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# Impact of Socio-Medical Factors on the Prevention and Treatment of HIV/AIDS Among Specific Subpopulations

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## 1. Introduction

The first cases of what would later be known as AIDS were first identified in the United States in June of 1981 (CDC, 1981). Since this recognition of the HIV/AIDS epidemic in the United States, patterns of morbidity and mortality have been altered, sexual practices scrutinized, and healthcare institutions overwhelmed. Today there are an estimated 1.1 million adults and adolescents living with HIV infection (CDC, 2008), and approximately 56,000 new HIV infections are occurring in the U.S. every year (CDC, 2010; Hall et al., 2008). Current HIV incidence rates have been stagnant since 2000 and are considerably lower than the mid 1980's peak of new HIV infections (*see figure 1*). Incident rates during the 1980's reached 130,000. The advent of highly active antiretroviral therapy (HAART) has helped to slow the progression of HIV to AIDS. However, antiretroviral drug resistant HIV-1 has been noted since 1993 (Eshleman et al., 2007). Today it is possible for people to contract a strain of HIV-1 that is resistant to up to three antiretroviral drug classes (Eshleman et al., 2007). Despite stagnant rates of new HIV infections, and modern biomedical convention that indicates equal susceptibility to contraction of HIV, the epidemic still disproportionately impacts specific subpopulations in the United States and some specific groups show increased incidence of HIV when compared to the general population. These groups often experience political and economic subordination, disenfranchisement, and stigmatization. The most frequently researched of these subpopulations include; persons who are substance abusers (specifically injection drug users), men who have sex with men (MSM), Latino and African American women, older adults (over the age of 50), and adolescents (ages 13-24). What factors contribute to increase prevalence of HIV among these groups? Access and utilization of health services in the early stages of HIV infection can positively impact survival time (Andersen et al., 2000; Bozzette et al., 2003; Montgomery et al., 2002). The use of HAART is credited with declining rates of HIV associated morbidity, hospitalizations and mortality (Bozzette et al., 2003; Montgomery et al., 2002). Interventions for modifying risk behavior and providing current, appropriate health education and medical care have been tested and proven effective in subpopulations. However, in order to develop and fund effective interventions, an understanding of the social determinants of illness within these groups proves advantageous.

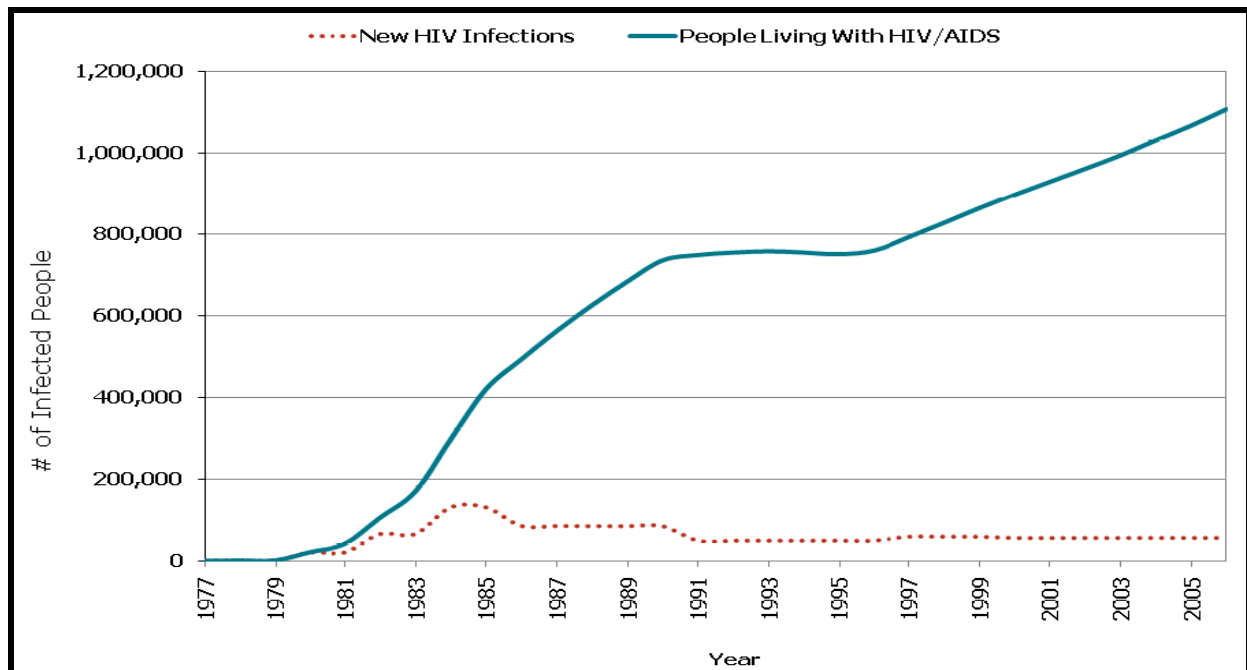


Fig. 1. Estimates of Annual HIV Infection and People Living with HIV/AIDS (1977-2006). (Source: The White House Office of National AIDS Policy, 2010)

This article is a meta-analysis that synthesizes research focusing on the five aforementioned groups. The impetus of this article is to illustrate the unique impact of HIV on each subpopulation by evaluating social factors, social networking, barriers to the receipt of care, unique factors that influence pathogenesis among each group, and to highlight specific interventions developed for each group. Thus, a socio-medical perspective that includes the use of biomedical data, demographic statistics, and an understanding of the individual illness and treatment experience, will be used to analyze increased HIV/AIDS rates amongst these groups.

## 2. Men Who Have Sex with Men<sup>1</sup> (MSM)

At its onset the HIV epidemic was disproportionately present in the gay community and in resources focused on addressing death and dying (Beckerman & Fontana, 2009). Sexual activity between same sex male partners and intravenous drugs represent some of the most frequent routes of HIV transmission and both groups were highly stigmatized by the general public. In the infancy of HIV/AIDS a strong relationship existed between the stigmatization of persons with same sex orientation and the stigmatization of HIV (Brooks et al., 2005; Edgar et al., 2008). Early in the epidemic, the gay, lesbian, bisexual and transgender (LGBT) community developed its own education campaigns and institutions to reduce HIV in the wake of inaction by government and other institutions (Office of National AIDS Policy, 2010). This coupled with the 1996 introduction of highly active antiretroviral therapy (Beckerman & Fontana, 2009; Brennan et al., 2009; Brennan et al., 2010) changed the perception of HIV as a terminal disease and placed emphasis on adherence to medication,

<sup>1</sup>The term men who have sex with men (MSM) is used in CDC surveillance systems. It indicates behaviors that transmit HIV infections, rather than how individuals self-identify in terms of sexuality.

quality of life and prevention. The demography of HIV/AIDS has changed in the United States, but the majority of newly HIV infections continue to occur among MSM (Benotsch et al., 2002; Brennan et al., 2010). CDC surveillance data indicate that while MSM represent only 2 %<sup>2</sup> of the U.S. population they account for 53% ( $n=28,720$ ) (see figure 2) of the newly reported HIV infections (Bachmann et al., 2009; Brennan et al., 2010; CDC, 2008; CDC, 2011; Hall et al., 2008; Office of National AIDS Policy, 2010). Men who have sex with men is one of the only at risk populations that have reported a steady increase in annual numbers of new HIV infections (CDC, 2010; Hall et al., 2008). Diagnoses of HIV in this subpopulation increased 17% from 2005- 2008 (CDC, 2008; CDC, 2010). After initial momentum to decrease HIV/AIDS in the LBGT population, what factors have promoted increase in the rates of infection among MSMs? Emerging factors that may contribute to increased risk for MSMs include “AIDS burnout,” (Wolitski et al., 2001) treatment optimism, faulty harm reduction techniques, and sexual risk taking behavior.

