected people against discrimination (in housing, transportation, employment, and public accommodation), it cannot prevent HIV-related stigma. Reducing stigma around HIV counseling and testing is crucial to increase the proportion of HIV-positive New Yorkers who are aware of their status. While the New York State AIDS Institute studies reveal no barriers in the receipt of appropriate treatment

care among people diagnosed with HIV in NYC based on racial/ethnic, gender, or socioeconomic factors, barriers to testing in effect serve as barriers to treatment and care.

Stigma feeds upon, strengthens, and reproduces existing inequalities of class, race, gender, and sexual orientation.[60] Results suggest some stigma reduction interventions appear to work, at least on a small scale and in the short term, but many gaps remain.[58,61] In New York State, interventions against HIV-related stigma and discrimination are integral components of the comprehensive approach to HIV prevention, with multiple interventions employed at both policy and program levels to achieve maximum impact.[62]

Recommendations

The NYC Commission on HIV/AIDS has the following recommendations to further improve our response to the HIV/AIDS epidemic.

Prevention

Currently, almost all new HIV infections in NYC occur when an infected person shares bodily fluids with an uninfected partner via unprotected sexual intercourse or sharing of HIV-contaminated needles. Prevention efforts should concentrate on reducing these risk-taking behaviors.

The NYC Commission on HIV/AIDS makes 9 recommendations to better prevent HIV transmission in NYC:

1. Make condoms much more widely available.
2. Expand harm reduction programs.
3. Expand drug treatment programs and facilitate referrals.
4. Expand Prevention With Positives initiatives.
5. Improve HIV prevention among HIV-negative people with continued risk-taking behaviors.
6. Expand social marketing programs that work.
7. Improve HIV/AIDS health education in schools.
8. Reduce stigma associated with HIV in order to improve prevention, testing, and treatment.
9. Evaluate prevention programs and expand those that work.

1. Make condoms much more widely available.

Condom use decreases HIV transmission; consistent use of condoms among serodiscordant heterosexual couples reduces HIV incidence by 80%.[63] Increasing condom availability[64] in varied settings such as high schools, colleges, dry cleaners, hair salons, barber shops, and gyms increases condom use.[65,66,67,68] Providing an attractive and convenient means of carrying condoms has the potential to increase condom use.[69] Although condoms are effective in decreasing transmission of HIV and some other STDs, improper condom use is the most common cause of condom failure; education on proper condom use must be made available, especially to populations that have limited or no experience with condoms.

A randomized controlled trial in Latin America compared providing educational materials with providing condoms in hotel rooms and found that providing condoms was most effective in increasing condom use in both commercial and non-commercial sex.[70] Health promotional materials actually decreased the use of condoms in commercial sex and had no effect in non-commercial sex. Social marketing and free distribution of condoms can increase condom use.[68,71,72] Some countries have used local laws to require hotels and motels to provide customers with condoms or to make them easily accessible.[73,74]

Female condoms, which are made of polyurethane and placed inside the vagina, have been available since 1995 yet are underutilized in HIV prevention.[75] New York City currently distributes female as well as male condoms. The female condom is as effective as the male condom in the prevention of sexually transmitted diseases, including HIV.[76,77] Female condoms

may also be used by MSM as well as women for receptive anal intercourse*; they may be an alternative for risk reduction among MSM who have difficulty consistently using penile condoms.[78] Distribution of female condoms should also be promoted.

In the United States, the AIDS case rate among correctional inmates is 5 times that of the general population,[79] and AIDS is the second leading cause of death in U.S. prisons.[80] Studies of inmates in Florida over a 22-year period demonstrated that individuals who contracted HIV while in prison were more likely to have had sex with other men than to have used injection drugs,[81] indicating the need for availability of condoms in prisons and jails. Although condoms are currently provided in NYC jails, they need to be made more readily available; currently, condoms are not provided to inmates in correctional facilities outside of NYC.

Individuals are less likely to use condoms when under the influence of alcohol or drugs.[82,83] Syringe exchange and drug and alcohol treatment programs should include discussion of safer sex practices.

Continued social marketing and public-private partnerships to provide condoms at low or no cost, which have been successful in other areas as well as in NYC, will increase the availability and use of condoms.[67,68]

The NYC Commission on HIV/AIDS recommends that NYC greatly increase the availability of both male and female condoms in a wide variety of locations, including AIDS clinics and CBOs; drug and alcohol treatment programs, harm reduction programs, and syringe exchange programs; hotel rooms; public facility restrooms; bars and clubs; bathhouses and other commercial sex venues; movie theaters; schools; all NYC and NYS correctional facilities; hospital emergency departments, doctor's offices, clinics, and other health care facilities; welfare, food stamp, and day care eligibility offices; beauty parlors, nail salons, and barber shops; and community, youth, and senior centers. Information and resources should also be provided to individuals on proper condom usage and negotiating dynamics of condom use within relationships. Water-based lubricants should also be made widely available; in Amsterdam, for example, condoms and small packets of lubricant are packaged together for free distribution. NYC has recently expanded its program of lubricant distribution in conjunction with its condom distribution program.

The Commission also recommends that NYC and other public health organizations advocate for the media (print, broadcast, cable, and online) to reduce their self-imposed restrictions on condom advertising. Greater exposure to condom advertising and social marketing has been proven to increase condom acceptance and use and reduce not only HIV/AIDS transmission but also other sexually transmitted infections and unintended pregnancy. Other non-condom-based HIV prevention (e.g., vaginal microbicides[84]) should be assessed and adopted as their efficacy is demonstrated. Other woman-oriented prevention methods should be researched and implemented as efficacy is proven.

2. Expand harm reduction programs.

Harm reduction promotes safety and risk reduction in the ways people have sex and use drugs and has emerged as an effective response to the spread of infectious disease.[85,86,87] The harm reduction philosophy is not universally accepted in the United States despite its strong scientific basis,[85,87] but is a part of national policy in other countries, including the Netherlands, Germany, and the United Kingdom.

* The Aegis Barrier Pouch is currently under FDA investigation for use in disease prevention during anal intercourse.

Needle sharing consistently declines among attendees of syringe exchange programs.[88] Syringe exchange programs reduce transmission of HIV and hepatitis C virus (HCV) without encouraging substance use.[89,90] Harm-reduction-based methadone treatment, in which use of illegal drugs is tolerated, is strongly related to decreased mortality from both natural causes and overdoses.[91]

A harm reduction intervention study focused on black female crack users found that participants significantly reduced crack use and high-risk sex at each follow-up, but only the participants receiving harm reduction interventions improved their employment and housing status. Compared with other subjects at 6 months, participants receiving harm reduction services were less likely to engage in unprotected sex.[92]

A randomized clinical trial of harm reduction group therapy among methadone maintenance program participants demonstrated that individuals receiving harm reduction group therapy were more likely to be abstinent from cocaine and reported fewer unsafe sexual practices.[93]

In NYC, a collaboration between CitiWide Harm Reduction and Montefiore Medical Center using a physician as part of the outreach team to drug users in SROs resulted in a greater proportion of SRO residents having a regular health care provider and utilizing HIV-related medications.[94]

Co-locating a wound and abscess clinic with a syringe exchange program provided economical treatment and aftercare for injection-associated soft tissue infections and increased referrals to services such as HIV counseling and testing, medical care, and drug treatment.[95]

The NYC Commission on HIV/AIDS recommends that city, state, and federal laws governing injection drugs (e.g., heroin and methamphetamine) and commercial sex work be reviewed and revised to reduce HIV/HCV risk and improve access to harm reduction programs.

Low-threshold drug treatment programs that incorporate a harm reduction approach should be expanded. The Commission recommends that harm reduction and substance use education materials should be strengthened, particularly for younger people who use drugs. Physicians should receive better training in harm reduction and chemical dependency as well as support to facilitate improved provision of care for drug users. Funding should be provided to make medical care and behavioral health services available through syringe exchange programs. Testing for hepatitis B and C should be expanded and treatment provided.

In the past year, syringe exchange programs (SEPs) in NYC have been expanded to high-need areas in Queens based on high prevalence of injection drug use in those neighborhoods. An SEP opened in Long Island City in 2004, the first new program to open in NYC in more than a decade, and additional SEPs opened in Far Rockaway and Jamaica, Queens in 2005. SEPs require waivers from the NYSDOH and approval by Community Boards before they can begin providing services. The Commission recommends expanding the SEP program to additional neighborhoods that have a demonstrated need, that linkages to medical treatment and other services be strengthened, and that NYC provide direct funding for these programs. Establishing SEPs at HHC facilities, Article 28 facilities, and CBOs should be considered.

In 2000, the New York State Legislature changed the Public Health Law to authorize the Expanded Syringe Access Demonstration Program (ESAP), an important public health initiative that allows for the sale or furnishing of up to 10 hypodermic needles and syringes at a time without a prescription to persons 18 years of age or older. A licensed pharmacy, a licensed health care facility, or a health care practitioner who is otherwise authorized to prescribe the use of hypodermic needles or syringes within his or her scope of practice may provide needles or

syringes pursuant to this program, as long as they have registered with the state Department of Health. As of January 31, 2005, there were 2,789 registered ESAP providers in NYS, more than a third of which were located in NYC.

The NYC Commission on HIV/AIDS recommends reviewing and making permanent ESAP legislation to further expand ESAPs at licensed pharmacies, health care facilities (such as Article 28 facilities and affiliated CBOs, as well as Health and Hospitals Corporation facilities) and health care practitioners, as well as providing social marketing about ESAPs and to encourage and promote participation in the program.

The NYC Commission on HIV/AIDS also recommends expansion of training programs that educate law enforcement officials about appropriate treatment of participants in SEPs and ESAPs, including not arresting people for possession of syringes, as well as increased support for low-threshold substance-use treatment that incorporates a harm reduction approach.

3. Expand drug treatment programs and facilitate referrals.

Drug treatment can prevent the spread of HIV. Alcohol and drug use, along with a number of other mental and psychosocial issues, increase the risk of becoming infected with HIV.[96,97] Although there are excellent drug treatment programs in NYC, access and coordination among health care providers, case managers, and drug treatment providers need to be improved, and low-threshold drug treatment programs that incorporate a harm reduction approach need to be expanded.

Substance use is a significant problem for many PLWHA; about a quarter of non-HIV-related deaths among PLWHA in NYC are due to use of alcohol or drugs. Injection drug users (IDUs) are at extremely high risk of getting and spreading HIV. Crystal methamphetamine use is not only associated with increasing spread of HIV,[98] but can also reduce effectiveness of antiretroviral therapy and result in higher viral loads.[99] Both crack and powder cocaine continue to be a significant problem. A study of HIV transmission risk factors in homeless, chemically addicted, and mentally ill persons found that cocaine users were more than 3 times more likely to have shared needles than others.[100]

A Cochrane review* found that maintenance treatment for opioid-dependent IDUs was associated with significant reductions in illicit opioid use, drug injecting, and sharing of injection equipment.[101] Maintenance treatment is also associated with reductions in the proportion of IDUs reporting multiple sex partners or exchanging sex for drugs or money; a reduction in these risk behaviors reduces HIV transmission.

Some effective examples include Personalized Nursing LIGHT, a model that co-locates HIV treatment for HIV/AIDS with substance use treatment, which was effective in decreasing drug use and improving general health.[102] Integrated approaches can promote greater efficiency by improving communication and coordination among clients, providers, and government funding agencies.[103]

New York State's Substance Abuse Initiative co-locates HIV prevention and treatment in substance use treatment programs, including methadone maintenance treatment programs and residential and ambulatory treatment programs. The Initiative, which provides high-quality treatment for approximately 3,600 substance users with HIV in NYC, tested almost 20,000 individuals in 2004 with a seroprevalence rate of 4.4%.

* Cochrane reviews are comprehensive reviews of the medical literature and are based on the best available information about health care interventions.

The NYC Commission on HIV/AIDS recommends that city, state, and federal laws governing methadone be reviewed and revised to reduce HIV/HCV risk and improve access to drug treatment and HIV/HCV care and treatment programs. Use of buprenorphine, recently approved by the FDA use in the treatment of opioid dependency on an outpatient basis, has been proven effective and should be expanded by removing federal limitations on prescription to greatly increase the number of patients receiving buprenorphine by increasing the number of doctors certified to prescribe it.[104] Buprenorphine should be added to the ADAP formulary for opioid users who are HIV-infected.

Drug treatment programs and medical treatment services for persons who use drugs should be expanded so they have the capacity to serve anyone who seeks treatment (i.e., low-threshold drug treatment on demand). Substance use treatment and AIDS care services for drug users should be more tightly integrated. The number of specialized treatment slots should be increased; population-specific treatment slots also need to be developed and increased, particularly for the lesbian, gay, bisexual, and transgendered community; immigrants; and women, especially those with families. Pilot programs should be developed specific to treatment of stimulant use (e.g., cocaine, crystal methamphetamine). A central referral registry for drug treatment services, similar to the central registry currently available for mental health housing, should be considered.

4. Expand Prevention With Positives initiatives.

Further reduction of HIV transmission will require new strategies that focus on preventing transmission by HIV-positive individuals.[105,106] A multi-site survey of younger MSM in 6 urban locations nationally, including NYC, found an overall HIV prevalence of 12%, with 46% of participants reporting unprotected anal intercourse.[107] Another study of racially diverse men from New York and San Francisco found that 34% reported having unprotected anal intercourse with non-primary partners of unknown status.[108]

Safer-sex "fatigue" and treatment optimism are associated with high-risk behaviors such as "barebacking" (unprotected anal intercourse).[109,110,111,112] Unprotected anal intercourse is increasing among younger MSM in urban centers.[113,114,115] Despite declining syphilis prevalence in the general U.S. population, there have been recent outbreaks of syphilis among MSM, many of whom are HIV-infected; rates of gonorrhea and chlamydia infection have also risen in this population.[116,117,118,119,120,121] Bacterial and viral STDs are also increasing in HIV-infected men, reflecting an increase in risky behaviors.[122,123,124] Lymphogranuloma venereum (LGV) cases have been reported among HIV-positive MSM in the Netherlands;[125] in early 2005, New York City reported cases of the same serovar.[126] Rising STD rates among MSM increase the potential for HIV transmission due to risky behavior, and because other STDs have a synergistic effect on HIV infectiousness and susceptibility.[127]

For Prevention With Positives (PWP) interventions to be effective, both providers and PLWHA must be targeted for intervention. Clinicians often miss opportunities to provide PWP counseling.[128,129,130,131] Recent CDC guidelines suggest incorporating PWP protocols into routine medical care through behavioral and clinical risk factor screening at each visit.[132] Written clinic procedures improve delivery of PWP counseling in primary health care settings.[133] Brief safer-sex counseling by medical providers is feasible during primary care visits and reduces risky behaviors in PLWHA.[134,135,136]

Some effective examples include the WiLLOW Program, a sexual risk reduction and social network intervention targeted predominantly to black HIV-positive women in Georgia and Alabama, reduced risky sexual behavior and bacterial STDs among women living with HIV.[137]

The CDC identified a small-group, three-module intervention (Teens Linked to Care) for substance abusing youth living with HIV/AIDS that reduced unprotected sexual intercourse and drug use and improved physical and mental health outcomes.[138] A more cost-effective version of the intervention with telephone and in-person delivery was also effective in reducing unprotected sexual intercourse.[139]

Options, a clinician-initiated model developed by the University of Connecticut Center for Health/HIV Interventions, is a promising intervention for integrating prevention into routine HIV care and can reduce transmission risk behavior among PLWHA.[140] In 2004, the NYSDOH initiated Options New York as a demonstration project to evaluate its feasibility and effectiveness when implemented as a routine component of the HIV medical visit. Demonstration programs currently operate at three sites, and if shown to be effective in practice, the NYSDOH AIDS Institute will expand the program to facilities receiving New York State or Ryan White CARE Act funding for HIV clinical services.