AIDS burnout stems from years of exposure to prevention messages and long term efforts to promote safe sex among MSMs and is an independent predictor of unprotected anal intercourse among this group (Wolitski et al., 2001). Often the outdated or overly simplistic safer sex messages (“no glove, no love”) have decreased the visibility of HIV prevention messages in some MSM communities (Wolitski et al., 2001). AIDS burnout, coupled with a series of interconnected contextual factors, helps to elucidate the increase in prevalence of HIV among MSMs.

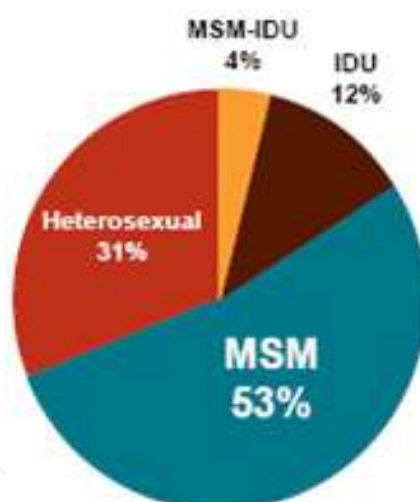


Fig. 2. Estimates of New HIV Infections in the United States, By Transmission Category, 2006. (Sources; CDC, 2010.)

Since the introduction of HAART in 1996, being diagnosed with HIV is perceived as less serious because of the availability of drugs to mitigate the impact of the virus (Bakeman, 2007; Brennan, 2010). This concept defined as treatment optimism is theorized to play a role in increased sexual risk taking behavior among MSMs (Brennan et al., 2009; Brennan et al., 2010). HIV positive MSMs were more likely to report increased treatment optimism than HIV negative MSMs. This belief is grounded in some scientific research that suggests that

<sup>2</sup> The estimate of 2% is based upon the range of 1.4-2.7% in the overall population age 13 and older who engaged in same sex behavior in the last five years.

HIV transmission can be mitigated when infected persons are receiving HAART therapy and has a reduced viral load (Brennan et al., 2010; Quinn et al., 2000). This coupled with the availability of postexposure therapy and viral load monitoring lessens the perceived risk of contracting HIV. However, even if risk is lessened on an individual level, increases in risk taking behavior have implications for population based concern for increased HIV transmission. Yet another social factor that has influenced treatment optimism is diminished public attention. Converse to reports of AIDS burnout, it's believed that in general, media and public attention to HIV/AIDS has decreased since the onset of the epidemic and many no longer view it as a public health emergency. A 2009 Kaiser Family Foundation survey found only 45% of respondents indicated hearing messages highlighting the plight of HIV/AIDS compared to 70% in 2004 (Office of National AIDS Policy, 2010).

In addition to AIDS burnout and treatment optimism, research indicates an increase in sexual risk behavior among MSMs (Benotsch et al., 2002; Blackwell, 2008; Brennan, 2010; Brewer et al., 2006; Parsons, 2005; Van Kesteren, 2007; Wolitski et al., 2001). It is possible that the practice of faulty harm reduction sexual techniques has contributed to the increase of new HIV cases among MSMs. Some of these techniques include HIV positive men positioning themselves as the receptive partner for unprotected anal sex, as a method of strategic positioning designed to reduce sexual risk (Parsons, 2005; Van De Ven et al., 2002). Other risk reduction efforts include serosorting or limiting sexual partners to seroconcordant (similar) HIV status (Barrett et al., 1998; Eaton et al., 2009; Parsons, 2005). Consequently, HIV positive males limit sexual intercourse to other HIV positive males. Conversely, HIV negative males will seek similar partners. Faulty rationalization assumes a skewed perceived susceptibility to contracting HIV, that sexual partners are aware of their HIV status, and/or willing to truthfully disclose this information (Eaton et al., 2009; Parsons, 2005).

Levels of HIV stigma associated with homosexuality reduced as universal susceptibility is encouraged via public health awareness campaigns. UNAIDS defines HIV stigmatizing as a "social process of devaluation that reinforces negative thoughts about a persons living with HIV and AIDS" (Brooks et al., 2005). However, social bias still remains, which in turn creates limited dating outlets (Brooks, 2005). Like other disenfranchised groups, MSMs have few places in which they can meet without fear of social consequences. Several outlets include gay pride cultural events, friendship networks, and sexually charged environments (gay bars, bath houses, and public places) (Bull et al., 2004; Parson, 2005; Van Kersteren, 2007). It is in these sexually charged environments that spontaneous, unexpected and unprotected sex take place. Intentional acts of unprotected sex have become colloquially known as "bare-backing" (Blackwell, 2008; Parsons, 1995). A newly emerging outlet that is of particular interest is the internet. This medium provides a new way of meeting sexual partners without scrutiny (Benotsch et al., 2002; Blackwell et al., 2008; Bull et al., 2004). Description of online sex partner seeking highlights a three stage process that often includes the use of MSM chat rooms, meetings in person, and then ultimately sexual activity (Benotsch et al., 2002; Bull et al., 2004).

## 2.1 Interventions

Strategies for reducing HIV among MSMs have included; (1) expanded HIV testing so that infected persons can be identified, treated and the risk of transmitting the virus is minimized; (2) individual, small group and community level interventions to reduce risk

behaviors ;(3) promotion of condom use ;and the (4) detection and treatment of sexually transmitted diseases (CDC, 2011). Two of the latest prevention strategies include cyberspace educational prevention approaches and Pre-exposure Prophylaxis Initiatives (PrEP). The internet is emerging as an important venue for forming sexual networks among MSMs (Benotsch, et al., 2002). To create effective interventions that are specific to MSMs cyberspace interventions have varying components that include safer sex guidelines, emailing systems for partner notification and psychosocial components designed to increase motivation for behavior change (Benotsch, et al., 2002). Pre-exposure prophylaxis is designed to prevent the acquisition of HIV infection among persons uninfected but exposed to MSMs. Preliminary findings indicate that daily orally administered antiretrovirals may partially reduce HIV among MSMs when provided with regular monitoring of HIV status and ongoing risk reduction adherence counseling (CDC, 2011).The CDC and other U.S Public Health Service (PHS) agencies are developing guidelines for the use of PrEP among MSMs at high risk for HIV.

### **3. Substance abusers: Injection Drug Users (IDUs)**

Transmission of HIV in persons who use illicit drugs remains a major public health challenge. Intravenous (IV) drug use has been a driving force for the spread of HIV/AIDS and contributes substantially to the current HIV burden in the United States (Des Jarlais et al., 1989; Riley, et al., 2010; Rudolph et al., 2010a; Rudolph, et al., 2010b). People who inject drugs are a relatively small share of the U.S. population, but they are disproportionately represented in the HIV epidemic. Of the 16 million drug injection drug users (IDUs) worldwide, an approximately 3 million are HIV infected (Mathers et al. 2008; Vlahov et al., 2010). In the United States there are an estimated 1 million IDUs, yet injection drug use accounts for approximately 16% of new HIV infections (Brady et al., 2008; Hall et al., 2008). Intravenous injection of drugs provides the user with the strongest drug effect with the least cost. Injection into the vein leads to a strong drug reaction (effective crossing of the blood brain barrier) and it's dissolution in liquid prior to injection insures usage of most of the purchased drug, unlike the lost of product associated with smoking or inhaling drugs (Des Jarlais & Seman, 2008). Unfortunately, the injection process also allows a direct route for HIV to enter the human body. While the CDC acknowledged the first cases of HIV among MSMs in 1981, Friedman and colleagues have argued that HIV was present in the IDU New York city population since the mid to late 1970's (2007) (figure 3.1). However infections in this sub-population were ignored due to a hostile legal and sociopolitical environment, influenced by the federal government's "War on Drugs" (Des Jarlais et al., 1989; Des Jarlais et al., 1994; Des Jarlais et al., 2000; Freidman et al., 2007; Santibanez et al., 2006; Stoneburner et al., 1988). This slowed the public health response to the epidemic among IDUs. However, by the mid 1980's the visibility of characteristics of AIDS among IDUs was evident and could no longer be ignored.

Understanding the rates of HIV/AIDS among IDUs proves an arduous task. Drug users tend to be less conspicuous than other high risk groups. Additionally, there is a general lack of advocacy and support groups among persons with substance abuse addiction, often leading to limited information about HIV among this population. Moreover, IDUs represent a heterogeneous group of people whose behavior varies and often impacts seroprevalence. In addition to injection drug use, an IDU may also; (1) be a MSM; (2) or experience high risk heterosexual contact (Santibanez et al., 2006). However, decades of research has highlighted

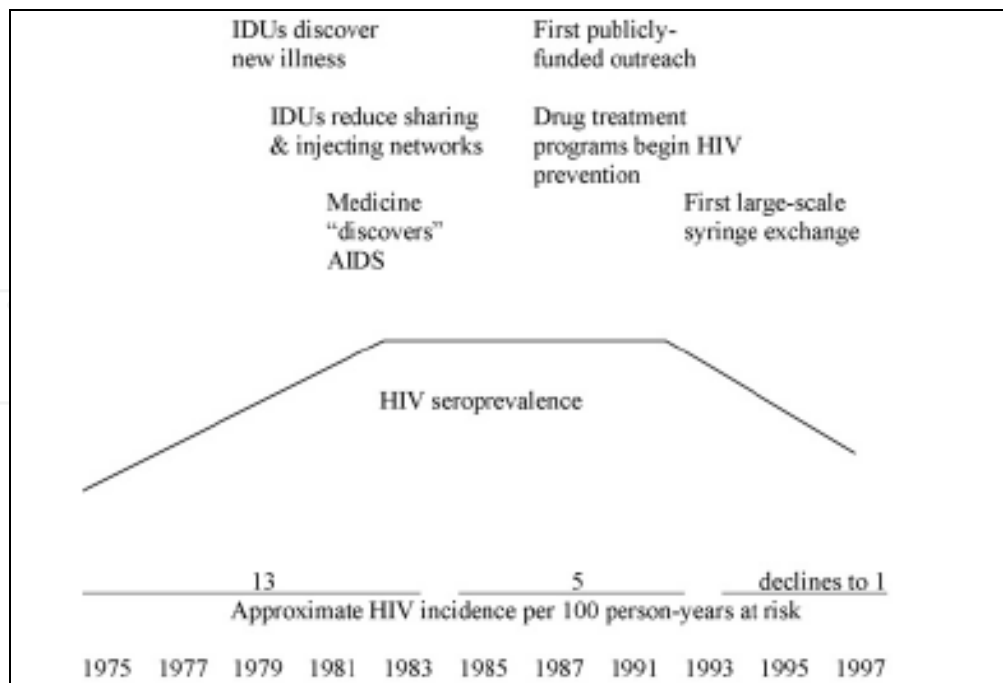


Fig. 3.1. Schematic history of the New York City HIV epidemic among people who inject drugs. (Source; Freidman et al., 2008)

several factors that explain the nexus between IDUs and the transmission of HIV. The first of these factors includes the sharing of used syringes and drug equipment (works) (Friedman et al., 1999; Rudolph et al., 2010). Drug equipment such as; (1) used bottle caps, spoons, or other containers ("cookers"); (2) used pieces of filtering cotton or cigarette filters ("cottons"); and (3) water that was already used to dissolve drugs or clean syringes (Friedman et al., 1999) allows for the transfer of infected bloodproduct from one person to the next. Subsets of IDU's who share works and injection shooting galleries (Des Jarlais & Seman, 2008) ,where one syringe is often rented to numerous clients, or those that participate in backloading<sup>3</sup> or frontloading<sup>4</sup> are particularly more likely to become infected (Des Jarlais & Seman, 2008; Friedman, et al., 1999; Santibanez et al., 2006). IDUs often share works due to restricted access to sterile needles and syringes. For example, mechanisms to limit access to clean syringes can be instituted by state laws that require a prescription to obtain syringes, thereby, outlawing syringe exchange programs (SEPS) in some states. Additionally, law enforcement strategies such as placing police near needle exchange sites and arresting IDUs for drug residue in a used syringe can encourage needle sharing (Des Jarlais & Seman, 2008). However, research indicates that increased access to SEPs exchange has lowered syringe sharing among IDUs, thereby lowering levels of infection among individuals and the larger community, (Riley, et al., 2010; Rotherman-Borus et al., 2010;

<sup>3</sup> Backloading refers to the practice of splitting /sharing drugs, whereby solution of dissolved drugs (and perhaps HIV) is squirted from one person's syringe to another using the back or plunger end of the receiving syringe.

<sup>4</sup> Frontloading refers to the practice of splitting /sharing drugs, whereby solution of dissolved drugs (and perhaps HIV) is squirted from one person's syringe to another. In frontloading, the needle is removed and the drug is transferred through the front of the syringe. Frontloading is less common in the United States because the diabetic syringes commonly used in the US do not have detachable needles.