The national "HIV Stops With Me" campaign, which has recently been introduced in New York City, is an example of a social marketing effort that uses HIV-positive spokesmodels, a website (www.hivstopswithme.org), newspaper and magazine ads, postcards, billboards, transit media, and other approaches to support HIV-positive people in their efforts to be leaders in HIV transmission prevention. Different aspects of the campaign focus on men, women, and transgendered persons. Preliminary evaluations of this program show success, but to date there have been no peer-reviewed studies published to confirm these findings.

The CDC's Diffusion of Effective Behavioral Interventions (DEBI) project, developed in coordination with Center on AIDS & Community Health at the Academy for Educational Development, brings science-based, community- and group-level HIV prevention interventions to community-based service providers and state and local health departments. The goal is to enhance the capacity to implement effective interventions at the state and local levels, to reduce the spread of HIV and other STDs, and to promote healthy behaviors. The Latino Commission on AIDS is in the process of adding stigma reduction modules to its DEBI programs.[141]

The NYC Commission on HIV/AIDS recommends that HIV prevention and care programs promote disclosure of HIV status to partners wherever possible, realizing that disclosure in some situations may involve personal and physical risk for individuals and thus may not be immediately possible. Without endangering the lives of PLWHA, disclosure of HIV status should be promoted as part of changing community norms around disclosure and HIV stigma, and because false assumptions about serostatus can lead to increased transmission.

Partner notification (also known as contact notification) is an important but underutilized mechanism to prevent HIV transmission. Many HIV-positive individuals cooperate in partner notification and contact tracing.[142,143] This is an effective prevention strategy,[144,145] especially when targeted to primary HIV infection. Partner counseling and notification programs in North Carolina proved effective in identifying previously untested individuals who were HIV-infected.[146] Innovative e-mail and internet-based approaches to "disclosure assistance" used by the San Francisco and Los Angeles Departments of Health show promise.[147,148] Partner notification is more effective when conducted by public health officials than by the infected person or by the patient's physician.[149,150,151] Enhanced partner notification strategies must be designed in collaboration with the HIV/AIDS community to ensure that the safety and rights of

PLWHA are maintained. The NYS DOH AIDS Institute has published a guide for individuals to assist in the process of serostatus disclosure,[152] and the NYC DOHMH has recently issued updated physician guidelines on HIV/AIDS reporting and partner notification.[153]

Although Prevention With Positives initiatives are still relatively new and have not been extensively evaluated, they nonetheless are promising and should be increased in NYC, with efforts focused on HIV-positive people who engage in persistent risky behavior. These programs should address mental health, substance use (including crystal methamphetamine use) and other barriers to safer behaviors while being sensitive to stigma issues. New training courses were developed by AI in 2004 to help health and human service providers address prevention with HIV-infected individuals, and cover psychosocial issues, provider beliefs and values, disclosure assistance, prevention strategies, and interventions and resources for prevention with positives. Openly HIV-positive persons in high-visibility leadership positions should be encouraged to participate in and lead Prevention With Positives initiatives. Outreach to medical providers, community-based organizations, and other groups should emphasize the importance of condom use, clean needles, and partner notification in preventing ongoing HIV transmission.

5. Improve HIV prevention among HIV-negative people with continued risk-taking behaviors.

Culturally specific or subpopulation-directed HIV prevention models are more effective than general approaches. In one study, print media reached the greatest number of women, but outreach activities were better at communicating with subpopulations of high-risk women who exchanged sex for money or who had STDs.[154] Effective approaches directed at drug users,[155,156] heterosexual men,[157] adolescents,[158] older women,[159] and MSM[160] have also been described. Community-level interventions aimed at decreasing high-risk behavior among MSM were at least as effective as small group and individual level interactions and interventions that focused on promoting interpersonal skills. Social marketing campaigns encouraging condom use have been successful.[67,74,161,162]

Improved control of sexually transmitted diseases (STDs) is also important to reducing the risk of HIV transmission. STDs, particularly genital ulcers (e.g., chancroid, syphilis, genital herpes), but also the more common non-ulcerative STDs (e.g., chlamydia, gonorrhea) enhance sexual transmission of HIV.[163,164] Genital ulcers (mainly chancroid) can increase the likelihood of HIV transmission during a single sexual act by a factor between 10 and 100. Recent infection with herpes simplex virus type 2 (HSV-2), the most common cause of genital ulcer disease, is associated with an increased risk of HIV infection.[165] People who are immunocompromised have more genital ulcers;[166,167] this probably increases their infectiousness during sexual intercourse.

Gonorrhea and chlamydial infection are less likely than genital ulcers to result in HIV acquisition in women. However, these STDs are far more common than genital ulcers, so their contribution to the heterosexual spread of HIV may be greater.[168] Several studies have found that genital shedding of HIV is greatly enhanced in the presence of urethral, cervical, or vaginal inflammation.[169,170]

Effective screening, diagnosis and treatment of STDs can reduce the sexual transmission of HIV. Prevention efforts should also ensure that all individuals with STDs are offered counseling and testing for HIV.

NYC should continue to target high-risk groups among MSM (both gay- and non-gay-identified), women of color, adolescents, alcohol- or drug-using individuals, immigrants, individuals with recurrent STDs, sex workers, and incarcerated and criminal justice populations

through culturally relevant social marketing programs with evidence-based HIV prevention messages and strategies. Outreach should also include sex and needle-sharing partners of IDUs. There needs to be a greater emphasis on risk reduction strategies in counseling for high-risk individuals. Issues related to treatment optimism need to be explored within the context of prevention activities, particularly among adolescents. The CDC's DEBI project, also used in programs targeted to people with HIV infection, is a model that can be used to strengthen CBO-based prevention programs for high-risk persons.

Syringe exchange programs and ESAPs should be expanded. Substance use treatment for opioid dependence should be increased to reduce injection drug use and prevent intranasal users from transitioning to injection use. Crystal methamphetamine prevention and treatment strategies should be evaluated and funded, as should strategies to address the continuing problem of cocaine, particularly crack cocaine use. HIV prevention programs should be funded for both HIV-positive and HIV-negative drug users.

6. Expand social marketing programs that work.

Social marketing programs, which use sophisticated consumer marketing techniques to "sell" ideas, attitudes, and behaviors, can increase availability, sales, and use of condoms, as well as knowledge and awareness of the role of sexually transmitted diseases in spreading HIV.[171,172,173,174,175,176] Social marketing involves in-depth consumer research to understand and address the needs and desires of target audiences. Since 1985, the CDC has provided funds for HIV prevention programs with a requirement for review of all materials. In 1992, the CDC published HIV content guidelines that prohibit the use of CDC funds for AIDS prevention programs that develop educational and related program materials perceived to directly promote or encourage sexual activity (homosexual or heterosexual) or intravenous substance use.[177] The CDC guidelines require that messages emphasize sexual abstinence except in a mutually monogamous relationship with an uninfected partner. .

Many organizations contend that these guidelines prohibit social marketing of HIV prevention messages that would be most effective in reaching the highest-risk individuals and groups. In major metropolitan areas such as New York City, non-monogamous sexual relationships are relatively common among young unmarried heterosexuals and MSM. HIV prevention materials that promote monogamy tend to lack credibility with these audiences; sex-positive HIV prevention messages are likely to attract greater consumer attention. The focus on IV drug use in and of itself ignores that HIV risk derives from the *sharing* of contaminated injection equipment, and also disregards the role of non-IV injection drug practices (e.g., intramuscular steroid injections) and non-IV drug use (e.g., crack cocaine and crystal methamphetamine) that increases HIV transmission risk. Targeted campaigns to Latino/Latina and other non-English-speaking communities should involve community leaders and stakeholders to engage their support, and should be culturally sensitive and not merely translations of English-language campaigns. Hearing-impaired individuals will need targeted campaigns that use sign language interpreters to assist with HIV educational initiatives.

Given such proposed federal restrictions on HIV prevention programs, the NYC Commission on HIV/AIDS recommends that City funding be used to create and disseminate evidence-based social marketing campaigns, particularly for programs and populations that are not reached through federal and/or state support.

7. Improve HIV/AIDS health education in schools.

NYC's HIV/AIDS health education school curriculum was last revised in 1994. It is currently being updated by individuals from the Department of Education and DOHMH along with parents, community members, and other concerned individuals. The current plan is to update only the scientific basis of the curriculum, not to change the manner by which the information is taught.

Sex education and HIV education and intervention programs can reduce unprotected sex by delaying initiation of sex, reducing its frequency, and/or increasing condom use.[178,179,180,181,182] Some effective examples include "Safer Choices," a behavioral-theory-based HIV, STD, and pregnancy prevention intervention. This curriculum has been shown to delay onset of sexual activity in certain racial/ethnic subgroups,[183] increase condom use school-wide,[184] decrease the number of partners, decrease frequency of unprotected sex, and be cost-effective and cost-saving.[185] The Rochester AIDS Prevention Project for Youth (RAPP), a middle- and high-school-based HIV and sexuality intervention program, is effective in delaying onset of intercourse and risky sexual behavior, most significantly among middle school females.[186]

The NYC Commission on HIV/AIDS recommends not only a scientific and medical update of the HIV/AIDS curriculum, but also revision to include behavioral interventions that have been shown to be both effective and cost-effective in preventing HIV infections among youth. Currently, the NYC public school system does not fully comply with statewide and citywide AIDS education mandates;[187] adequate personnel and other resources are needed to ensure proper implementation of HIV/AIDS education in the schools. Condom availability in schools should be implemented as per long-standing policy, and this implementation should be monitored. Condom availability programs and demonstrations of proper condom use that have an evidence base of effectiveness could improve safer sex education. Parents, communities, and the Department of Education's Community Education Councils must be involved so that any programs established as part of the curriculum will appropriately address community concerns and can be implemented effectively. CBO participation in school health education activities should be explored to determine whether they can effectively supplement school-based programs.

8. Reduce HIV-related stigma in order to improve HIV prevention, testing, and treatment.

HIV-related stigma can discourage HIV test-seeking behavior, reduce willingness to disclose HIV status, health-seeking behavior, and treatment adherence, and can reduce the quality of health care received and social support solicited and received.[188,189,190,191,192,193] Social stigma continues to contribute to non-disclosure of HIV diagnosis,[194] which can lead to increased transmission. The NYC Commission on HIV/AIDS recommends the adoption of evidence-based programs to reduce stigma related to HIV that involve public education about HIV/AIDS, incorporate skill building exercises, and address social issues.

Because of the stigma of an HIV-positive diagnosis, people are often reluctant to be tested.[195,196] More than one third of all respondents in a 1999 national telephone survey reported that concerns about AIDS stigma would affect their own decision to be tested for HIV.[197] Normalizing testing and making it a standard part of medical care can reduce stigma and other barriers to testing.

The New York State AIDS Institute's Project WAVE (War Against the Virus Escalating) addresses stigma and discrimination and encourages testing in communities of color by making it

available at non-traditional venues using radio advertisements, celebrity promotion, and free concert tickets. More than 6,000 New York State residents have been tested for HIV through this initiative since its introduction in 2001; the program should be evaluated as a model to potentially replicate and expand.

The influence of celebrities and other role models should not be underestimated. After Magic Johnson made his announcement that he was HIV-positive, there was a significant increase in the level of accurate knowledge among individuals, the number of persons getting tested for HIV, and the desire for people to obtain more information about HIV and AIDS.[198,199,200] Announcements around the same time about his wife and baby, who tested negative, had a significant effect on increasing the numbers of women tested during pregnancy.[201]

The NYC Commission on HIV/AIDS recommends harnessing the power of celebrities and other role models in launching social marketing campaigns targeted to high-risk populations to reduce the stigma of HIV testing and increase the number of people tested. Key national and local elected officials, clergy, community leaders, athletes, musicians, actors, and others would be asked to voluntarily be tested as part of the media campaign. The results would, of course, be kept confidential unless disclosed by the person tested.

9. Evaluate prevention programs and expand those that work.

The NYC Commission on HIV/AIDS recommends that NYC improve evaluation of current and potential HIV prevention strategies and intervention models, in particular those targeted to specific high-risk groups (e.g., MSM, IDUs, women of color). Potential future strategies should be evaluated in order to increasingly allocate and prioritize funding and resources based on needs, gaps, and evidence of efficacy. The development of new, innovative, and intensive HIV prevention strategies should be promoted, particularly those that address the role of substance use and mental health issues, including through partnerships with academia. Funding sufficient to properly evaluate prevention programs must be included in program budgets.

Testing and Linkage to Care

More timely diagnosis of HIV is crucial because, while all new HIV infections are transmitted by people who are HIV-positive, most are transmitted by people who are unaware of their status.[202,203] Increasing the proportion of HIV-positive New Yorkers who know their status and who are in effective care will not only improve the health of the approximately 20,000 New Yorkers living with undiagnosed HIV infection, it is also most likely the single most important way that NYC can reduce the spread of HIV. Testing is integral to a coordinated approach to improve control of the epidemic, provided that there is linkage to care for those who test positive. Although some HIV-infected persons continue to engage in behaviors that place others at risk for HIV infection,[204,205,206,207,208,209] HIV-infected persons who are aware of their HIV status generally reduce risky behavior.[33,34,35,36,210]

On average, people do not show signs of AIDS for 10-12 years after HIV infection.[29,30,31] Among people first diagnosed with HIV when already ill with AIDS, these years include many missed opportunities to prevent HIV progression to AIDS, opportunistic infections, and HIV transmission to uninfected partners.

By reducing barriers to HIV testing in the prenatal period, New York has curbed maternal-fetal transmission of HIV. The number of New Yorkers infected through injection drug use (IDU) has fallen dramatically since the expansion of syringe exchange programs (SEPs) and increased HIV testing among IDUs. In 2003, among individuals whose risk factors were known, there were 760 new AIDS diagnoses among IDUs (27% of cases), compared with 6,626 new AIDS diagnoses (56% of cases) among IDUs in 1993.

Many of the approximately 1,000 New Yorkers concurrently diagnosed with HIV and AIDS each year had multiple contacts with the health care system. These contacts are missed opportunities to diagnose HIV, prevent opportunistic infections, start treatment for HIV, and prevent the spread of HIV. Early diagnosis of HIV leads to early medical care, early treatment that can preserve immune function,[211,212,213] decreased likelihood of rapid disease progression,[214] and provision of support services, which improves health outcomes and decreases HIV transmission.[215,216,217,218,219]

The NYC Commission on HIV/AIDS makes 3 recommendations to increase the proportion of HIV-positive New Yorkers who know their HIV status and are linked to care.

10. Increase voluntary HIV testing and linkage to care of those who test HIV-positive.
11. Monitor HIV testing more closely.
12. Evaluate testing programs and expand those that are effective.

10. Increase voluntary HIV testing and linkage to care of those who test HIV-positive.

The current model of voluntary counseling and testing dates back to 1985, when there was no antiretroviral therapy and learning one's HIV status was associated with social, personal, and legal risks that were not necessarily offset by clear benefits. With the advent of effective antiviral therapy and other medical and social interventions, the benefits of knowing one's status, for individuals as well as for society, now far outweigh the risks.

First suggested more than a decade ago,[220] the CDC now recommends that routine, voluntary testing and counseling be universally offered in any setting in which HIV prevalence in the population is greater than 1%,[221] a recommendation that is being increasingly supported within the medical community regardless of HIV prevalence in a community.[222] In addition, the CDC recommends re-testing within three months of a high-risk exposure.[223] Today, HIV prevalence (including those infected but undiagnosed) is estimated to be at least 1.5% among the entire NYC population, with many subpopulations having significantly higher infection rates.

When HIV tests are offered to individuals as a routine part of medical care in a high prevalence area, more infections are diagnosed than when HIV testing is offered based on risk factors.[224,225,226,227,228,229,230,231,232,233] Routine offer of HIV testing is likely to increase life expectancy and decrease HIV transmission.[234,235] Testing is more likely to be accepted if providers recommend it as part of medical care.[236,237,238,239,240] Increasing the number of venues where individuals can be tested, and including non-traditional venues that attract individuals likely to engage in risky sex, such as bathhouses, sex clubs, pick-up bars, large circuit parties, and gay pride events, will increase options for HIV testing. As long as newer testing sites have strong linkages to care and treatment, this approach to HIV testing will also increase access to quality medical care and treatment.

Some effective examples include a program in Massachusetts that offered routine, voluntary HIV counseling, testing, and referral to individuals entering 4 hospital-associated urgent care centers. Among the approximately 3,000 people tested, the program identified an HIV prevalence of 2% – twice as high as before the program was implemented.[241] A review of

studies conducted in emergency departments found that many locations met the 1% prevalence threshold CDC recommends for routine, voluntary testing (prevalence ranged from 2 to 17%), and that emergency department (ED) testing was cost-effective.[242] When the routine offer of voluntary HIV testing was implemented in Boston Medical Center's inpatient medicine service, HIV prevalence of 3.8% was found.[243] These studies indicate that routine HIV testing in urgent care and inpatient settings can successfully identify many HIV-positive persons who may not have otherwise been tested, diagnosed, and started on treatment and care.

Rapid testing enables people to learn their HIV status in less than an hour, compared with the 1-2 weeks to receive results from standard HIV tests. Rapid HIV testing increases the number of people tested as well as the likelihood that people receive their test results. Effective programs have been implemented for pregnant women,[244] individuals attending sexually transmitted disease and outpatient clinics, and individuals presenting in emergency departments.[245] Rapid HIV testing also permits early counseling and discussion of risk reduction and therapy.[246]

Until recently, voluntary HIV counseling and testing had not been offered in emergency departments and many in-patient hospital settings. Since many medically underserved people who are at high risk for HIV use emergency departments for primary care, this may be the only time these people interface with the medical system.[247] Among pregnant women, HIV testing by risk factor assessment identifies only 41-57% of PLWHA, whereas routine voluntary testing detects up to twice as many (87%).[248,249]

Rapid testing has been implemented in a variety of non-traditional sites; in NYC, these include hospital emergency departments, correctional facilities, community-based organizations, and DOHMH STD clinics. The NYSDOH is also promoting rapid testing in primary care settings and substance use detoxification programs and by allowing same-day billing of routine medical visits as well as pre- and post-test counseling visits. In 2004, health facilities receiving funding through the NYS DOH Community-Based HIV Prevention and Primary Care Initiative in NYC tested 13,523 individuals with a seroprevalence rate of 4.5%.

In the past year, with CDC, New York State, and New York City funds, there have been pilot programs of rapid HIV testing in emergency departments in NYC; while these programs have found more than 1% of those tested to be HIV-positive, the numbers tested have been small in relation to the number of people who would benefit from testing.

Since 1989, the NYSDOH has operated an HIV Primary Care Medicaid Program, which integrates counseling and testing into routine clinical care and allows for same-day billing of HIV counseling visits and any other visit for which a Medicaid rate is established. In 2004, 55,131 clients in NYC were tested through this program, as measured by submitted Medicaid billing claims for HIV testing.

Seattle researchers found that the keys to developing a successful voluntary HIV counseling and testing program in bathhouses included establishing community prevention collaborations between bathhouse personnel and testing agencies, ensuring that testing staff are supported in their work, and offering anonymous rapid HIV testing.[250]

A survey of residential drug treatment centers in the U.S. in 2001 revealed that only about half offered their clients on-site HIV testing. Factors associated with offering on-site testing included larger size, public rather than private ownership, and medical orientation (i.e., operated by a hospital, the unit's perception of itself as their clients' primary medical provider, or providing medical care to individuals either on-site or at another part of the same treatment agency).[251]

HIV counseling may not be an effective long-term primary prevention strategy for uninfected participants, as HIV-negative participants may not modify their behavior more than untested participants.[252,253]

The NYC Commission on HIV/AIDS supports increasing voluntary HIV testing through the routine offer of HIV testing in outpatient clinics and private providers' offices as well as in hospital emergency departments and inpatient units. Voluntary HIV testing must also be expanded to community settings where populations with potentially high HIV prevalence congregate (i.e., bars, nightclubs, parks, bathhouses, homeless shelters, syringe exchange programs, drug treatment centers, gay pride events, and commercial sex venues) and settings in which they might be more comfortable being tested than in a clinical setting. Initiatives using rapid testing technology in community-based sites and hospital emergency departments recently implemented in New York City and State should be enhanced and expanded.

In addition to recent proposed regulatory changes, the current law governing voluntary counseling and testing needs to be studied further to determine if changes to legislation are required to facilitate normalization of testing. Current provider training should be updated to enable normalization of HIV testing. Laws and regulations should ensure the routine offer of HIV testing in health care settings and facilitate routine offer in non-clinical settings. Voluntary testing, availability of counseling, informed consent, right of refusal, and confidentiality safeguards must be preserved. No one should feel pressured into taking an HIV test based upon sociodemographic profiles or other factors, and medical care and other governmental and social services must not be denied to individuals who decline to be tested. Anonymous testing should continue to be supported, despite its complications on effective linkage to care and tracking of epidemiology.

Post-test counseling of HIV-positive persons should be strengthened to include explicit mechanisms and accountability for referral to comprehensive health care services, including better use of currently existing mechanisms and enhanced follow-up to ensure that people with newly identified HIV infection enter treatment. Post-test counseling for people who test HIV-positive, whether in medical settings such as hospital Emergency Departments or in community-based settings, should be supported. A "one size fits all" approach to counseling and testing should not be adopted as a way to simplify and streamline the process; where feasible, personalized and realistic risk-reduction plans, though potentially more expensive and difficult to implement, are more likely to result in actual reduction in risky behavior.

Linkage to care is extremely important for the health of the patient as well as to prevent transmission of HIV into the community; the large number of PLWHA who are not linked to effective and consistent treatment and care demonstrates how difficult this can be to accomplish and the need for additional attention to and monitoring of this issue. Linkage refers to actual facilitation of commencement of care and receipt of services, not merely referrals. For high-risk persons who test negative and others who request it, post-test counseling should include linkage to intensive prevention counseling as well as substance use, mental health, and behavioral counseling and support programs.

Partner notification is an underutilized yet effective HIV prevention strategy, and a key element of voluntary counseling and testing. The NYC Commission on HIV/AIDS recommends that partner counseling and referral services should be tightly integrated into all voluntary HIV counseling and testing programs, especially as rapid testing is expanded to nontraditional venues.

Linkage to care is especially problematic for correctional populations. Drug treatment and maintenance therapy, hepatitis A and B vaccinations, HCV testing and treatment education,

harm reduction education, and voluntary HIV testing and treatment should all be improved for people in the correctional system, and linkage to primary care, drug treatment, and harm reduction services upon release should be improved. The practice of releasing prisoners in the early hours of the morning should be abandoned, and those released should be provided a sufficient supply of necessary medications, including ARV if prescribed, until post-release medical appointments can be facilitated.

To help ensure more effective linkage to care, the Commission recommends that awareness of health insurance options, including enrollment and recertification, be increased among PLWHA, physicians, health care facilities, and other testing sites, including CBO testing sites. The Mayor's Office of Health Insurance Access (MOHIA) and NYC DOHMH's Division of Health Care Access and Improvement can play critical roles in patient and provider education, as well in streamlining access for persons eligible for or enrolled in public health insurance programs and strengthening linkage to care. Hospital clinical and social work staff should further improve access to public health insurance and free medical care.

Reimbursement for HIV testing must be structured to maintain the existing testing and counseling infrastructure, which will be essential to linking newly diagnosed PLWHA to treatment. Incentives should be provided to greatly expand testing volume, including in emergency departments. Private insurers should universally provide reimbursement for HIV testing performed in doctor's offices or other medical care facilities. Reimbursement schedules need to be flexible to support availability and expansion of rapid testing into areas where high-risk patients present, especially in part-time clinics and emergency rooms. NYC should advocate changing NYS regulations to remove administrative barriers to reimbursement of HIV testing (e.g., providing for reimbursement for HIV testing during a hospital emergency department visit). Increased resources will be needed to support normalization of testing in EDs and other health care settings.

As voluntary HIV testing is expanded into nontraditional sites, NYC should promote, fund, and provide training and technical assistance to facilitate citywide availability of HIV testing, especially rapid tests, in all venues where high-risk populations may be found in order to encourage people who would not normally do so to get tested. A peer-oriented approach to recruit drug users and other at-risk individuals should be pilot-tested and evaluated. New saliva-based HIV rapid testing technology should be adopted as appropriate to provide people with additional testing options. NYC should use social marketing and educational materials to complement voluntary testing strategies targeted to specific populations and settings.

The Commission fully supports the NYS DOH's emergency regulations that simplify the testing HIV consent form, provide HIPAA-compliant consent for transfer of medical records by patient request, and provide the option for provision of printed information in lieu of traditional face-to-face pre-test counseling. These regulatory changes, which should be adopted on a permanent basis, will make less burdensome for health care providers to offer voluntary HIV testing, making it more likely that testing will be offered in health care settings. Individuals would still have the option of face-to-face counseling. The Commission also recommends study of these changes once implemented and consideration of additional measures, including consideration of legislative changes, that would further streamline the testing process and make it a normal component of medical care.

11. Monitor HIV testing closely.

The NYC Commission on HIV/AIDS recommends that NYC ensure, particularly with wider use of HIV rapid testing, that all positive test results are confirmed by Western Blot, and that all confirmed positive test results are accurately reported to existing surveillance systems as required by law. Improved adherence to existing data collection protocols, including risk factor assessment, is essential and will facilitate more effective planning and resource allocation. There must also be improved assessment of risk factor status in newly diagnosed PLWHA in order to more effectively target services to communities and populations at highest risk.

12. Evaluate testing programs and expand those that are effective.

The NYC Commission on HIV/AIDS recommends that NYC evaluate all testing programs and expand those that identify and effectively engage in treatment a large number or proportion of individuals newly diagnosed with HIV. NYC should elicit feedback from all HIV-positive and selected HIV-negative individuals on linkage from testing to other services through a simple, anonymous, standardized, and confidential post-test survey as part of a citywide evaluation of the testing-referral continuum.

Treatment, Care, and Coordination

The Commission makes 4 recommendations to further improve the care and treatment of PLWHA in NYC.

13. Preserve and strengthen treatment, case management, and support services to further improve patient outcomes.
14. Increase housing opportunities and improve allocation based on client needs.
15. Expand mental health, behavioral health, and harm reduction services and co-locate them with HIV/AIDS care.
16. Increase access to care by further improving health care worker and community staff training, enhancing patient education and empowerment, and disseminating information on service availability to PLWHA and service providers.

13. Preserve and strengthen treatment, case management, and support services to further improve patient outcomes.

With the advent of antiretroviral therapy, HIV/AIDS has increasingly become a chronic disease requiring long-term disease management; however, medical service infrastructure must continue to remain in place for seriously ill PLWHA. Methods and resources to further improve treatment outcomes, particularly for PLWHA with multiple problems including unstable housing, mental illness, and chemical dependency, are needed.[254,255,256,257,258] While there has been a decreasing need for inpatient and long-term care for PLWHA, there has been an increasing need for general medical care and substance use and mental health treatment, which will require reallocation of funding and resources to shift capacity.

The NYC Commission on HIV/AIDS recommends that the existing treatment and service delivery resources for PLWHA be preserved and further strengthened in order to improve patient outcomes. To maintain and increase continued breadth of services through multiple funding sources, the Commission recommends ensuring that existing Medicaid reimbursement structures are maintained and new funding streams developed.

Prophylaxis after exposure to HIV, such as in the case of high-risk sexual exposures when a condom breaks or in the case of unprotected forced sex, is effective in preventing HIV and should be expanded.

In order to identify and provide additional needed resources for PLWHA who are lost to care or who are not being treated effectively, systematic citywide monitoring of patient status, at least through laboratory tests which are already being performed (viral load and CD4) should be strengthened, and would be facilitated by recently proposed regulatory changes. This information, which is essential to help evaluate whether PLWHA are on an effective course of treatment, should be used in the aggregate to assess and improve patient outcomes. Whether this information can and should be used on a patient-specific basis, either by the DOHMH or NYS DOH, and whether it should be available, with written patient consent, for the treating physician to review, will require further review and discussion. Additional methods to improve monitoring and quality of care should be evaluated.

Antiretroviral therapy is highly effective even in IDUs with advanced HIV infection.[259] Treatment for HIV infection should not exclude people with a history of IDU.

Newly diagnosed persons as well as those who are diagnosed but not in care are more likely to get into care if they have a case manager.[260] Outreach, mental health, and case management services can maintain HIV-positive and at-risk youth and young adults in care.[261,262,263,264] Case management that includes supportive services such as mental health and substance use treatment, transportation, housing, and legal assistance improves primary care entry and retention.[265,266,267,268,269,270,271,272,273] Effective case management is associated with fewer unmet needs (e.g., mental health, substance use treatment, housing, legal services, and transportation) and higher use of HIV medications in persons receiving HIV treatment.[274,275]

The NYC Commission on HIV/AIDS recommends that NYC investigate ways to further improve the case management system to focus on population-based, rather than facility-based, quality of care. New York State has developed case management standards and is currently reviewing its own standards as well as other states' standards. NYS is revising and updating its standards to fit current needs of PLWHA in NYC and is requiring that all case managers adhere to case management standards already implemented as well as those that may be developed. The needs of immigrant PLWHA should be addressed within a framework of legal and culturally/linguistically-appropriate support. Legal services are also important for many individuals living with HIV/AIDS.

Support services for people providing care to PLWHA should also be expanded. NYC must also address the growing number of AIDS orphans – youth who have lost one or both parents to AIDS and are being raised by grandparents or other relatives or are in foster care. These children are also among those at highest risk for becoming HIV infected themselves; prevention education is especially important for this group.

The Commission fully supports the NYS DOH's proposed changes to regulations that would make all results of CD4 testing, all viral load tests, and drug resistance testing reportable. It is critical to prioritize services to those most in need and develop more effective treatment and care strategies. These regulatory changes will facilitate improved monitoring of critical aspects of the epidemic, including identification of subgroups in need of more intensive services and monitoring of drug resistance and adequacy of treatment.

14. Increase housing opportunities and improve allocation based on client needs.

Housing remains a vital need for PLWHA in NYC. NYC has a substantial homeless population, with 36,000 people (single adults as well as families with children) sheltered each night in addition to an estimated 2,700 homeless people each night who are unhoused and on the streets. Local Law 49 entitles symptomatic PLWHA to housing assistance administered by HASA, using city tax dollars and federal funds awarded through HOPWA (Housing Opportunities for People With AIDS). More than 31,000 PLWHA currently receive some form of housing assistance through HASA, Sustainable Living Fund, Rental Assistance Program, and other programs. This represents approximately half of New Yorkers diagnosed with AIDS and a third of those with non-AIDS HIV infection.