Rudolph et al., 2010(A); Rudolph et al., 2010(B); Santibanez et al., 2006) and is cost effective and does not lead to increase drug injection or recruit first time injectors (Santibanez et al., 2006).

Lack of available substance abuse treatment programs and HAART is yet another factor that explains the impact of injecting drug use on the HIV/AIDS epidemic. Estimates from the 2007 National Survey on Drug Use and Health (NSDUH) indicate that approximately 7.5 million persons needed treatment for an illicit drug problem and of those needing treatment, about 6.2 million persons did not receive substance abuse treatment (Substance Abuse and Mental Health Services Administration, 2008). Injection drug users experience numerous barriers to treatment. However, a substantial portion of IDUs report an inability to access substance abuse treatment, highlighting a structural barrier to care (Milloy et al., 2009). Pollack and D'Aunno report much IDUs addiction treatment is provided through outpatient treatment centers, however few offer the suggested CDC HIV counseling and testing to their clients (2010), and miss opportunities to diagnose HIV. Additional findings indicate that injection drug itself is a major barrier to HAART initiation (Arasteh & Des Jarlais, 2009; Mehta et al., 2010). Many IDUs do not initiate HAART, or initiate HAART after significant delay (Mehta et al., 2010). Moreover injection drug users have been found to received less HAART and derive less benefit from HAART when received (Arasteh & Des Jarlais, 2009). For IDU's in methadone maintenance programs drug interactions often mean modifications to their HAART regiments (Arasteh & Des Jarlais, 2009). Often physicians are reluctant to prescribe HAART therapy to IDUs because of incomplete adherence, and unstable lifestyles that can promote resistance to antiretroviral therapy (Werb et al., 2010; Wolfe et al., 2010). Greater concerns exists for the possibility that drug -resistant HIV strains could be transmitted to the wider community (Werb et al., 2010).

Sexual transmission of HIV from IDUs to other persons - both other injectors and non-drug user's injection partners has important public health implications (Arasteh & Des Jarlais, 2009; Des Jarlais & Seman, 2008; Meader et al., 2010; Strathdee & Patterson, 2005; Wolfe et al., 2010). IDUs are considered a bridge to spreading HIV to persons through sexual contact and to HIV-infected children. Mothers who reported injection drug use or who had sex with an injection drug user accounted for 51% of cases of mothers documented with HIV (CDC, 2009). In 2006 the CDC revamped universal guidelines requiring HIV testing of all pregnant women without requiring separate written consent allowing early diagnosis of HIV and decreased risk of perinatal transmission from mother to infant (Gaskins, 2010). Early diagnosis and effective antiretroviral therapy has decreased perinatal transmission rates to less than 2% (Gaskin). Nondisclosure of HIV positive status among IDUs may contribute to sexual spread of HIV from IDUs. Significant disincentives and barriers to revealing a HIV positive status may contribute to nondisclosure. Fear of isolation, abandonment, rejection and criminal prosecution<sup>5</sup> may limit disclosure and limit the safety of subsequent sexual activity (Kalichman, 2005). These factors are particularly salient for sex workers infected with HIV. Many IDUs, male and female alike, trade sex for money/or drugs (Friedman et al., 1999). Other factors explaining the impact of injection drug use on sexual transmission highlight that drug use is often concentrated in neighborhoods (Rotheram-Borus et al., 2010), and high rate of injection drug use and risky sexual behavior are often reported among IDUs in low income communities (Wolfe et al., 2010). Des Jarlais & Seman believe

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<sup>5</sup> As of 1999 31 states had statues making sexual contact without disclosure a criminal offense and many laws now address exposure (whether or not condoms were involved) not just infection.



that HIV can spread from IDUs to non-injecting sex partners and develop into sustained heterosexual transmission within certain communities (2008). This heterosexual and self-sustained transmission may well explain the high rates of transmission among Black women in the U.S. (see section 4: *Black and Latino women*).

### 3.1 Interventions

The primary focus of prevention and intervention programs developed for IDUs have been harm reduction strategies and behavioral interventions. Harm reduction is referred to as a set of policies and programs working collaboratively to reduce drug related harm (Friedman, et al., 2007). Harm reduction is based on a strategy that departs from the criminalization of addiction and rather treats addiction as a chronic medical disease. Two of the most popular harm reduction strategies are sterile needle exchange and acquisition programs and opioid agonist therapy (OAT). While both are controversial, these programs have been associated with reductions in and the cessation of injection drug use (Des Jarlais & Seman, 2008; Riley et al., 2010; Rudolph et al., 2010a; Vlahov et al., 2010). Opioid agonist therapies (OAT) were developed to treat opioid dependence, which can involve long lasting physiological and molecular adaptations in the brain. One of the most widely used forms of OAT is methadone maintenance therapy. Methadone blocks the euphoric effects of other opioids and is associated with decreased illicit drug use (Strathdee & Patterson 2005; Vlahov, et al., 2000). Buprenorphine is another popular OAT used among IDUs who are HIV positive. Buprenorphine is safer for use in HIV infected persons receiving HAART because it has fewer drug interactions (Vlahov et al., 2010). Behavioral interventions focus on encouraging IDUs to refrain from risk behaviors (injection drug use, unprotected sex, and sharing drug paraphernalia) that can promote the spread of HIV. These interventions can reduce risk behaviors of IDUs at the level of the individual or social network (Freidman et al., 1999; Santibanez et al., 2006; Vlahov et al., 2010). Drug abuse treatment is the most widely endorsed intervention to reduce HIV-associated risks behaviors among IDUs (Strathdee & Patterson, 2005).

## 4. Black and Latino women

The HIV/AIDS epidemic rapidly spread and impacted women (Zierler & Kreiger, 1997) and urban communities of color during the period when epidemiological, government and media attention was focused almost solely on the gay population and injection drug users (Weeks et al., 1996). In 1981, six women in the United States were presented with an unexplained underlying cellular immune deficiency. These symptoms were similar to the phenomenon experienced by gay males in the United States that later lead to the official recognition of AIDS. Moreover, research indicates that between 1980 and 1981, 48 women died of AIDS related causes of death (Zierler & Kreiger, 1997). The potential magnitude of the female epidemic continued largely unremarked. Although men continue to represent the majority of new HIV cases, thirty years after the recognition of the disease the proportion of women infected with HIV/AIDS continues to rise. In 1985, women represented 8% of AIDS diagnoses; by 2005 they accounted for 27% (Figure 4.1) (CDC, 2007). In 1994, HIV/AIDS represented the third leading cause of death among women (Saul et al., 2000; Weeks et al., 1996). The route of transmission for an overwhelming majority of new HIV cases among women is through heterosexual contact. The majority of the women infected with the virus

are disproportionately women of color; African American and Latino women specifically. While blacks make up only 12% of the U.S. population, they represented nearly half of all people living with HIV in the U.S. in 2006 (46%, or 510,100 total persons). Sixty-four percent of all women living with HIV/AIDS are black. The prevalence rate for black women (1,122 per 100,000) was 18 times the rate for white women (63 per 100,000). Likewise, Hispanics/Latinos account for 15% of the U.S. population, but they accounted for 18% of people living with HIV in 2006 (194,000 total persons). The prevalence rate for Hispanic/Latino women (263 per 100,000) was four times the rate for white women (63 per 100,000) (CDC, 2008; Hall, 2008). An explanation for the disparity in the biological transmission of HIV among women of color is extricable bound to social and economic relations of class, gender, race, and sexuality (Zierler & Kreiger, 1997).