A recent DOHMH analysis of the prevalence of HIV/AIDS among homeless persons found that homeless individuals are diagnosed with HIV at more than five times the rate as the overall NYC population. While homeless and non-homeless PLWHA were equally likely to have kept an initial primary care appointment, homeless PLWHA were significantly less likely to remain in care. Deaths among homeless PLWHA tend to occur at younger ages than non-homeless PLWHA. Many PLWHA are emergently housed in single-room occupancy hotels (SROs). SROs may expose clients with substance use issues to drug dealing and other illegal activities, and do not offer the supportive services that clients may need and that other housing models provide.[276,277,278] PLWHA housed in SRO hotels are often very sick, and frequently do not receive regular health care because of multiple barriers.[94,279] Under legislation recently enacted by the City Council and signed by the Mayor, HASA now gives every homeless client an application for non-emergency housing the same day they are found eligible for HASA services, and gives clients eligible for non-emergency housing a medically appropriate referral within 90 days of their placement in emergency housing or their completion of a non-emergency housing application.

Clients no longer requiring intensive support should be able to transfer to more independent housing environments, which will increase the availability of supportive housing for those who require more intensive support. Alternatives to emergency housing placement in SROs should be found as quickly as possible. In the interim, comprehensive social and harm reduction services should be provided on-site or by referral. Laws regarding eligibility for public benefits for PLWHA returning to the workforce should be reviewed so that access to housing and health benefit entitlements are not lost. The need for support in housing programs for the marginally homeless, to prevent lapse into long-term homelessness, should be met. The housing needs of undocumented symptomatic PLWHA who are unable under current benefits eligibility rules to access housing support should also be addressed.

In 2001, the Mayor's Office of AIDS Policy Coordination commissioned a study of the housing needs of PLWHA, which was issued in early 2005.[280] The City has already begun to implement some of the report's recommendations for improving provision of housing for PLWHA. With improved treatment and longer survival, the number of New Yorkers living with AIDS nearly doubled in the past 8 years, resulting in an increased need for housing that includes a spectrum of supportive housing. The City is committed to working with partners at the federal, state, and local level to develop programs and services to meet these increasing needs.

The NYC Commission on HIV/AIDS recommends that NYC increase the number of units and types of housing for PLWHA and that the Sustainable Living Fund be fully resourced. A single point of access for housing placement and a centrally coordinated database of all government- and privately-funded housing programs in NYC, which could be modeled on the

existing database for mental health bed availability in NYC, should be investigated. All housing programs should be required to ensure that residents receive appropriate medical care and social services, low-threshold substance use treatment and harm reduction services, and other needed services. The integration of housing and medical care must be substantially improved. Housing programs should provide standardized assessments of substance use, mental health, and other life skills.

15. Expand mental health, behavioral health, and harm reduction services and co-locate them with HIV/AIDS care.

Many people infected with HIV also have mental health and/or substance use disorders.[281] Co-occurrence of HIV, mental illness, and substance use is significantly higher in women, racial/ethnic minorities, and socially disenfranchised groups. Additional stressors for this population include incarceration and homelessness. Approximately half of New Yorkers enrolled in the Ryan White Planning Council's longitudinal client cohort evaluation (CHAIN study*) have experienced clinically relevant mental health symptoms. Medicaid provides mental health services to nearly 1 in 5 HIV-positive Medicaid recipients in NYC. Most PLWHA enrolled in the CHAIN study receive mental health services through Medicaid, Title I, or other sources.

Integration of care is ideal; however, mental health and substance use services are often poorly coordinated, even without the added complication of HIV/AIDS. Funding continues to be a critical issue, as these programs often receive separate funding streams. Integrated and coordinated service delivery models improve outcomes. More interdisciplinary training is needed to help medical staff and case managers better understand mental health problems, as is training for mental health/substance use staff to better understand HIV.

A study that anonymously evaluated severely mentally ill individuals at two public psychiatric hospitals in New York City found relatively high HIV infection rates among both men (5.2%) and women (5.3%).[282] A study of HIV-infected adolescents revealed that most (53%) had been diagnosed with mental illness prior to their treatment at an urban adolescent primary care clinic, had a documented history of sexual abuse (50%), and had a history of substance use (82%).[283] More than half of HIV-positive adolescents in this sample also suffered from depression. Psychiatric disorders in adolescents, especially affective disorders, may be a risk factor for high-risk sexual behavior and substance use, which increase the risk of HIV infection. More than a third (37%) of HIV-positive men in San Francisco and Denver were found to be depressed.[284] Persons with HIV-related symptoms, little social support, who were unemployed, and those with CD4 counts under 200 were significantly more likely to be depressed.

Mental illness among PLWHA is strongly correlated with reduced health care access, lower treatment adherence, poor medical outcomes, and higher rates of substance use, and housing instability.[285,286] Depression and other mental health co-morbidities can also affect HIV-related health outcomes.[287] The AIDS-related death rate is higher among women with chronic depressive symptoms; receipt of mental health services is associated with reduced mortality and significantly increases the probability of utilizing ARV.[288] Behavioral skills training can increase condom use in persons with serious and persistent mental illness.[289]

* The Community Health Advisory and Information Network (CHAIN), an ongoing longitudinal study of people living with HIV in New York City, was initiated in Fall 1994. CHAIN assesses health and social services needs of PLWHA and the availability, accessibility, and quality of HIV/AIDS services.

Co-location of primary care and mental health services increases interaction and collaboration and can improve health outcomes.[290,291] Co-location of mental health and substance use services is more effective than treatment in two separate systems.[292] The number of opioid-addicted New Yorkers enrolled in medication-assisted treatment using buprenorphine should be increased substantially, as has been previously recommended. Harm reduction approaches provide low-threshold entry, which can be followed by interventions to enhance motivation. Managing patient benefits of drug users reduces the likelihood of homelessness, hospitalization, or incarceration.

Existing programs that can be used as a basis on which to improve and enhance services include the AIDS Institute Mental Health Clinical Guidelines, which assist primary care practitioners in working with PLWHA with mental health issues; AIDS Institute Mental Health Standards of Care, which integrate and coordinate mental health care for PLWHA; and Statewide Mental Health Consumer Forums for PLWHA developed by the AI in consultation with the Leadership Training Institute, consumers, and providers.

New York State is involved with programs that co-locate HIV care and mental health and substance use treatment services. Research conducted by SAMHSA along with NIMH and HRSA on the HIV/AIDS Mental Health Services Demonstration Program[293] and the HIV Cost and Services Utilization Study[294] determined that access to care has improved but remains suboptimal, particularly among blacks, Latinos, women, the uninsured, and those with Medicaid. One of these programs, located at Montefiore, included methadone maintenance with co-located HIV/AIDS clinical care and some mental health and substance use services. The HIV/AIDS Treatment Adherence, Health Outcomes and Cost Study highlighted various models of multifaceted, integrated service delivery systems for people with HIV, substance use, and mental health disorders; many of these may prove promising in treating triply-diagnosed individuals.[295]

The NYC Commission on HIV/AIDS recommends that mental health services be expanded and co-located with medical, drug treatment, and harm reduction services wherever possible. Because of the high proportion of PLWHA with opiate addiction, buprenorphine treatment should be available at all HIV clinics. Primary health care staff and case managers must be trained to identify, treat, and provide appropriate referral for PLWHA with mental illness and chemical dependency. Likewise, mental health and chemical dependency professionals must be trained in the needs and care of PLWHA.

16. Increase access to care by further improving health care worker and community staff training, enhancing patient education and empowerment, and disseminating information on service availability to PLWHA and service providers.

PLWHA who are treated by HIV specialists (whether specialty-board certified or not) have better outcomes.[296,297,298,299] A study of adherence counseling found that physicians who treat a greater number of PLWHA were more likely to assess and reinforce adherence counseling than other physicians.[300]

NYS AI publicizes data on institutional compliance with established guidelines and also provides technical assistance, continuing medical education programs, and HIV specialist training. For nearly two decades, AI has sponsored a clinical education initiative based on state-of-the-art evidence regarding effective educational intervention strategies for clinicians, and the AI's quality management program includes dissemination of best practices and provider credentialing. While these programs provide a sound basis for health care worker training, physician adherence to guidelines can be strengthened even further. Additional training to

improve health outcomes among drug users is needed. Personalized physician education using tutorials, statements by local opinion leaders, and performance feedback are effective.[301] In institutions throughout the country, poor organization and insufficient access to clinical information at the point of care are obstacles to optimal performance.[302] Provider adherence to clinical guidelines can be improved if these guidelines are incorporated into a system that improves the organization of clinical information and provides reminders for indicated interventions.[303] Many clinics have implemented clinical reminders at the point of care through use of electronic medical records (EMRs). A prospective study of an electronic clinical reminder system in an HIV specialty clinic found that, despite high baseline adherence to HIV practice guidelines, clinical reminders delivered at the point of HIV care were associated with more timely initiation of recommended practices.

As the burden of HIV infection in NYC is increasingly borne by women, health care and services providers must be further trained and have their skills updated, including through increased offer of HIV testing and improved clinical management of HIV infection in women. The needs of women and children with HIV/AIDS need to be more effectively addressed, and HIV care providers should receive additional training and resources to better address women's health issues.

Full therapeutic benefit of antiretroviral treatment (i.e., optimal viral load suppression[304]) requires a high level of adherence.[305] Monitoring of PLWHA on ARV showed that non-adherence, including drug holidays, erratic pill taking, and other causes of sub-optimal dosing, led to dramatic rebounding of previously suppressed viral loads.[306] Non-adherence can lead to treatment failure and limit options for HIV therapies due to cross-resistance to entire classes of HIV drugs.[307] In addition, transmission of drug-resistant strains to individuals not previously treated, which was documented as early as 1998, has significant ramifications.[308] Younger age, higher number of pills, higher frequency of doses, and longer time on therapy increase the risk of non-adherence.[309] Lower adherence was associated with lack of long-term housing, not belonging to an HIV support group, crack cocaine use, and medication side effects. Alcohol use was associated with lower adherence among women.[310] Depression, borderline personality disorder, and serious family or social problems are also strongly associated with non-adherence.[311,312]

A study of adolescents infected with HIV through sexual behavior or injection drug use revealed that only 28% reported taking all their medications within the past month.[313] Factors associated with non-adherence in adolescents included medication-related adverse effects and complications of strict adherence on their day-to-day routines. HIV-positive women with young children have been found to have very low rates of adherence to ARV.[314]

Both clinic- and pharmacy-based programs of pharmacist-provided education, supportive counseling, and follow-up telephone support with conventional dispensing of ARV medications significantly enhance treatment efficacy and improve adherence.[315,316]

Adherence improvement is particularly needed for youth, inmates, injection drug users, persons with mental illness, and women with young children. A comparison of excellent adherers with sub-optimal adherers found that those with excellent adherence believed that adherence rates needed to be 90-100% for ARV efficacy, trusted their primary providers, took medications even when actively abusing substances, were open about their HIV status, had substantial social support, and were not depressed.[317] Rigorous clinical management of ARV adverse effects also maximizes adherence support. Continuous health insurance is extremely

important to enable adherence; insurance programs in New York should be preserved and further expanded.

Between 50% and 90% of individuals recently infected with HIV experience symptoms of acute HIV infection. Individuals at this early stage of HIV infection have an extremely high viral load and are at significantly greater risk of spreading infection to others. Improved recognition of symptoms of acute HIV infection among health care personnel and the public will encourage earlier testing and diagnosis and facilitate earlier linkage to prevention counseling, treatment, and care. Pooled polymerase chain reaction (PCR) testing, which helped identify an outbreak of HIV in North Carolina by identifying recent seroconverters with acute HIV infection,[318] should be implemented.

The NYC Commission on HIV/AIDS recognizes that all of its recommendations to improve treatment, care, and coordination will support adherence in PLWHA. The integration of primary care with mental and behavioral health and drug treatment services, provision of quality case management services and safe and adequate housing, as well as novel approaches to adherence counseling and treatment support such as community-based, peer-led treatment education and health care literacy programs, are all integral to supporting adherence in PLWHA. Increased support for physicians is needed to help them facilitate testing and link individuals who test positive with treatment and care services.

The Medical Health and Research Association (MHRA) and the Ryan White Planning Council have undertaken the New York HIV Mapping Collaborative Project, a public-private partnership to develop a single, integrated database containing information about all publicly funded HIV-related services in New York City. The mapping project intends to create a master database of all Ryan White, CDC Prevention, HOPWA, and other federal-, state-, and city-funded HIV programs in NYC to develop maps of service locations for consumers and providers. The web-based resource directory will include all HIV/AIDS prevention, medical treatment, care, and support services, including medical providers, housing resources, substance use programs and housing, harm reduction programs, mental health treatment programs and housing, job retraining, legal assistance, long-term care services, and other services.

The NYC Commission on HIV/AIDS supports creating, routinely updating, maintaining, and widely disseminating information provided through the NYC HIV/AIDS Services database.

Areas Requiring Additional Review

There are several areas on which the Commission is in general agreement, but acknowledge that additional review is needed in order to formulate recommendations. These include:

- *Counseling and testing:* Although there is consensus that barriers to voluntary testing need to be reduced and testing increased, more study is needed to determine:
  - Whether and to what extent current laws governing HIV counseling should be changed;
  - The best way to make testing a normal part of normal medical care that is universally offered and generally accepted;
  - All costs associated with comprehensive HIV testing and counseling, as well as the effectiveness of these programs; and
  - How best to expand testing and incorporate risk-reduction counseling in this process.
- *Case management:* Although there is consensus that the current system of case management provides essential services, there appear to be a large number of people who are not adequately served. It is imperative that we develop new case management and support service models to reach, re-engage, and sustain in care individuals who are lost to care. More study is needed to determine:
  - How service delivery systems can best monitor and improve treatment effectiveness;
  - Whether there is a role for systematic citywide monitoring of patient status in order to identify individuals lost to care and to assist them in returning to care;
  - The role of the case manager in a single point-of-entry system, and the extent to which single point-of-entry, if established, should incorporate housing, drug treatment, and other services as part of an integrated care approach;
  - The role of managed care models (i.e., Medicaid HIV Special Needs Plans) in facilitating more coordinated treatment and care for PLWHA;
  - How best to develop and implement of additional programs to transition clients from disability to work force entry; and
  - Whether and to what extent current laws governing case management (e.g., Local Law 49 of 1997) should be changed to strengthen the case management system.
- *Harm reduction.* Although there is consensus that harm reduction approach to HIV prevention works and should be expanded, more study is needed to determine which city, state and/or federal laws and regulatory policies should be revised and how best to revise them to reduce HIV/HCV risk and improve access to treatment and care. This process must include drug prevention and treatment, law enforcement, and harm reduction experts, as well as representatives of drug user groups.
- *Correctional populations:* People who cycle in and out of the correctional system are at especially high risk for poor health outcomes. In the United States, the

AIDS case rate among correctional inmates is 5 times that of the general population, and AIDS is the second leading cause of death in U.S. prisons. Of particular concern is the number of individuals released from correctional facilities who return to their communities with undiagnosed and/or untreated HIV infection, mental illness, and alcohol and drug use problems, and are not linked to needed HIV prevention, treatment, and care services or other medical and mental health care. Correctional populations need to be significantly better served with regard to HIV/AIDS prevention, testing, treatment, and care. Introduction of rapid testing quadrupled rates of voluntary testing among inmates at Rikers Island. HIV case management services in City jails and discharge planning for HIV-positive patients receiving treatment have been expanded. A peer education program for HIV prevention among correctional populations has been reintroduced. Additional program enhancements are planned. However, more study is needed to determine appropriate responses to these issues that can be implemented and that are sensitive to privacy and confidentiality concerns. Services within the correctional system as well as supportive and transitional services after release back into the community need to be strengthened. Quality of care needs to be addressed. Because many New York City residents are incarcerated in upstate correctional facilities before returning to NYC, ways in which HIV/AIDS-related correctional policies can be better coordinated need to be investigated.

Conclusion

NYC can drastically reduce the spread of HIV. Accomplishing this will save tens of thousands of lives, improve the health of the City's poorest and sickest neighborhoods, and transform NYC into a national and global model. This will not be easy and will not be without challenges. But it can be done. New Yorkers deserve no less.

The New York City Commission on HIV/AIDS

Dennis Walcott, NYC Deputy Mayor for Policy, *Co-chair*

Thomas R. Frieden, MD, MPH, Commissioner, NYC Dept. of Health and Mental Hygiene, *Co-chair*

Moisés Agosto-Rosario, Vice President & Managing Director, Community Access

Allan Clear, Executive Director, Harm Reduction Coalition

Spencer Cox, Founder and Executive Director of the Medius Institute for Gay Men's Health

Humberto Cruz, Executive Deputy Director, Div. of HIV Health Care, NYS Department of Health, AIDS Institute

Don C. Des Jarlais, PhD, Director of Research, Baron Edmond de Rothschild Chemical Dependency Institute, Beth Israel Medical Center; Specialist in HIV prevention among injection drug users

Jay Dobkin, MD, Director, AIDS Center; Physician, Infectious Diseases, Columbia-Presbyterian Hospital

Verna Eggleston, Commissioner**,** NYC Human Resources Administration

David D. Ho, MD, Director and CEO, Aaron Diamond AIDS Research Center

Debra Fraser-Howze, President/CEO, National Black Leadership Commission on AIDS

Mathilde Krim, PhD, Chairperson, American Foundation for AIDS Research (AmFAR)

Kim Nichols, ScM, MPH, Co-Executive Director, African Services Committee

Frank J. Oldham Jr., Executive Director, Harlem Directors Group

Ana Oliveira, MA, Executive Director, Gay Men's Health Crisis

Tokes Osubu, Executive Director, Gay Men of African Descent

Jairo Enrique Pedraza, Director of International Programs, Cicatelli Associates, Inc.

Elaine E. Reid, **CSW**, Co-Chairperson-Elect, NYC Prevention Planning Group

J. Edward Shaw, Co-Chair, NYC Prevention Planning Group, People Living With AIDS Committee

Terry Troia, Executive Director, Project Hospitality

Rona M. Vail, MD, Clinical Director, HIV Services, Callen-Lorde Community Health Center

The Commission thanks Dr. Moupali Das-Douglas and Mr. Drew Blakeman for their hard work and expertise and for working closely with Commission members to prepare this report on the Commission's behalf.

References

NOTE: All data not directly referenced are from the DOHMH HIV Epidemiology Program or the Bureau of Epidemiology Services.

[1] Martin JL. The impact of AIDS on gay male sexual behavior patterns in New York City. Am J Public Health 1987;77:578-81.
[2] Siegel K, Glassman M. Individual and aggregate level change in sexual behavior among gay men at risk for AIDS. Arch Sex Behav 1989;18:335-48.
[3] Des Jarlais DC, Marmor M, Friedmann P, et al. HIV incidence among injection drug users in New York City, 1992-1997: evidence for a declining epidemic. Am J Public Health 2000;90:352-9.
[4] Des Jarlais DC, Perlis T, Friedman SR, et al. Behavioral risk reduction in a declining HIV epidemic: injection drug users in New York City, 1990-1997. Am J Public Health 2000;90:1112-6.
[5] Des Jarlais DC, Perlis T, Friedman SR, et al. Declining seroprevalence in a very large HIV epidemic: injecting drug users in New York City, 1991 to 1996. Am J Public Health 1998;88:1801-6.
[6] Rotheram-Borus MJ, Koopman C, Haignere C, Davies M. Reducing HIV sexual risk behaviors among runaway adolescents. JAMA 1991;266:1237-41.
[7] NYC DOHMH HIV Epidemiology Program 4th quarter report. Vol. 2, No. 4. October 2004.
[8] *Pneumocystis* pneumonia – Los Angeles. MMWR Morb Mortal Wkly Rep 1981;30:1-3.
[9] NYC DOH. Office of AIDS Surveillance. Estimates of persons living with AIDS in New York City. March 2000.
[10] Diagnoses of HIV/AIDS – 32 States, 2000-2003 , MMWR Morb Mortal Wkly Rep 2004;53:1106-10.
[11] Halkitis P, Green K. Seroconversion and methamphetamine use. 2004 (unpublished manuscript).
[12] Markowitz M, Mohri H, Mehandru S, et al. Infection with multidrug resistant, dual-tropic HIV-1 and rapid progression to AIDS: a case report. Lancet 2005;365:1031-8.
[13] Report on the global AIDS epidemic. Geneva: Joint United Nations Programme on HIV/AIDS. 2004.
[14] HIV strategic plan through 2005. Atlanta: Centers for Disease Control and Prevention. January 2001.
[15] NYC DOHMH HIV Epidemiology Program 1st quarter report. Vol. 3, No. 1. January 2005.
[16] NYC DOHMH HIV Epidemiology Program. Pediatric & adolescent HIV/AIDS surveillance update. December 2004.
[17] Des Jarlais DC, Friedman SR, Novick DM, et al. HIV-1 infection among intravenous drug users in Manhattan, New York City, from 1977 through 1987. JAMA 1989;261:1008-12.
[18] Des Jarlais DC, Friedman SR, Sotheran JL, et al. Continuity and change within an HIV epidemic. Injecting drug users in New York City, 1984 through 1992. JAMA 1994;271:121-7.
[19] Des Jarlais DC, Perlis T, Arasteh K, et al. "Informed altruism" and "partner restriction" in the reduction of HIV infection in injecting drug users entering detoxification treatment in New York City, 1990-2001. J Acquir Immune Defic Syndr 2004 ;35:158-66.
[20] NYC DOHMH. HIV/AIDS semi-annual report. June 2002.
[21] NYC SPARCS 2002.
[22] Personal communication with Humberto Cruz, New York State AIDS Institute
[23] Kahn JG, Zhang X, Cross LT, Palacio H, Birkhead GS, Morin SF. Access to and use of HIV antiretroviral therapy: variation by race/ethnicity in two public insurance programs in the U.S. Public Health Rep 2002;117:252-62.
[24] Agins BD. The HIV Quality of Care Program [presentation]. August 2004.
[25] NYC DOHMH. Sex in the city: more HIV testing and condom use needed! Vital Signs, Vol. 2, No. 6. July 2003.
[26] 2003 NYC Youth Behavioral Risk Survey.
[27] NYC DOHMH. Summary of vital statistics 2003.
[28] Unpublished data, NYC DOHMH Bureau of STD Control.
[29] Bacchetti P, Moss AR. Incubation period of AIDS in San Francisco. Nature 1989;338:251-3.
[30] Lemp GF, Payne SF, Rutherford GW, et al. Projections of AIDS morbidity and mortality in San Francisco. JAMA 1990;263:1497-501.
[31] Bailey NT. A revised assessment of the HIV/AIDS incubation period, assuming a very short early period of high infectivity and using only San Francisco public health data on prevalence and incidence. Stat Med 1997;16:2447-58.
[32] Palella FJ, Deloria-Knoll M, Chimel JS, et al. Survival benefits of initiating antiretroviral therapy in HIV-infected persons in different CD4 cell strata. Ann Intern Med 2003;138:620-6.

[33] Chamot E, Coughlin SS, Farley TA, Rice JC. Gonorrhea incidence and HIV testing and counseling among adolescents and young adults seen at a clinic for sexually transmitted diseases. AIDS 1999;13:971-9.
[34] Valleroy LA, MacKellar DA, Karon JM, et al. HIV prevalence and associated risk in young men who have sex with men. JAMA 2000;284:198-204.
[35] Allen S, Serufilira A, Bogaerts J, et al. Confidential HIV testing and condom promotion in Africa. Impact on HIV and gonorrhea rates. JAMA 1992;268:3338-43.
[36] Cleary PD, Van Devanter N, Rogers TF, et al. Behavior changes after notification of HIV infection. Am J Public Health 1991;81:1586-90.
[37] Colfax GN, Buchbinder SP, Cornelisse PGA, Vittinghoff E, Mayer K, Celum C. Sexual risk behaviors and implications for secondary HIV transmission during and after HIV seroconversion. AIDS 2002;16:1529-35.
[38] Liddicoat RV, Horton NJ, Urban R, Maier E, Christiansen D, Samet JH. Assessing missed opportunities for HIV testing in medical settings. J Gen Intern Med 2004;19:349-56.
[39] Hu DJ, Byers R Jr, Fleming PL, Ward JW. Characteristics of persons with late AIDS diagnosis in the United States. Am J Prev Med 1995;11:114-9.
[40] Unpublished data, NYC DOHMH Correctional Health Services Program.
[41] NYC DOHMH BSTDC Quarterly Report. Vol. 1, No. 2, March 2004.
[42] NYC DOHMH. City Health Information. HIV/AIDS and partner notification. November 2004.
[43] Aidala A, Needham-Waddell E, Sotheran J. Factors associated with delayed care seeking among HIV-infected individuals in New York City. Community Health Advisory & Information Network (CHAIN) Fact Sheet. New York: Mailman School of Public Health, Columbia University. 2004
[44] Samet JH, Freedberg KA, Stein MD, et al. Trillion virion delay: time from testing positive for HIV to presentation for primary care. Arch Intern Med 1998:158:734-40.
[45] Grube B, Chernesky RH. HIV/AIDS case management tasks and activities: the results of a functional analysis study. Soc Work Health Care 2001;32:41-63.
[46] Lehrman SE, Gentry D, Yurchak BB, Freedman J. Outcomes of HIV/AIDS case management in New York. AIDS Care 2001;13:481-92.
[47] Karpati A, Kerker B, Mostashari F, et al. Health Disparities in New York City. New York: New York City Department of Health and Mental Hygiene, 2004.
[48] HIV Prevalence, Unrecognized Infection, and HIV Testing Among Men Who Have Sex with Men – Five U.S. Cities, June 2004-April 2005. MMWR Morb Mortal Wkly Rep 2005;54-597-601.
[49] Bogart LM, Thorburn S. Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans? J Acquir Immune Defic Syndr 2005;38:213-8.
[50] AIDS and stigma: a conceptual framework and research agenda. final report from a research workshop sponsored by the National Institute of Mental Health. Herek GM, Mitnick L, co-chairs. Bethesda, Md.: National Institute of Mental Health. Office on AIDS; 1996.
[51] Takahashi LM. Stigmatization, HIV/AIDS, and communities of color: exploring response to human service facilities. Health Place 1997;3:187-99.
[52] Varas-Diaz N, Serrano-Garcia I, Toro-Alfonso J. AIDS-related stigma and social interaction: Puerto Ricans living with HIV/AIDS. Qual Health Res 2005;15:169-87.
[53] Carr RL, Gramling LF. Stigma: a health barrier for women with HIV/AIDS. J Assoc Nurses AIDS Care 2004;15:30-9.
[54] Sandelowski M, Lambe C, Barroso J. Stigma in HIV-positive women. J Nurs Scholarsh 2004;36:122-8.
[55] Clark HJ, Lindner G, Armistead L, Austin BJ. Stigma, disclosure, and psychological functioning among HIV-infected and non-infected African-American women. Women Health 2003;38:57-71.
[56] MacIntyre K, Macdonald C. Implementing tuberculosis control in Scotland (1945-1960): overcoming stigma at the community level (Working Paper Series). Glasgow University, Wellcome Trust Unit for the History of Medicine.
[57] Castro A, Farmer P. Understanding and addressing AIDS-related stigma: from anthropological theory to clinical practice in Haiti. Am J Public Health 2005;95:53-9.
[58] Brown L, Macintyre K, Trujillo L. Interventions to reduce HIV/AIDS stigma: what have we learned? AIDS Educ Prev 2003;15:49-69.
[59] Parker R, Aggleton P. HIV and AIDS-related stigma and discrimination: a conceptual framework and implications for action. Soc Sci Med 2003;57:13-24.
[60] Parker R, Aggleton P. HIV and AIDS-related stigma and discrimination: a conceptual framework and implications for action. Soc Sci Med 2003;57:13-24.

[61] Letamo G. Prevalence of, and factors associated with, HIV/AIDS-related stigma and discriminatory attitudes in Botswana. J Health Popul Nutr 2003;21:347-57.
[62] Klein SJ, Karchner WD, O'Connell DA. Interventions to prevent HIV-related stigma and discrimination: findings and recommendations for public health practice. J Public Health Manag Pract 2002;8:44-53.
[63] Weller S, Davis K. Condom effectiveness in reducing heterosexual HIV transmission. Cochrane Database Syst Rev. 2002;(1):CD003255.
[64] Camp SL. Limited access. Contraceptive costs may impede use. Conscience 1991;12:12-3.
[65] Blake SM, Ledsky R, Goodenow C, Sawyer R, Lohrmann D, Windsor R. Condom availability programs in Massachusetts high schools: relationships with condom use and sexual behavior. Am J Public Health 2003;93:955-62.
[66] Two programs designed to support condom use. Contracept Technol Update 1999;20:44-5.
[67] Cohen DA, Farley TA, Bedimo-Etame JR, et al. Implementation of condom social marketing in Louisiana, 1993 to 1996. Am J Public Health 1999;89:204-8.
[68] Cohen D, Scribner R, Bedimo R, Farley TA. Cost as a barrier to condom use: the evidence for condom subsidies in the United States. Am J Public Health 1999;89:567-8.
[69] Maxwell AE, Bastani R, Warda US. Condom use in young blacks and Hispanics in public STD clinics. Sex Transm Dis 1999;26:463-71.
[70] Egger M, Pauw J, Lopatatzidis A, Medrano D, Paccaud F, Smith GD. Promotion of condom use in a high-risk setting in Nicaragua: a randomised controlled trial. Lancet 2000;355:2101-5.
[71] Barnes JR. The impact of social marketing on HIV/AIDS. AIDS Anal Afr 1999;10:8-10.
[72] Cohen DA, Farley TA. Social marketing of condoms is great, but we need more free condoms. Lancet 2004;364:13-4.
[73] Herndon N. AIDS, STDs encourage use of barrier methods. Network 1993;14:18-20.
[74] Country watch: the Philippines. AIDS Health Promot Exch 1993;(3):7-8.
[75] Kaler A. The future of female-controlled barrier methods for HIV prevention: female condoms and lessons learned. Culture, Health and Sexuality, Nov/Dec 2004.
[76] Rosenberg MJ, Gollub EL. Commentary: methods women can use that may prevent sexually transmitted disease, including HIV. Am J Public Health 1992;82:1473-8.
[77] French P, Latka M, Gollub EL, et al. Female condoms as effective as male condoms in preventing sexually transmitted diseases. Abstract 60730. Presented at the Twelfth International Conference on AIDS, Geneva, 1998
[78] Gibson S, McFarland W, Wohlfeiler D, Scheer K, Katz MH. Experiences of 100 men who have sex with men using the Reality condom for anal sex. AIDS Educ Prev 1999;11:65-71.
[79] Maruschak, LM. HIV in prisons and jails, 1999. Bureau of Justice Statistics Bulletin. July 2001. (Accessed Jan. 26, 2005, at: http://www.ojp.usdoj.gov/bjs/pub/pdf/hivpj99.pdf.)
[80] Rapposelli KK, Kennedy MG, Miles JR, et al. HIV/AIDS in correctional settings: a salient priority for the CDC and HRSA. AIDS Educ Prev 2002;14(5 Suppl B):103-13.
[81] Krebs CP, Simmons M. Intraprison HIV transmission: an assessment of whether it occurs, how it occurs, and who is at risk. AIDS Educ Prev 2002;14(5 Suppl B):53-64.
[82] Ehrenstein V, Horton NJ, Samet JH. Inconsistent condom use among HIV-infected patients with alcohol problems. Drug Alcohol Depend 2004;73:159-66.
[83] Crosby GM, Stall RD, Paul JP, Barrett DC, Midanik LT. Condom use among gay/bisexual male substance abusers using the timeline follow-back method. Addiction Behavior 1996;21:249-57.
[84] New microbicides enter trials in United States. AIDS Alert 2005;20:10-1.
[85] Reinarman C, Levine HG. Crack in America: demon drugs and social justice. Berkeley: University of California Press; 1997.
[86] Denning P. Strategies for implementation of harm reduction in treatment settings. J Psychoactive Drugs 2001;33:23-6.
[87] Stancliff S. Drug treatment and harm reduction. In: Finkelstein R, Ramos SE, eds. *Manual for primary care providers: effectively caring for active substance users*. New York: New York Academy of Medicine; 2002. p. 71-108.
[88] Ksobiech K. A meta-analysis of needle sharing, lending, and borrowing behaviors of needle exchange program attenders. AIDS Educ Prev 2003;15:257-68.
[89] Shalala D. Evidence-based findings on the efficacy of syringe exchange programs [an analysis for the Assistant Secretary for Health and Surgeon General of the Scientific Research Completed Since April, 1988]. Washington: Department of Health and Human Services; May 17, 2000.