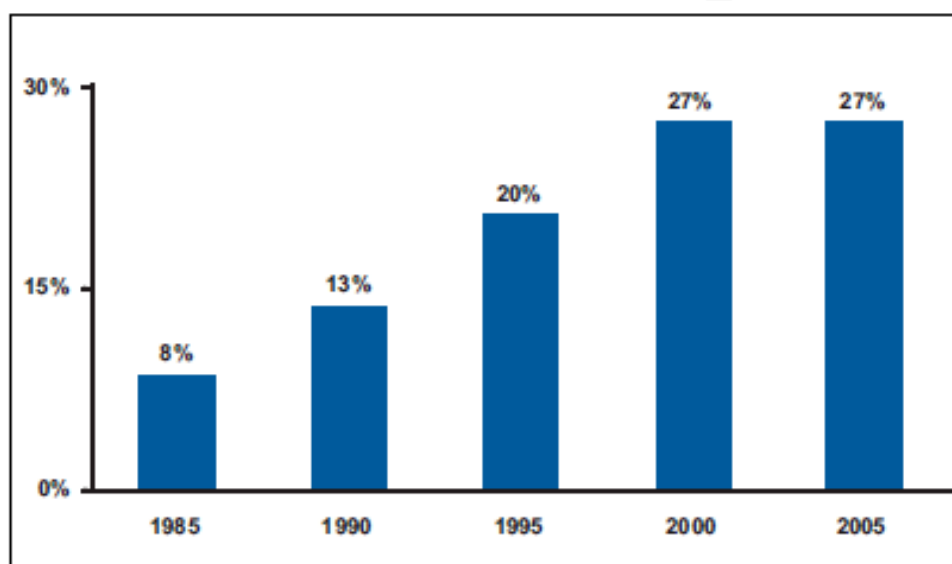


Fig. 4.1. Women as a Proportion of New Diagnosis 1985-2005. (Source; Kaiser Foundation)

There is little difference in opportunistic processes or disease progression in women and men with HIV/AIDS (Gaskins, 2010). However, while heterosexual transmission of the HIV can occur both from males to females and from females to males (Gaskins, 2010), biologically women are more susceptible to contracting the virus (Fasula et al., 2009; Gaskins, 2010; Johnson & Johnstone, 1993; Minkoff et al., 1995; Nichols et al., 2002; Weeks et al., 1996; Zierler & Krieger, 1997). There is increased biological efficiency of HIV transmission from the male to female in heterosexual intercourse (Campbell, 1999; Fasula et al., 2009; Minkoff et al., 1995). The proportion of AIDS cases in women attributed to sex with men rose steadily from 15% in 1983 to 38% in 1995 (Minkoff et al., 1995; Zierler & Krieger, 1997). Today approximately 75%-85% of new HIV infections in women stem from heterosexual contact (Doherty et al., 2009; Fasula et al., 2009) (figure 4.2). Susceptibility to HIV is further increased with the risk of trauma to cervical cells during intercourse (Gaskins, 2010; Nichols et al., 2002), and the presence of sexually transmitted diseases in women (ex. Human Papilloma Virus (HPV), gonorrhea, *Trichomonas vaginalis*, chlamydia etc.) and other gynecologic infections, that can facilitate the acquisition of HIV (Gaskins, 2010; Sutton et al., 2009).

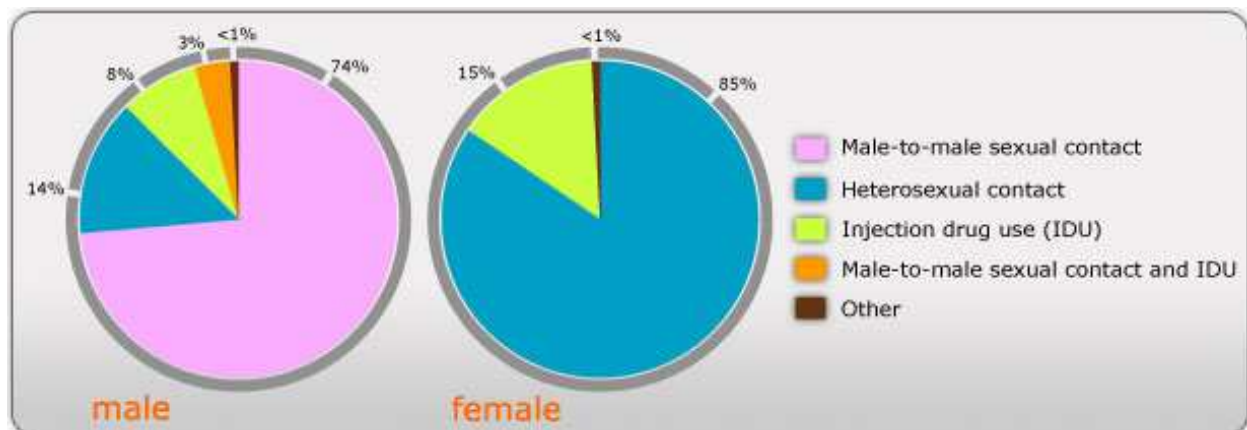


Fig. 4.2. Estimated adult and adolescent new HIV diagnoses in 2009 by transmission route and gender.

Since most infections among women occur through heterosexual sex, their risk is predicated on the risk behaviors of their male partners and gender based-inequality. Abstinence is often not an option for women experiencing domestic violence or victims of sexual violence. Among women living with HIV infection nearly half reported forced sexual experiences (Zierler & Krieger, 1997). The fear of partner violence negatively affects a women's ability to protect themselves sexually (Gonzalez-Guards et al., 2008; Zierler & Krieger, 1997). Even in the absence of partner violence women's economic dependence on men (income, food, housing, child support, etc.) often makes negotiating condom use and safer sex practices difficult (Flaskerud et al, 1996; Gaskins, 2010; Gil, 1995; Saul et al, 2002; Weeks et al, 1996; Zierler & Krieger, 1997). Monogamous relationships can only offer protection if both partners have sex exclusively with each other and do not partake in other HIV/AIDS risk behaviors. Heterosexual intercourse with male partners who are substance abusers (specifically IDUs) helped facilitate the spread of HIV/AIDS amongst women (Campbell, 1999; Minkoff et al, 1995). About 48% of all AIDS cases are in women and are known to be related to IDU in some way (CDC, 2009). Similarly sexual contact with MSMs (who are married or in long term heterosexual relationships) has also heightened the spread of HIV amongst women (Campbell, 1999; Minkoff et al, 1995).