[90] Taylor A, Goldberg D, Hutchinson S, et al. Prevalence of hepatitis C virus infection among injecting drug users in Glasgow 1990-1996: are current harm reduction strategies working? J Infect 2000;40:176-83.
[91] Langendam MW, van Brussel GH, Coutinho RA, van Ameijden EJ. The impact of harm-reduction-based methadone treatment on mortality among heroin users. Am J Public Health 2001;91:774-80.
[92] Wechsberg WM, Lam WK, Zule WA, Bobashev G. Efficacy of a woman-focused intervention to reduce HIV risk and increase self-sufficiency among African American crack abusers. Am J Public Health 2004;94:1165-73.
[93] Avants SK, Margolin A, Usubiaga MH, Doebrick C. Targeting HIV-related outcomes with intravenous drug users maintained on methadone: a randomized clinical trial of a harm reduction group therapy. J Subst Abuse Treat 2004;26:67-78.
[94] Heller D, McCoy K, Cunningham C. An invisible barrier to integrating HIV primary care with harm reduction services: philosophical clashes between the harm reduction and medical models. Public Health Rep 2004;119:32-9.
[95] Grau LE, Arevalo S, Catchpool C, Heimer R. Expanding harm reduction services through a wound and abscess clinic. Am J Public Health 2002;92:1915-7.
[96] Stall R, Mills TC, Williamson J, et al. Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men. Am J Public Health 2003;93:939-42.
[97] Johnson SD, Cunningham-Williams RM, Cottler LB. A tripartite of HIV-risk for African American women: the intersection of drug use, violence, and depression. Drug Alcohol Depend. 2003 May 21;70:169-75.
[98] Gibson DR, Leamon MH, Flynn N. Epidemiology and public health consequences of methamphetamine use in California's Central Valley. J Psychoactive Drugs 2002;34**:**313-9.
[99] Ellis RJ, Childers ME, Cherner M, Lazzaretto D, Letendre S, Grant I. Increased human immunodeficiency virus loads in active methamphetamine users are explained by reduced effectiveness of antiretroviral therapy. J Infect Dis 2003;188:1820-6.
[100] Levounis P, Galanter M, Dermatis H, Hamowy A, De Leon G. Correlates of HIV transmission risk factors and considerations for interventions in homeless, chemically addicted and mentally ill patients. J Addict Dis 2002;21:61-72.
[101] Gowing L, Farrel M, Bornemann R, Ali R. Substitution treatment of injection opiod users for prevention of HIV infection. *The Cochrane Database of Systematic Reviews.* Issue 4. Art. No. CD004145, pub 2.
[102] Andersen M, Paliwoda J, Kaczynski R, et al. Integrating medical and substance abuse treatment for addicts living with HIV/AIDS: evidence-based nursing practice model. Am J Drug Alcohol Abuse 2003;29:847-59.
[103] Hoffman HL, Castro-Donlan CA, Johnson VM, Church DR. The Massachusetts HIV, hepatitis, addiction services integration (HHASI) experience: responding to the comprehensive needs of individuals with co-occurring risks and conditions. Public Health Rep 2004;119:25-31.
[104] Johnson BD, Rosenblum A, Kleber H. A new opportunity to expand treatment for heroin users in New York City: public policy challenges for bringing buprenorphine into drug treatment programs and general medical practice. White paper commissioned by DOHMH. January 18, 2003 (draft).
[105] Janssen RS, Holtgrave DR, Valdiserri RO, Shepherd M, Gayle HD. The serostatus approach to fighting the HIV epidemic: prevention strategies for infected individuals. Am J Public Health 2001;91:1019-24.
[106] Institute of Medicine, Committee on HIV Prevention Strategies in the United States. No time to lose: getting more from HIV prevention. Ruiz MS, Gable AR, Kaplan EH, Stoto MA, Fineberg HV, Trussell J, eds. Washington: National Academy Press; 2001.
[107] Valleroy L, Secura G, MacKellar D, et al. High HIV and risk behavior prevalence among 23 to 29 year old men who have sex with men in 6 U.S. cities. Paper presented at the Eighth Conference on Retroviruses and Opportunistic Infections, Chicago. February 2001.
[108] Wolitski RJ, Parsons JT, Gomez CA. Prevention with HIV-seropositive men who have sex with men. Lessons from the Seropositive Urban Men's Study (SUMS) and the Seropositive Urban Men's Study (SUMIT). J Acquir Immune Defic Syndr 2004;37:S101-9.
[109] Halkitis PN, Parsons JT, Wilton L. Barebacking among gay and bisexual men in New York City: explanations for the emergence of intentional unsafe behavior. Arch Sex Behav 2003;32:351-7.
[110] Van de Ven P, Rawstorne P, Nakamura T, Crawford J, Kippax S. HIV treatments optimism is associated with unprotected anal intercourse with regular and with casual partners among Australian gay and homosexually active men. Int J STD AIDS 2002;13:181-3.
[111] Huebner DM, Rebchook GM, Kegeles SM. A longitudinal study of the association between treatment optimism and sexual risk behavior in young adult gay and bisexual men. J Acquir Immune Defic Syndr 2004;37:1514-9.
[112] Elford J. HIV treatment optimism and high-risk sexual behaviour among gay men: the attributable population risk. AIDS 2004;18:2216-7.

[113] HIV incidence among young men who have sex with men. MMWR Morb Mortal Wkly Rep 2001;50:440-4.
[114] High-risk sexual behavior by HIV-positive men who have sex with men – 16 sites, United States, 2000-2002. MMWR Morb Mortal Wkly Rep 2004;53:891-4.
[115] Ciesielski CA. Sexually transmitted disease in men who sex with men: an epidemiological review. Curr Infect Dis Rep 2003;5:145-152.
[116] Primary and secondary syphilis among men who have sex with men – New York City, 2001. MMWR Morb Mortal Wkly Rep 2002;51**:**853-6
[117] Outbreak of syphilis among men who have sex with men – Southern California, 2000. MMWR Morb Mortal Wkly Rep 2001;50:117-20.
[118] Williams LA, Klausner JD, Whittington W, et al. Elimination and reintroduction of primary and secondary syphilis. Am J Public Health 1999;89:1093-7.
[119] Fox KK, del Rio C, Holmes KK, et al. Gonorrhea in the HIV era: a reversal in trends among men who have sex with men. Am J Public Health 2001;91:959-64.
[120] Mayer KH, Klausner JD, Handsfield HH. Intersecting epidemics and educable moments: sexually transmitted disease risk assessment and screening in men who have sex with men. Sex Transm Dis 2001;28:464-7.
[121] Marrazzo J. Sexually transmitted diseases in the HIV care setting: what's really going on down there? Top HIV Med 2004;12**:**57-60.
[122] Collis TK, Celum CL. The clinical manifestations and treatment of sexually transmitted diseases in human immunodeficiency virus-positive men. Clin Infect Dis 2001;32:611-22.
[123] Sheer S, Chu PL, Klausner KD, Katz MH, Schwarcz SK. Effect of highly active antiretroviral therapy on diagnoses of sexually transmitted diseases in people with AIDS. Lancet 2001;357:432-5.
[124] Wolitski RJ, Valdiserri RO, Denning PH, et al. Are we headed toward a resurgence in the HIV epidemic among men who have sex with men? Am J Public Health 2001;91:883-8.
[125] Lymphogranuloma venereum among men who have sex with men – Netherlands, 2003-2004. MMWR 2004;53:985-8.
[126] Two New York City residents diagnosed with rare sexually transmitted disease; same strain found in Europe [press release]. DOHMH. Feb. 2, 2005.
[127] Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect 1999;75:3-17.
[128] Morin SF, Koester KA, Steward WT, et al. Missed opportunities: prevention with HIV-infected patients in clinical care settings. J Acquir Immune Defic Syndr 2004;36:960-6.
[129] Marks G, Burris S, Peterman TA. Reducing sexual transmission of HIV from who know they are infected: the need for personal and collective responsibility. AIDS 1999;13:297-306.
[130] Wilson IB, Kaplan S. Physician-patient communication in HIV disease; the importance of patient, physician, and visit characteristics. J Acquir Immune Defic Syndr 2000;25:417-25.
[131] Margolis AD, Wolitshi RF, Parsons JT, et al. Are health care providers talking to HIV-seropositive patients about safer sex? AIDS 2001;15:2335-7.
[132] Advancing HIV prevention: new strategies for a changing epidemic – United States 2003. MMWR Morb Mortal Wkly Rep 2003;52:329-32.
[133] Myers JJ, Steward WT, Charlebois E, Koester KA, Maiorana A, Morin SF. Written clinic procedures enhance delivery of HIV "Prevention With Positives" counseling in primary health care settings. J Acquir Immune Defic Syndr 2004;37 Suppl 2:S95-100.
[134] Fisher JD, Cornman DH, Osborn CY, Amico KR, Fisher WA, Friedland, GA. Clinician-initiated HIV risk reduction intervention for HIV-positive persons. J Acquir Immune Defic Syndr 2004;37:S78-87.
[135] Richardson JL, Milam J, McCutchan A, et al. Effect of brief safer-sex counseling by medical providers to HIV-1 seropositive patients: a multi-clinic assessment. AIDS 2004;18:1179-86.
[136] Richardson JL, Milam J, Stoyanoff S, et al. Using patient risk indicators to plan prevention strategies in the clinical care setting. J Acquir Immune Defic Syndr 2004;37:S88-94.
[137] Wingood GM, DiClemente RJ, Mikhail I, et al. A randomized controlled trial to reduce HIV transmission risk behaviors and sexually transmitted diseases among women living with HIV: The WiLLOW Program. J Acquir Immune Defic Syndr 2004;37:S58-67.
[138] Rotheram-Borus MJ, Lee MB, Murphy DA, et al. Efficacy of a preventive intervention for youths living with HIV. Am J Public Health 2001;91:400-5.

[139] Rotheram-Borus MJ, Swendeman D, Comulada WS, Weiss RE, Lee M, Lightfoot M. Prevention for substance-using HIV-positive young people: telephone and in-person delivery. J Acquir Immune Defic Syndr 2004;37 Suppl 2:S68-77.
[140] Fisher JD, Cornman DH, Osborn CY, Amico KR, Fisher WA, Friedland GA. Clinician-initiated HIV risk reduction intervention for HIV-positive persons: formative research, acceptability, and fidelity of the Options Project. J Acquir Immune Defic Syndr 2004;37:S78-S87.
[141] Personal communication with Miriam Vega, Latino Commission on AIDS.
[142] Marks G, Richardson JL, Maldonado N. Self-disclosure of HIV infection to sexual partners. Am J Public Health 1991;81:1321-3.
[143] Landis SE, Schoenbach VJ, Weber DJ, et al. Results of a randomized trial of partner notification in cases of HIV infection in North Carolina. N Engl J Med 1992;326:101-6.
[144] Pavia AT, Benyo M, Niler L, et al. Partner notification for control of HIV: results after 2 years of a statewide program in Utah. Am J Public Health 1993;83:1418-24.
[145] Golen MR. HIV partner notification: a neglected prevention intervention. Sex Transm Dis 2002;29:472-5.
[146] Partner counseling and referral services to identify persons with undiagnosed HIV – North Carolina, 2001. MMWR Morb Mortal Wkly Rep 2003;52:1181-4.
[147] New e-mail option for STD partner notification; InSPOT postcards easy to send, popular with gay community [press release]. San Francisco Department of Public Health. Oct. 5, 2004.
[148] Using the internet for partner notification of sexually transmitted diseases – Los Angeles County, California, 2003. MMWR Morb Mortal Wkly Rep 2004;53:129-31.
[149] Landis SE, Schoenbach VJ, Weber DJ, et al. Results of a randomized trial of partner notification in cases of HIV infection in North Carolina. N Engl J Med. 1992;326:101-106
[150] Macke BA, Maher JE. Partner notification in the United States: an evidence-based review. Am J Prev Med 1999;17:230-42.
[151] Giesecke J, Ramstedt K, Granath F, et al. Efficacy of partner notification for HIV infection. Lancet 1991;338:1096-1100.
[152] NYS DOH. There's something I need to tell you: a step-by-step guide to telling your partners that they may have HIV. November 2003.
[153] NYC DOHMH. HIV/AIDS reporting and partner notification. City Health Information. Vol. 23, No. 7. November 2004.
[154] Walls CT, Lauby J, Lavelle K, Derby T, Bond L. Exposure to a community-level HIV prevention intervention: who gets the message. J Community Health 1998;23:281-99.
[155] Fenaughty AM, Namyniuk L. "Here's what I'd do...": condom promotion strategies proposed by high-risk women in Anchorage, Alaska. Qual Health Res 2004;14:23-38.
[156] Semaan S, Des Jarlais DC, Sogolow E, et al. A meta-analysis of the effect of HIV prevention interventions on the sex behaviors of drug users in the United States. J Acquir Immune Defic Syndr 2002;30 Suppl 1:S73-93.
[157] Seal DW, Ehrhardt AA. HIV-prevention-related sexual health promotion for heterosexual men in the United States: pitfalls and recommendations. Arch Sex Behav 2004;33:211-22.
[158] Johnson BT, Carey MP, Marsh KL, Levin KD, Scott-Sheldon LAJ. Interventions to reduce sexual risk for the human immunodeficiency virus in adolescents, 1985-2000. Arch Pediatr Adolesc Medicine 2003;157:381-8.
[159] Henderson SJ, Bernstein LB, George DM, Doyle JP, Paranjape AS, Corbie-Smith G. Older women and HIV: how much do they know and where are they getting their information? J Am Geriatr Soc 2004;52:1549-53.
[160] Johnson WD, Hedges LV, Diaz RM. Interventions to modify sexual risk behavior for preventing HIV infection in men who have sex with men. *The Cochrane Database of Systematic Reviews*, 2002, Issue 4.
[161] Hess LL. Prevention is still the best medicine. Condom social marketing campaign changes attitudes and actions in Guinea. Front Lines 1993;33:1-2.
[162] Zaire program expands to cover high-risk groups in two cities. Soc Mark Forum 1989 Fall;(17):2,10.
[163] Cameron DW, Simonsen JN, D'Costa LJ, et al. Female to male transmission of human immunodeficiency virus type 1: Risk factors for seroconversion in man. Lancet 1989;2:401-407.
[164] Laga M, Manoka A, Kivuvu M, et al. Non-ulcerative sexually transmitted diseases as risk factors for HIV-1 transmission in women: results from a cohort study. AIDS 1993;7:95-102.
[165] Reynolds SJ, Risbud AR, Shepherd ME, et al. Recent herpes simplex virus type 2 infection and the risk of human immunodeficiency virus type 1 acquisition in India. J Infect Dis 2003;187:1513-21.
[166] Siegal FP, Lopez C, Hakker GS, et al. Severe acquired immunodeficiency in male homosexuals manifested by chronic perianal ulcerative herpes simplex lesions. New Engl J Med 1981;305:1439-44.

[167] Maier JA, Bergman A, Ross MG. Acquired immunodeficiency syndrome manifested by chronic primary genital herpes. Am J Obstet Gynecol 1986;155:756-8.
[168] Laga M, Nzila N, Goeman J. The interrelationship of sexually transmitted diseases and HIV infection: Implications for the control of both epidemics in Africa. AIDS 1991;5(Suppl 1):S55-S64.
[169] Cohen MS, Hoffman IF, Royce R, et al. Reduction of concentration of HIV-1 in semen after treatment of urethritis: implications for prevention of sexual transmission of HIV-1. AIDSCAP Malawi Research Group. Lancet 1997;349:1868-73.
[170] Ghys P, Fransen K, Diallo MO, et al. The association between cervicovaginal HIV shedding, sexually transmitted diseases and immunosuppression in female sex workers in Abidjan, Côte d'Ivoire. AIDS. 1997;11:F85-F93.
[171] Barnes JR. The impact of social marketing on HIV/AIDS. AIDS Anal Afr 1999;10:8-10.
[172] Yaser Y. Extensive advertising. Turkey. Integration 1993;(38):32-3.
[173] Frank RA. The private sector and condom distribution: we can do more. Opinion. Aidscaptions 1995;2:10-3.
[174] Kennedy MG, Mizuno Y, Seals BF, Myllyluoma J, Weeks-Norton K. Increasing condom use among adolescents with coalition-based social marketing. AIDS 2000;14:1809-18.
[175] Cohen DA, Farley TA, Bedimo-Etame JR, et al. Implementation of condom social marketing in Louisiana, 1993 to 1996. Am J Public Health 1999;89:204-8.
[176] Finger WR. Condom use increasing. Network 1998;18:20-3.
[177] 57 Federal Register 26742, June 15, 1992.
[178] Jemmott JB, Jemmott LS, Fong GT. Abstinence and safer sex: a randomized trial of HIV sexual risk-reduction interventions for young African-American adolescents. JAMA 1998;279:1529-36.
[179] Kirby D, Barth R, Leland N, Fetro JV. Reducing the risk: impact of a new curriculum on sexual risk-taking. Fam Plann Perspect 1991;23:253-63.
[180] St. Lawrence JS, Brasfield TL, Jefferson KW, et al. Cognitive behavioral intervention to reduce African American adolescents' risk for HIV infection. J Consult Clin Psychol 1995;63:221-37.
[181] St. Lawrence JS, Crosby RA, Brasfield TL, O'Bannon RE 3rd. Reducing STD and HIV risk behavior of substance-dependent adolescents: A randomized controlled trial. J Consult Clin Psychol 2002;70:1010-21.
[182] Stanton BF, Li X, Ricardo I, et al. A randomized, controlled effectiveness trial of an AIDS prevention program for low-income African-American youths. Arch Pediatr Adolesc Med 1996;150:363-72.
[183] Kirby DB, Baumler E, Coyle KK, et al. The "Safer Choices" intervention: its impact on the sexual behaviors of different subgroups of high school students. J Adolesc Health 2004; 35:442-52.
[184] Basen-Engquist K, Coyle KK, Parcel GS, et al. Schoolwide effects of a multicomponent HIV, STD, and pregnancy prevention program for high school students. Health Educ Behav 2001;28:166-85.
[185] Wang LY, Davis M, Robin L, Collins J, Coyle K, Baumler E. Economic evaluation of Safer Choices: a school-based human immunodeficiency virus, other sexually transmitted diseases, and pregnancy prevention program. Arch Pediatr Adolesc Med. 2000;154:1017-24.
[186] Siegel DM, Aten MJ, Enaharo M. Long-term effects of a middle school- and high school-based human immunodeficiency virus sexual risk prevention intervention. Arch Pediatr Adolesc Med 2001;155:1117-26.
[187] A call to reform: strengthening HIV/AIDS education in New York City's public schools. New York AIDS Coalition; Jan. 4, 2004.
[188] Boyd FM, Simpson WM, Hart GJ, Johnstone FD, Goldberg, DJ. What do pregnant women think about the HIV test? A qualitative study. AIDS Care 1999;11:21-9.
[189] Chesney M, Smith A. Critical delays in HIV testing and care: the potential role of stigma. American Behavioral Scientist. 1999;42:1106-16.
[190] Malcolm A, Aggleton P, Bronfman M, Galvao J, Mane P, Verrall J. HIV-related stigmatization and discrimination: its forms and contexts. Critical Public Health 1998;8:347-70.
[191] Muyinda H, Selley J, Pickering H, Barton T. Social aspects of AIDS-related stigma in rural Uganda. Health and Place 1997;3:143-7.
[192] Raveis VH, Siegel K, Gorey E. Factors associated with HIV-infected women's delay in seeking medical care. AIDS Care 1998;10:549-62.
[193] Sowell R, Seals B, Moneyham L, Guillory J, Mizuno Y. Experiences of violence in HIV-positive women in the south-eastern United States of America. Journal of Advanced Nursing 1999;30,606-15.
[194] Petrak JA, Doyle AM, Smith A, Skinner C, Hedge B. Factors associated with self-disclosure of HIV serostatus to significant others. Br J Health Psychol 2001;6(Pt 1):69-79.
[195] Paxton S. Public disclosure of serostatus – the impact on HIV-positive people. Sex Health Exch 2000;(1):13-4.

[196] Hutchinson AB, Corbie-Smith G, Thomas SB, Mohanan S, del Rio C. Understanding the patient's perspective on rapid and routine HIV testing in an inner-city urgent care center. AIDS Educ Prev 2004;16:101-14.
[197] Herek GM, Capitanio JP, Widaman KF. Stigma, social risk, and health policy: public attitudes toward HIV surveillance policies and the social construction of illness. Health Psychol 2003;22:533-40.
[198] Casey MK, Allen M, Emmers-Sommer T, et al. When a celebrity contracts a disease: the example of Earvin "Magic" Johnson's announcement that he was HIV positive. J Health Commun 2003;8:249-65.
[199] Kalichman SC. Magic Johnson and public attitudes toward AIDS: a review of empirical findings. AIDS Educ Prev 1994;6:542-57.
[200] Langer LM, Zimmerman RS, Hendershot EF, Singh M. Effect of Magic Johnson's HIV status on HIV-related attitudes and behaviors of an STD clinic population. AIDS Educ Prev 1992;4:295-307.
[201] Tesoriero JM, Sorin MD, Burrows KA, LaChance-McCullough ML. Harnessing the heightened public awareness of celebrity HIV disclosures: "Magic" and "Cookie" Johnson and HIV testing. AIDS Educ Prev 1995;7:232-50.
[202] Advancing HIV Prevention Program Outline. Centers for Disease Control. July 23, 2003.
[203] Holtgrave DR, Anderson T. Utilizing HIV transmission rates to assist in prioritizing HIV prevention services. Int J STD AIDS 2004;15:789-92.
[204] Gonorrhea among men who have sex with men – selected sexually transmitted diseases clinics, 1993-1996. MMWR Morb Mortal Wkly Rep 1997:46:889-92.
[205] Resurgent bacterial sexually transmitted disease among men who have sex with men – King County, Washington, 1997-1999. MMWR Morb Mortal Wkly Rep 1999;48:773-7.
[206] Increases in unsafe sex and rectal gonorrhea among men who have sex with men – San Francisco, California, 1994-1997. MMWR Morb Mortal Wkly Rep 1999;48:45-8.
[207] Primary and secondary syphilis – United States, 1999. MMWR Morb Mortal Wkly Rep 2001;50:113-7.
[208] Stall RD, Hays RB, Waldo CR, Ekstrand M, McFarland W. The gay '90s: a review of research in the 1990s on sexual behavior and HIV risk among men who have sex with men. AIDS 2000;14(Suppl 3):S101-14.
[209] Crepaz N, Marks G. Towards an understanding of sexual risk behavior in people living with HIV: a review of social, psychological, and medical findings. AIDS 2002;16:135-49.
[210] Skrondal A, Eskild A, Thorvaldsen J. Changes in condoms use after HIV diagnosis. Scan J Public Health 2000; 28:71-6.
[211] Autran B, Carcelaint G, Li TS, et al. Restoration of the immune system with antiretroviral therapy. Immunol Lett 1999;66:207-11.
[212] Rosenberg ES, Altfeld M, Poon SH, et al. Immune control of HIV-1 after early treatment of acute infection. Nature 2000;407:523-6.
[213] Plana M, Garcia F, Gallart T, et al. Immunological benefits of antiretroviral therapy in very early stages of asymptomatic chronic HIV-1 infection. AIDS 2000;14:1921-33.
[214] Connor RI, Sheridan KE, Ceradini D, Choe S, Landau NR. Change in coreceptor use correlates with disease progression in HIV-1-infected individuals. J Exp Med 1997;185:621-8.
[215] Ledergerber B, Egger M, Erard V, et al. AIDS-related opportunistic illnesses occurring after initiation of potent anti-retroviral therapy: the Swiss HIV Cohort Study. JAMA 1999;282:2220-6.
[216] Turner BJ, Markson LE, McKee L, Houchens R, Fanning T. The AIDS-defining diagnosis and subsequent complications: a survival-based severity index. J Acquir Immune Defic Syndr 1991;4:1059-71.
[217] Vlahov D, Graham N, Hoover D, et al. Prognostic indicators for AIDS and infectious disease death in HIV-infected injection drug users: plasma viral load and CD4+ cell count. JAMA 1998;279:35-40.
[218] Holmberg SD, Palella FJ, Jr., Lichtenstein KA, Havlir DV. The case for earlier treatment of HIV infection. Clin Infect Dis 2004;39**:**1699-704.
[219] Porco TC, Martin JN, Page-Shafer KA, et al. Decline in HIV infectivity following the introduction of highly active antiretroviral therapy. AIDS 2004;18:81-8.
[220] Janssen RS, St Louis ME, Satten GA, et al. HIV infection among patients in U.S. acute care hospitals. Strategies for the counseling and testing of the hospital patients. N Engl J Med 1992;327:445-52.
[221] Advancing HIV prevention: new strategies for a changing epidemic – United States, 2003. MMWR Morb Mortal Wkly Rep 2003;52:329-32.
[222] Beckwith CG, Flanigan TP, del Rio C, et al. It is time to implement routine, not risk-based, HIV testing. Clin Infect Dis 2005;40:1037-40.
[223] Revised Guidelines for HIV Counseling, Testing, and Referral. MMWR Recommendations and Reports 2001;50(RR19);1-57.

[224] Routinely recommended HIV testing at an urban urgent-care clinic – Atlanta, Georgia, 2000. MMWR Morbid Mortal Weekly Rep 2001;50:538-41.
[225] Chen Z, Branson B, Ballenger A, Peterman TA. Risk assessment to improve targeting of HIV counseling and testing services of STD clinic patients. Sex Transm Dis 1998;25:539-43.
[226] Quinn TC, Glasser D, Cannon RO, et al. Human immunodeficiency virus infection among patients attending clinics for sexually transmitted diseases. N Eng J Med 1988;318:197-203.
[227] Erickson B, Wasserheit JN, Rompalo AM, Brathwaite W, Glasser D, Hook EW III. Routine voluntary HIV screening in STD clinic clients: characterization of infected clients. Sex Transm Dis 1990;17:194-9.
[228] Groseclose S, Erickson B, Quinn T, Glasser D, Campbell C, Hook E. Characteristics of patients accepting and refusing routine, voluntary HIV antibody testing in public sexually transmitted disease clinics. Sex Transm Dis 1994;21:31-5.
[229] Kassler WJ, Zenilman JM, Erickson B, Fox R, Peterman TA, Hook EW III. Seroconversion in patients attending sexually transmitted disease clinics. AIDS 1994;8:351-5
[230] Asch SM, London AS, Barnes PF, Gelberg L. Testing for human immunodeficiency virus infection among tuberculosis patients in Los Angeles. Am J Respir Crit Care Med 1997;155:378-81.
[231] Pitchenik AE, Burr J, Suarez M, Fertel D, Gonzalez G, Moas C. Human T-cell lymphotropic virus-III (HTLV-III) seropositivity and related disease among 71 consecutive patients in whom tuberculosis was diagnosed. Am Rev Respir Dis 1987;135:875-9.
[232] Shafer RW, Chirgwin KD, Glatt AE, Dahdouh MA, Landesman SH, Suster B. HIV prevalence, immunosuppression, and drug resistance in patients with tuberculosis in an area endemic for AIDS. AIDS 1991;5:399-405.
[233] Theuer CP, Hopewell PC, Elias D, Schecter GF, Rutherford GW, Chaisson RE. Human immunodeficiency virus infection in tuberculosis patients. J Infect Dis 1990;162:8-12.
[234] Paltiel AD, Weinstein MC, Kimmel AD, et al. Expanded screening for HIV in the United States – an analysis of cost-effectiveness. New Engl J Med 2005;352:586-95.
[235] Sanders GD, Bayoumi AM, Sundaram V, et al. Cost-effectiveness of screening for HIV in the era of highly active antiretroviral therapy. New Engl J Med 2005;352:570-85.
[236] Irwin KL, Valdiserri RO, Holmberg SD. The acceptability of voluntary HIV antibody testing in the United States: a decade of lessons learned. AIDS 1996;10:1707-17.
[237] Simpson WM, Johnstone FD, Goldberg DJ, Gormley SM, Hart GJ. Antenatal HIV testing: assessment of a routine voluntary approach. BMJ 1999;318:1660-1.
[238] Wykoff RF, Jones JL, Longshore ST, et al. Notification of the sex and needle-sharing partners of individuals with human immunodeficiency virus in rural South Carolina: 30 month experience. Sex Transm Dis 1991;18:217-22.
[239] Lee JH, Mitchell B, Nolt B, Robbins B, Thomas MC, Branson BM. Targeted opt-in vs. routine opt-out HIV testing in an STD clinic [Abstract 153]. Presented at the 1999 National HIV Prevention Conference, Atlanta, August 29-September 1, 1999.
[240] Rahimian A, Driscoll M, Taylor D, Cohen M. Barriers to building a comprehensive system of HIV counseling and testing by consent to women of reproductive age in Chicago, Illinois [Abstract Tu.D. 2772]. In: Proceedings of the XI International Conference on AIDS. Vancouver, B.C.; July 7-12, 1996.
[241] Voluntary HIV testing as part of routine medical care – Massachusetts, 2002. MMWR Morb Mortal Wkly Rep 2004;53:523-6.
[242] Rothman RE, Ketlogetswe KS, Dolan T, Wyer PC, Kelen GD. Preventive care in the emergency department: should emergency departments conduct routine HIV screening? A systematic review. Acad Emerg Med 2003;10:278-85.
[243] Walensky RP, Losina E, Steger-Craven KA, Freedberg KA. Identifying undiagnosed human immunodeficiency virus: the yield of routine, voluntary inpatient testing. Arch Intern Med 2002;162:887-92.
[244] Kassler WJ, Dillon BA, Haley C, et al. On-site, rapid HIV testing with same-day results and counseling. AIDS 1997;11:1045-51.
[245] Kelen GD, Shahan JB, Quinn TC. Emergency department-based HIV screening and counseling: experience with rapid and standard serologic testing. Ann Emerg Med 1999;33:147-55.
[246] Malonza IM, Richardson BA, Kreiss JK, et al. The effect of rapid HIV-1 testing on uptake of perinatal HIV-1 interventions: a randomized clinical trial. AIDS 2003;17:113-8.
[247] Liddicoat RV, Horton NJ, Urban R, Maier E, Christiansen D, Samet JH. Assessing missed opportunities for HIV testing in medical settings. J Gen Intern Med 2004;19:349-56.
[248] Barbacci M, Repke JT, Chiasson RE. Routine prenatal screening for HIV infection. Lancet 1991;337:709-11.