Black and Latino women experience unique cultural factors that increase their vulnerability to HIV infection. One such issue relates to the high rates of incarceration in these communities and the impact on HIV transmission. Large numbers of incarcerated men creates a gender imbalance in these communities that can fuel HIV transmissions. US Bureau of Justice Statistics indicate that 60% of the 2.3 million incarcerated Americans are Black and Latino (Sabol & West, 2010). Additionally, Black males born in 2001 have 32% chance of going to jail compared to 17% chance for Latino males and 6% for White males. Thus, Black boys are five times and Latino boys nearly three times as likely as white boys to go to jail (Sabol & West, 2010). This trend is influenced greatly by the mandatory drug sentencing policies impacting low income minority communities. Disproportionate incarceration rates among African American and Latino men contribute to an imbalance in the ratio of men to women and thereby promote concurrent partnerships (Doherty et al., 2009). Concurrent sexual networks (partnerships overlap temporally) more efficiently promotes the spread of STDs and HIV (Doherty et al., 2009; Margolis et al., 2006). Moreover, incarceration and the "correctional revolving door" further explain the racial disparity in female HIV/AIDS infection rates amongst African American and Latino women versus

White women. While incarcerated inmates are likely to be exposed to and/ or contract HIV, or become exposed to a plethora of risky behaviors which include risky drug use and tattooing practices and consensual and nonconsensual unprotected sexual intercourse (Fullilove, 2008). The HIV/AIDS epidemic is passed to the women in the sexual networks of inmates in these communities as inmates cycle from jails and prisons, back to the general populous, and in many cases return to jails and prisons as recidivist (Fullilove, 2008).

Yet another unique cultural artifact that influences the spread of HIV/AIDS among Black and Latino women are a bipartite of embedded gender inequalities and taboos toward homosexuality and bisexuality. Cultural roles can conflict with behaviors that can decrease the risk of HIV. In Latino communities the gender concept machismo/marianismo implies that household, public, as well as sexual decision making is dominated by men and women have very little power of refusal or negotiation ability (Davila, 2000; Flaskerud et al., 1996; Russell et al., 2000; Saul et al., 2000; Weeks et al., 1996). Moreover, traditional Latino culture emphasizes sexual activity by men and the avoidance of such activity by women (Flaskerud et al., 1996). Therefore Latino women may be especially at high risk of acquiring HIV heterosexually because Latino men are more likely to report multiple sex partners than other racial and ethnic groups (Saul et al., 2000). Within Latino culture, women-initiated sexual decisions, such as condom negotiation may be viewed as a challenge to male authority and trigger male resistance to condom use (Davila, 2000). While the popular image of the Black woman being independent, strong and assertive in their relations with Black men exists (Weeks et al., 1996), Black women face similar cultural restraints. The number of marriageable women far outweighs the number of marriageable men and results in Black women having relatively less power in their sexual relationships (Alleyne & Gaston, 2010; Doherty et al., 2009). Therefore, Black women's risk of contracting HIV increases owing to Black males' engagement in multiple concurrent sexual relationships, and black women's forced willingness to accept man sharing. These factors are further exacerbated by strong cultural beliefs that often stigmatize MSMs in Black and Latino communities. Homosexuality is culturally taboo in Black and Latino communities and is frequently viewed as "a sickness that afflicts only whites" (Bing & Soto, 1991). Consequently men in both minority groups may have great difficulty accepting their sexual orientation (Bing & Soto, 1991) and be secretive about their behavior, and not seek proper treatment for HIV/AIDS (Galanti, 2003). Because men who have sex with men (MSMs) may not identify themselves as homosexual or bisexual because (1) they are on the insertive not receptive end of anal sex (Galanti, 2003; Nichols et al., 2002; Russell et al., 2000); and (2) also engage in sex with women, they place their female partners at great risk. For example, a study showed that 34% of Black men who reported having sex with men also reported having sex with women, while only 6% of the women reported knowledge of having sex with a bisexual male (Brown & Hook, 2006). The confluence of gender inequalities and taboos toward homosexuality and bisexuality, limits opportunities for education, intervention, and treatment of HIV/AIDS, putting women in Black and Latino communities at risk of contracting HIV.

#### 4.1 Interventions

Numerous complexities of race, culture, sexuality, religiosity, socioeconomic status, culture, and power affect HIV/AIDS risks and prevention for Black and Latino women. There exist gaps in the research literature and further gaps in research on gender and sexuality in the sociopolitical context of Black and Latino women (Fitzpatrick et al., 2006; Russell et al., 2000;

Weeks et al., 1996; Zambrana et al., 2004). Moreover, this lack of knowledge limits coalition building, which is critical to HIV/AIDS prevention in women, among women in communities of color (Weeks, et al., 1996). To address these gaps in the research literature, limited enrollment in HIV clinical trials and limited treatment access, in 2003 the Center for Disease Control (CDC) created the Minority HIV/AIDS Research Initiative (Fitzpatrick et al., 2006). This program is designed to provide junior investigators assistance to conduct gap research in communities of color. The rationale for this program highlights the need to; (1) research HIV/AIDS in Black and Latino communities, (2); addressing evident research gaps can only be accomplished by understanding culture-specific nuances ascribed to Blacks and Latinos, and (3); the similarity between researcher and community would remove barriers to conducting effective research (Fitzpatrick et al., 2006). Weeks et al., highlight the need for indigenous female educators and organizers with an understanding of cultural issues to educate women of color about their risk potential (1996). Similarly, these women can also serve as principle investigators and direct research questions to build greater understanding of the social context within which Black and Latino women can make decisions and influence their sexual partners.

## 5. Older adults

Persons 50 and older comprise approximately 10-15% of all AIDS cases in the U.S. (CDC, 2002; Goodroad, 2003; Inelmen et al., 2005; Jacobs & Kane, 2009; Manfredi, 2002; Ory, et al., 1998; Radda, et al., 2003; Williams & Donnelly, 2002; Zelenetz & Epstein, 1998). However, these numbers may be subject to underreporting bias because they do not include those persons over 50 who are HIV-seropositive but have not developed AIDS (Altschuler et al., 2004; Heckman et al., 2006) or adults diagnosed with AIDS prior to 50 (Altschuler et al., 2004). More recent data indicates that older adults may account for a much higher percentage of people with HIV/AIDS. From 2001-2004 the percentage of all HIV cases in the U.S. for adults age 50 and older increased from 17% to 23% (CDC, 2004; Emler et al., 2009; Gebo, 2006; Kirk, & Goetz, 2009; Orel et al., 2010). Moreover, the CDC forecasts that by the year 2015 half of all cases of HIV/AIDS will be in persons age 50 and older (Heckman et al., 2006). In creating the definition of "older adult", the CDC assumed a bell-shaped demographic distribution of people with HIV/AIDS infection. Using this approach, a person aged  $\geq 50$  meets the definition of older adult (CDC, 1992; Luther & Wilkin, 2007; Manfredi, 2002; Orel et al., 2005). The increases in incidence and prevalence of HIV diagnoses within this population are particularly important in lieu of the phenomenon of age transition<sup>6</sup> (UN, 2007). This factor is heightened by the efficacy of Highly Active Antiretroviral Therapy (HAART) rendering HIV/AIDS a chronic disease with declining mortality and fewer AIDS-related opportunistic infections (Manfredi, 2002; Stark, 2006). Consequently, the net effect is a growing, vulnerable, graying HIV-positive population. Older adults experience specific health challenges (Siegel et al., 1999), HAART treatment issues (Grabar et al., 2006; Nogueras et al., 2006; Silverburg et al., 2007), and social stigma associated with the infection (Emler, 2006; Goodroad, 2003; Stark, 2006). These health challenges are unique to this subpopulation and create barriers to the receipt of care, and

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<sup>6</sup>The age transition refers to a predictable shift from a predominantly younger population when fertility is high to a predominantly older population when fertility is low.

mediate the rising trend of a geriatric HIV positive population. Symptom ambiguity between HIV/AIDS infection and diseases associated with aging (such as diabetes mellitus, decreased renal function, and cardiac disease) often leading to misdiagnosis (Siegel et al., 1999; Zelentz & Epstein, 1998) and delays in diagnosing HIV. Moreover, due to physiologic changes associated with aging, there is a more rapid rate of progression of HIV to AIDS, and increased susceptibility to opportunistic illnesses in older adults (Gebo, 2006; Goodroad, 2003; Mack & Bland, 1999; Manfredi, 2002) (See figure 5). Other health challenges faced by older adults who are diagnosed with HIV include treatment complications due to co-morbidities and polypharmacy (Grabar et al., 2006; Luther & Wilkin, 2007; McLennon, 2003).

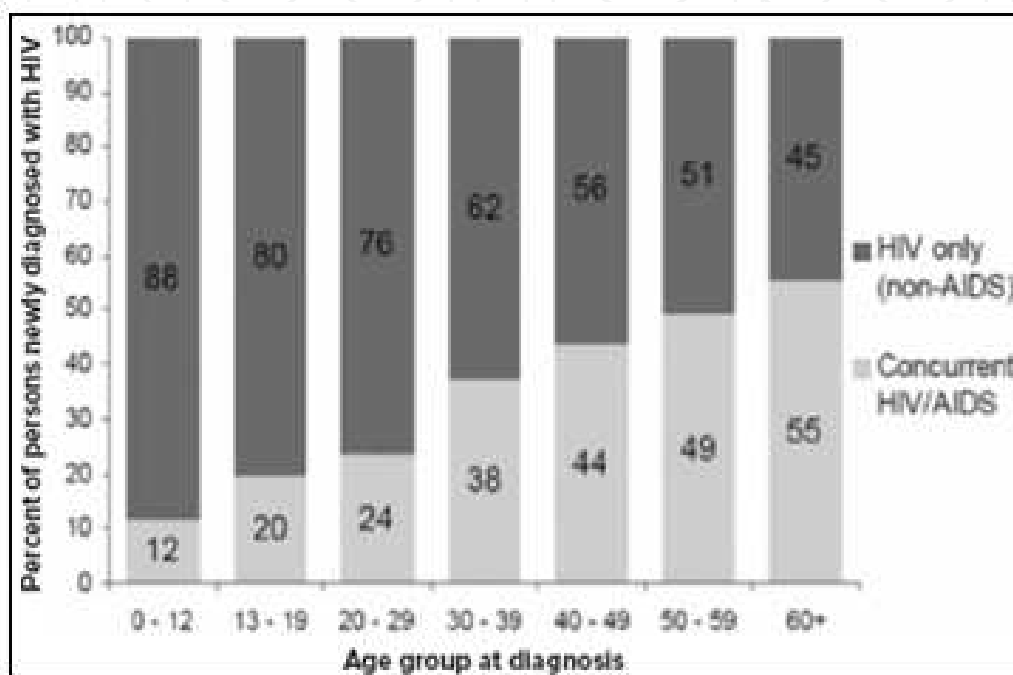


Fig. 5. Concurrent HIV/AIDS among Persons Diagnosed With HIV in 2006, By Age Group in The United States.

In addition to the issues associated with diagnosis of HIV, not too many advances have been made in the provision of effective HAART therapy, amongst older populations. Late diagnosis, impaired immune response, toxicities associated with HAART therapy and lack of knowledge about efficacy of HAART treatment among older adults contribute to high rates of mortality soon after diagnosis (Goetz et al., 2001; Mack & Bland, 1999; Manfredi & Chiodo, 2000; Nokes et al., 2000). Advanced age at seroconversion have always been important prognostic factors in the progression of HIV infection and survival mediated only by the widespread introduction of HAART therapy (Grabar et al., 2006; Manfredi, 2002). However, older patients are often excluded from clinical trials, and studies evaluating efficacy of HAART therapy in older adults are characterized by small numbers and short follow up (Grabar et al., 2006).

Social issues surrounding HIV/AIDS in the older adult are just as important as the biomedical and pharmacotherapeutic aspects. Adults aged  $\geq 50$  experience a multidimensional form of HIV-related social stigma. Initially, ageist ideologies among many health care workers contribute to the general lack of understanding and recognition of HIV

in the older adult (Goodroad, 2003; Stark, 2006). Research indicates relatively high sexual activity and some risk taking behavior among older adults (Gott, C.M., 2001; Inelman et al., 2005; Jacobs & Thomlison, 2009; Neundorfer et al., 2005; Steinke, 1994). However, ageism and myths concerning elderly populations and infrequent sexual activity, drug use, and other risk taking behavior have made routine screening less common, HIV/AIDS cases more often ignored, and diagnosis of disease delayed (Grabar et al., 2006; Mack & Bland, 1999; Orel et al., 2005). After diagnosis many older adults refrain from disclosing their HIV status to family and friends. Emlet found that older adults were less likely to disclose HIV to relatives, partners, mental health workers, neighbors, and church members than those 20-39 years of age (2006). Limiting the disclosure of HIV status controls the possibility of being stigmatized and facing discrimination (Emlet, 2006; Goodroad, 2003). A latent consequence of such behavior is the forgoing of much needed social support during this health crisis.