[249] Lindsay MK, Johnson N, Peterson HB, Willis S, Williams H, Klein L. Human immunodeficiency virus infection among inner-city adolescent parturients undergoing routine voluntary screening: July 1987 to March 1991. Am J Obstet Gynecol 1992;167:1096-9.
[250] Spielberg F, Branson BM, Goldbaum GM, Kurth A, Wood RW. Designing an HIV counseling and testing program for bathhouses: the Seattle experience with strategies to improve acceptability. J Homosex 2003;44:203-20.
[251] Strauss SM, Des Jarlais DC, Astone J, Vassilev ZP. On-site HIV testing in residential drug treatment units: results of a nationwide survey. Public Health Rep 2003;118:37-43.
[252] Weinhardt LS, Carey MP, Johnson BT, Bickham NL. Effects of HIV counseling and testing on sexual risk behavior: a meta-analytic review of published research, 1985-1997. Am J Public Health 1999;89:1397-405.
[253] Efficacy of voluntary HIV-1 counselling and testing in individuals and couples in Kenya, Tanzania, and Trinidad: a randomized trial. The Voluntary HIV-1 Counselling and Testing Efficacy Study Group. Lancet 2000;356:103-12.
[254] Stroebel RJ, Scheitel SM, Fitz JS, et al. A randomized trial of three diabetes registry implementation strategies in a community internal medicine practice. Jt Comm J Qual Improv 2002;28:441-50.
[255] Patel PH, Welsh C, Foggs MB. Improved asthma outcomes using a coordinated care approach in a large medical group. Disease Management 2004;7:102-11.
[256] Benedetti R, Flock B, Pedersen S, Ahern M. Improved clinical outcomes for fee-for-service physician practices participating in a diabetes care collaborative. Jt Comm J Qual Saf 2004;30:187-94.
[257] McAlister FA, Lawson FM, Teo KK, Armstrong PW. A systematic review of randomized trials of disease management programs in heart failure. Am J Med 2001;110:378-84.
[258] Brown CL, Tangsinmankong N, Emmanuel PJ. Improving care of HIV-infected patients in the outpatient setting with patient data flow sheets. J Assoc Nurses AIDS Care 2002;13:58-63.
[259] Vlahov D, Galai N, Safaeian M, et al. Effectiveness of highly active antiretroviral therapy among injection drug users with late-stage human immunodeficiency virus infection. Am J Epidemiol 2005;161:1-14.
[260] Gardner L, Metsch L, Louglin A, et al. for the ARTAS Study Group. Initial results of the Antiretroviral Treatment Access Studies (ARTAS): efficacy of case management trial [abstract book, 2003, Abstract M3-3B1301]. National Prevention Conference; Atlanta, Georgia; July 27-30, 2003.
[261] Harris SK, Samples CL, Keenan PM, Fox DJ, Melchiono MW, Woods ER. Outreach, mental health, and case management services: can they help to retain HIV-positive and at-risk youth and young adults in care? Matern Child Health J 2003;7:205-18.
[262] Woods ER, Samples CL, Melchiono MW, Harris SK. Boston HAPPENS Program: HIV-positive, homeless, and at-risk youth can access care through youth-oriented HIV services. Semin Pediatr Infect Dis 2003;14:43-53.
[263] Woods ER, Samples CL, Melchiono MW, Keenan PM, Fox DJ, Harris SK. Initiation of services in the Boston HAPPENS Program: human immunodeficiency virus-positive, homeless, and at-risk youth can access services AIDS Patient Care STDS 2002;16:497-510.
[264] Tenner AD, Trevithick LA, Wagner V, Burch R. Seattle YouthCare's prevention, intervention, and education program: a model of care for HIV-positive, homeless, and at-risk youth. J Adolesc Health 1998;23(2 Suppl):96-106.
[265] Conviser R, Pounds MB. The role of ancillary services in client-centred systems of care. AIDS Care 2002;14 Suppl 1:S119-31.
[266] Magnus M, Schmidt N, Brown B, Kissinger PJ. A profile of an HIV-and child-specific programme in New Orleans, Louisiana, USA. AIDS Care 2002;14 Suppl 1:S85-94.
[267] Ashman JJ, Conviser R, Pounds MB. Associations between HIV-positive individuals' receipt of ancillary services and medical care receipt and retention. AIDS Care 2002;14 Suppl 1:S109-18.
[268] Chan D, Absher D, Sabatier S. Recipients in need of ancillary services and their receipt of HIV medical care in California. AIDS Care 2002;14 Suppl 1:S73-83.
[269] Messeri PA, Abramson DM, Aidala AA, Lee F, Lee G. The impact of ancillary HIV services on engagement in medical care in New York City. AIDS Care 2002 Aug;14 Suppl 1:S15-29.
[270] Conover CJ, Whetten-Goldstein K. The impact of ancillary services on primary care use and outcomes for HIV/AIDS patients with public insurance coverage. AIDS Care 2002;14 Suppl 1:S59-71.
[271] Lo W, MacGovern T, Bradford J. Association of ancillary services with primary care utilization and retention for patients with HIV/AIDS. AIDS Care 2002;14 Suppl 1:S45-57.
[272] Sherer R, Stieglitz K, Narra J, et al. HIV multidisciplinary teams work: support services improve access to and retention in HIV primary care. AIDS Care 2002;14 Suppl 1:S31-44.
[273] Knowlton AR, Hoover DR, Chung SE, Celentano DD, Vlahov D, Latkin CA. Access to medical care and service utilization among injection drug users with HIV/AIDS. Drug Alcohol Depend 2001;64:55-62.

[274] Katz MH, Cunningham WE, Fleishman JA, et al. Effect of case management on unmet needs and utilization of medical care and medications among HIV-infected persons. Ann Intern Med 2001;135(8 Pt 1):557-65.
[275] Katz MH, Cunningham WE, Mor V, et al. Prevalence and predictors of unmet need for supportive services among HIV-infected persons: impact of case management. Med Care 2000;38:58-69.
[276] Feldman A. Ethnographic evaluation of SRO harm reduction outreach of the Center for AIDS Outreach and Prevention. National Development and Research Institutes Inc.: Report to Housing Opportunities for People with AIDS and Post Graduate Center for Mental Health. Available through New York City Mayor's Office of AIDS Policy; 1998.
[277] Elias CJ, Inui TS. When a house is not a home: exploring the meaning of shelter among chronically homeless older men. Gerontologist 1993;33:396-402.
[278] Kinzel D. Self-identified health concerns of two homeless groups. West J Nurs Res 1991;13:181-94.
[279] Masson CL, Sorensen JL, Phibbs CS, Okin RL. Predictors of medical service utilization among individuals with co-occurring HIV infection and substance abuse disorders. AIDS Care 2004;16:744-55.
[280] An assessment of the housing needs of persons with HIV/AIDS: New York City Eligible Metropolitan Statistical Area. Final Report. January 2005.
[281] Bing EG, Burnam MA, Longshore D, et al. Psychiatric disorders and drug use among human immunodeficiency virus-infected adults in the United States. Arch Gen Psychiatry 2001;58:721-8.
[282] Cournos F, Horwath E, Guido JR, McKinnon K, Hopkins N. HIV-1 infection at two public psychiatric hospitals in New York City. AIDS Care 1994;6:443-52.
[283] Pao M, Lyon M, D'Angelo LJ, Schuman WB, Tipnis T, Mrazek DA. Psychiatric diagnoses in adolescents seropositive for the human immunodeficiency virus. Arch Pediatr Adolesc Med 2000;154:240-4
[284] Katz MH, Douglas JM Jr, Bolan GA, et al. Depression and use of mental health services among HIV-infected men. AIDS Care 1996;8:433-42.
[285] Shapiro MF, Morton SC, McCaffrey DF, et al. Variations in the care of HIV-infected adults in the United States: results from the HIV Cost and Services Utilization Study. JAMA 1999;281:2305-15.
[286] Aidala A, Messeri P, Abramson D, Lee G. Housing and health care among persons living with HIV/AIDS: update report #39. New York: Joseph L Mailman School of Public Health, Columbia University; 2001.
[287] Cook JA, Grey D, Burke J, et al. Depressive symptoms and AIDS-related mortality among a multisite cohort of HIV-positive women. Am J Public Health 2004;94:1133-40.
[288] Cook JA, Cohen MH, Burke J, et al. Effects of depressive symptoms and mental health quality of life on use of highly active antiretroviral therapy among HIV-seropositive women. J Acquir Immune Defic Syndr 2002;30:401-9.
[289] Johnson-Masotti AP, Weinhardt LS, Pinkerton SD, Otto-Salaj LL. Efficacy and cost-effectiveness of the first generation of HIV prevention interventions for people with severe and persistent mental illness. J Ment Health Policy Econ 2003;6:23-35.
[290] Valenstein M, Klinkman M, Becker S, et al. Concurrent treatment of patients with depression in the community: provider practices, attitudes, and barriers to collaboration. Journal of Family Practice 1999;48:180-7.
[291] Dodds S, Nuehring EM, Blaney NT, et al. Integrating mental health services into primary HIV care for women: the Whole Life project. Public Health Rep 2004;119:48-59.
[292] Zweben JE. Severely and persistently mentally ill substance abusers: clinical and policy issues. J Psychoactive Drugs 2000;32:383-9.
[293] Acuff C, Archambeault J, Greenberg B, Hoeltzel J, McDaniel JS, Meyer P, et al. Mental health care for people living with or affected by HIV/AIDS: a practical guide. Research Triangle Park, N.C.: Research Triangle Institute; 1999.
[294] Shapiro MF, Morton SC, McCaffrey DF, et al. Variations in the care of HIV-infected adults in the United States: results from the HIV Cost and Services Utilization Study. JAMA 1999;281:2305-15.
[295] The HIV/AIDS Treatment Adherence, Health Outcomes and Cost Study: conceptual foundations and overview. AIDS Care 2004;16 Suppl 1:S6-21.
[296] Kitihata MM, Koepsell TD, Deyo RD, et al. Physicians' experience with the acquired immunodeficiency syndrome as a factor in patients' survival. N Engl J Med 1996;334:701-6.
[297] Stone VE, Seage GR, Hertz T, et al. The relation between hospital experience and mortality for patients with AIDS. JAMA 1992;268:2655-61.
[298] Brosgart CL, Mitchell TF, Coleman RL, et al. Clinical experience and choice of drug therapy for human immunodeficiency virus disease. Clin Infect Dis 1999;28:14-22.
[299] Gardner LI, Holmberg SD, Moore J, et al. Use of highly active antiretroviral therapy in HIV-infected women: impact of HIV specialist care. J Acquir Immune Defic Syndr 2002;29:69-75.

[300] Golin CE, Smith SR, Reif S. Adherence counseling practices of generalist and specialist physicians caring for people living with HIV/AIDS in North Carolina. J Gen Intern Med 2004;19:16-27.
[301] Bero L, Jadad A. How consumers and policymakers can use systematic reviews for decision making. Ann Intern Med 1997; 127:37-42.
[302] Kitahata MM, Dillingham PW, Chaiyakunapruk N, et al. Electronic human immunodeficiency virus (HIV) clinical reminder system improves adherence to practice guidelines among the University of Washington HIV Study Cohort. Clin Infect Dis 2003;36:803-811.
[303] Grimshaw JM, Russell IT. Effect of clinical guidelines on medical practice: a systematic review of rigorous evaluations. Lancet 1993;342:1317-22.
[304] Paterson DL, Swindells S, Mohr J, et al. Adherence to protease inhibitor therapy and outcomes in patients with HIV infection. Ann Intern Med 2000;133:21-30.
[305] Friedland GH, Williams A. Attaining higher goals in HIV treatment: the central importance of adherence. AIDS 1999;13:S61-72.
[306] Katzenstein DA. Adherence as a particular issues with protease inhibitors. J Assoc Nurses AIDS Care 1997;8 Suppl:10-7.
[307] Hirsch MS, Conway B, D'Aquila RT. Antiretroviral drug resistance testing in adults with HIV infection: implications for clinical management. JAMA 1998;279:1984-91.
[308] Weinberg MA, Friedland G. Public health implications of antiretroviral therapy and HIV drug resistance. JAMA 1998;279:1977-83.
[309] Maggiolo F, Ripamonti D, Arici C, et al. Simpler regimens may enhance adherence to antiretrovirals in HIV-infected patients. HIV Clin Trials 2002;3:371-8.
[310] Berg KM, Demas PA, Howard AA, Schoenbaum EE, Gourevitch MN, Arnsten JH. Gender differences in factors associated with adherence to antiretroviral therapy. J Gen Intern Med 2004;19:1111-7.
[311] Reynolds NR, Testa MA, Marc LG, et al. Factors influencing medication adherence beliefs and self-efficacy in persons naive to antiretroviral therapy: a multicenter, cross-sectional study. AIDS Behav 2004;8:141-50.
[312] Palmer NB, Salcedo J, Miller AL, Winiarski M, Arno P. Psychiatric and social barriers to HIV medication adherence in a triply diagnosed methadone population. AIDS Patient Care STDS 2003;17:635-44.
[313] Murphy DA, Sarr M, Durako SJ, Moscicki AB, Wilson CM, Muenz LR. Barriers to HAART adherence among human immunodeficiency virus-infected adolescents. Arch Pediatr Adolesc Med 2003;157:249-55.
[314] Murphy DA, Greenwell L, Hoffman D. Factors associated with antiretroviral adherence among HIV-infected women with children. Women Health 2002;36:97-111.
[315] Haddad M, Inch C, Glazier RH, et al. Patient support and education for promoting adherence to highly active antiretroviral therapy for HIV/AIDS. *The Cochrane Database of Systematic Reviews.* 2000, Issue 3. Art. No. CD001442.
[316] Geletko SM, Poulakos MN. Pharmaceutical services in an HIV clinic. Am J Health Syst Pharm 2002;59:709-13.
[317] Malcolm SE, Ng JJ, Rosen RK, Stone VE. An examination of HIV/AIDS patients who have excellent adherence to HAART. AIDS Care 2003 Apr;15:251-61.
[318] HIV transmission among black college student and non-student men who have sex with men – North Carolina, 2003. MMWR Morb Mortal Wkly Rep 2004;53:731-4.