### 5.1 Interventions

Despite being one of the fastest growing segments of the HIV/AIDS caseload, persons age 50 and older have been largely neglected in both education and intervention efforts. While many public health campaigns are designed to target at risk populations and youth in the 13-24 age range, older adults are being ignored in terms of age-specific epidemiology, prevention, intervention and treatment programs (Mack & Ory, 2003; Ory et al., 1998). Hence older adults with HIV/AIDS have been coined in the literature as “the invisible ten percent” and the “hidden population” (Orel et al., 2005). Efforts to understand the rationale behind the unmet need for educational and intervention programs among older adults highlighted the role of state departments of public health in the distribution of current HIV/AIDS health-related information (Orel et al., 2004; Orel et al., 2005). However, findings indicate that only 15 of the 50 state health departments (30%) reported providing HIV/AIDS publications that were specifically intended for older adults (Orel et al., 2004). Successful intervention strategies include embedding and personalizing HIV/AIDS education for older adults with other provided health information. Emlet and colleagues advocate for national collaboration between aging network organizations and AIDS service organizations (ASOs), thereby providing seamless access to services /programs for AIDS and aging service providers (2009). Additionally, the use of HIV peer educators for older adults has been explored by the Senior Intervention Project (SHIP) in south Florida and proven successful not only in education, but also in linking and referring HIV positive patients to care and treatment services (Agate et al., 2003).

## 6. Adolescents

Adolescents and young adults represent one of the at risk groups for contracting HIV infections in the United States (Belzer et al., 1999). Approximately one quarter of new infections occur among adolescents and young adult (ages 13-29) (CDC, 2008). The definition for adolescence varies depending on the organization and the type of report being produced. The CDC often refers to adolescence between the ages 10-19 and young adults between the ages 20-24 (Wilson et al., 2010). Conversely, the World Health Organization often refers to young people and includes individuals between the ages of 10 to 24 years of age. Due to this variance both adolescents and young adults up till the age of 25 will be discussed in this chapter.

The identification of adolescents with HIV proves difficult because of medicolegal difficulties regarding consent and testing of adolescents, and procurement of this at risk group (Earl, 1993). Historically, these rates of HIV infection have been viewed as a function of adolescent risky sexual and drug use behavior (Di Clemente, 1997; Di Clemente & Wingood, 2000). Initiation of sexual activity often begins in mid adolescences (13-17) (Earl, 1993). Additionally, rates of STD infections are highest for sexually active persons between the ages of 15-24 (Balassone et al., 1993). Findings indicate that a majority of sexually active adolescents do not consistently take precautions to avoid contracting HIV/AIDS and other STDs (Balassone et al., 1993). Adolescence represents a developmental period characterized by risk taking behaviors prefaced on denial, invulnerability, and succumbing to peer influence (Garvie et al., 2009). Yet other risk factors unique to this group, such as, childhood sexual abuse and homelessness contribute to this sub-populations rate of HIV infections. Several studies report incest and sexual abuse survivors may engage in HIV-risky sexual behavior, including sexual compulsivity (Whitmire et al., 1999). In one study, college aged women who reported childhood sexual abuse reported less assertiveness in refusing unwanted sexual activity and less assertiveness about the use of condoms (Whitmire et al., 1999). Many adolescents who experience childhood abuse resort to escapism often becoming homeless runaways (Di Clemente, 1992; National Commission on AIDS, 1994). Consequently, this group may practice survival strategies such as prostitution or pornography that contribute to increased risk for HIV infection (Di Clemente, 1992; Lyon & D' Angelo, 2006; Whitmire et al., 1999). The residential instability of this group of adolescents, dysfunctional family history, lack of perceived life chances, and mental and physical deterioration and may not only contribute to HIV infection, but to rapid progression from HIV to AIDS, compared to their non homeless counterparts (Di Clemente, 1992; Lyon & D' Angelo, 2006; Whitmire et al., 1999). Interesting additional risk factors that influence the contraction of HIV by youths include many of the aforementioned populations in this chapter. These include adolescents who may be; (1) young MSMs; (2) IDUs; (3) racial and ethnic minorities; (4) and heterosexual females; (Kalichman, 2005). The diversity among this group and overlapping needs makes developing effective intervention programs challenging. However, regardless of risk factor experienced adolescents are less likely than adults to adhere to HAART therapy (Belzer, et al., 1999; Lyons & D' Angelo, 2006; Williams et al., 2006). Psychosocial, mental health and substance use problems often make it difficult for youth to adhere to HAART (Garvie et al., 2010).

### 6.1 Interventions

Adolescents as a group need sensitive and appropriate anticipatory guidance as they transition into adulthood. Adolescents with HIV need considerably more support. Most interventions are designed with an individualistic perspective and are sexual behavior modification interventions, aimed at reducing adolescent vulnerability to HIV by enhancing intrapersonal and interpersonal mediators of preventive behavior (Di Clemente, 1997; Di Clemente & Wingood, 2000). Appropriately tailored interventions addressing; (1) maintaining good physical health; (2) reducing transmission risk behavior and; (3) and promoting and maintaining positive mental health (Kalichman, 2005; Murphy et al., 2000) have been developed. Numerous avenues of dissemination are currently employed in intervention/education efforts and include telephone, internet (Noia et al., 2004) focus group, and individual delivery mechanisms. Current interventions stress the importance of



using the parental-child relationship (National commission on AIDS, 1994) and the schools as an intervention setting for risk reduction among adolescents (Di Clemente, 1992; National Commission on AIDS, 1994).

## 7. Conclusion

In July 2010 the White House Office released a national HIV/AIDS strategy for the United States. The vision for the national HIV/AIDS strategy was stated as follows: "The United States will become a place where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity or socioeconomic circumstances, will have unfettered access to high quality, life extending care, free from stigma and discrimination" (Office of National AIDS Policy, 2010). To this end, the executive branch of government aims to ;(1) reduce the number of people who become infected with HIV, ;( 2) increase access to care and optimize health outcomes for people who become infected with HIV; and (3) reduce HIV related disparities. Thirty years after acknowledging the existence of HIV/AIDS, a coordinated government, public health, and community response is needed to achieve a more appropriate response to the HIV epidemic, focusing on interventions and prevention strategies for those most severely impacted by this disease.

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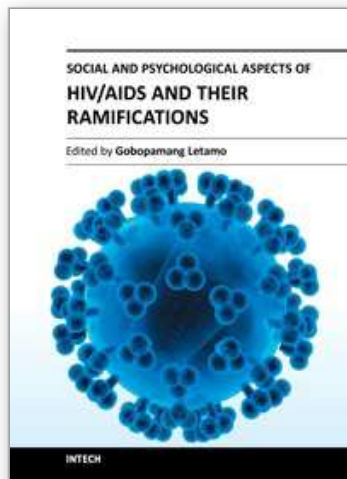
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## **Social and Psychological Aspects of HIV/AIDS and their Ramifications**

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This book has assembled an array of chapters on the social and psychosocial aspects of HIV/AIDS and their impact on HIV/AIDS and related behaviours. The book addresses key areas of HIV and AIDS, including, but not in any way limited to, care-seeking behaviour, adherence, access, psychosocial needs and support services, discrimination and the impact the epidemic has on various sectors of the economy. The book has seventeen chapters; seven chapters deal with social aspects of HIV/AIDS, four with psychosocial aspects of HIV/AIDS, and the remaining six chapters with the impact of social and psychosocial factors on HIV/AIDS and related behaviours. The book is an essential reading for academics, students and other people interested in the field of HIV and AIDS.

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