

# 2

## Community Assessment



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# Introduction

## PURPOSE OF CHAPTER

The purpose of this chapter is to describe what is known about the needs of different San Francisco populations and the factors that affect their risk. It combines epidemiologic and behavioral data with community voices and experience to create a comprehensive “story” about different people living with and at risk for HIV in San Francisco. This chapter is intended to provide information that HIV prevention and other programs can use to better understand the needs of the populations they serve. It encourages HIV prevention providers to think about, design programs for, and target their efforts toward individuals and communities based on their needs, as documented in current research, as well as their lived experiences.

## HOW TO READ THIS CHAPTER

**This chapter is about people, not Priority Setting.** The HIV Prevention Planning Council (HPPC) sets priorities for populations and makes recommendations for funding based on epidemiologic and behavioral data. This process and the 2010 priorities are described in a different chapter – Chapter 3: Priority Setting. In contrast, this chapter is about people and the everyday realities they face that affect their risk. In this chapter, populations and risk factors are not prioritized, they are just described.

**This chapter is organized into three sections: Populations, Drivers, and Cofactors.** The Populations section is placed first because this chapter is primarily about people. The Drivers section is placed second to highlight the most important factors affecting people’s HIV risk in San Francisco and to emphasize their importance in the HIV prevention strategy for 2010 and beyond. The last section is Cofactors, which describes a broader array of factors that may affect HIV risk.

**This chapter and Chapter 3: Priority Setting complement each other.** If you are reading the Priority Setting chapter, you might notice that a particular population or issue is prioritized (for example, Asian and Pacific Islander Men who have Sex with Men (MSM)). To learn more, you could then read the following related sections in this chapter: Asian and Pacific Islander People, Gay Men, Bisexual Men, and perhaps others, depending on the particular group of Asian and Pacific Islander MSM you are interested in learning more about. Conversely, if you are reading this chapter, you might find the data for a particular population or issue compelling (for example, substance use). You could then go to the Priority Setting chapter to see if or how this issue is prioritized for funding. In this case, you would see that several substances are prioritized as both drivers and cofactors, and it differs by population.

**This chapter is not designed to be read cover to cover.** Instead, it is structured so that readers can select the section or sections most relevant to their needs and interests. The chapter outline on p. 60 lists all the chapter topics in alphabetical order with corresponding page numbers.

**Readers might need to review more than one section to get a complete picture of the needs of a particular group.** For example, chapter sections relevant to Latino immigrant MSM might include: Latinos, Gay Men, Bisexual Men, Men who have Sex with Men Who Identify as Heterosexual, Immigration and Language, and Access to Services.

**This chapter is about San Francisco populations specifically.** Because the epidemiology of HIV in San Francisco is different than in other locations, this chapter relies primarily on research conducted with San Francisco populations, except when there is insufficient local information. In those cases, studies conducted in other U.S. urban areas are described. In addition, when possible, studies and data published in 2001 or later are used.

**The length of each chapter section is not an indicator of level or risk or of how high a priority a population or issue is.** Some sections are

longer than others because more data is available, or because the data is so limited that most or all of the data can be presented. When there has been substantial debate among researchers or among community members on an issue, various sides of the debate and the related evidence is presented, sometimes increasing the length of the section.

## TERMS & DEFINITIONS

**COFACTOR** A condition that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages.

**DRIVER** A driver is an underlying condition that is directly linked to a large number of new infections throughout San Francisco. By definition, drivers should be items that are affecting the high-risk behavioral risk populations, or BRPs (MSM, Transfemales who have Sex with Males (TFSM), or Injection Drug Users (IDU)), since that's where the bulk of new infections are.

# SECTION I Populations

## INTRODUCTION

In the 1990s, the HPPC began a practice of identifying and prioritizing populations for HIV prevention based on risk behaviors. Because there was so much stigma around HIV, the HPPC wanted to highlight the fact that HIV risk is not about a person's identity, but rather about behaviors. The HPPC developed the BRP model for setting priorities (see Chapter 3: Priority Setting, pp. 152-164 for more information). Under this model, people are categorized into groups based on their gender, the gender of their sexual partners, and whether or not they inject drugs. This model has helped ensure that HIV prevention reaches the populations at highest risk for acquiring and transmitting HIV.

An important limitation of the BRP model is that the categories do not necessarily reflect how people identify themselves. Even though HIV prevention providers receive funding for particular BRPs, usually they try to reach out to people based on individual or community identity. As such, providers need to understand and be responsive to people based on their identities as much (if not more so) than on their behaviors. The goal of this section is to describe the needs of different populations based on some common identities or characteristics that are not entirely accounted for in the BRP model. The chapter sections are not mutually exclusive, because people have multiple identities; for example, one might find information about women in various sections (e.g., Native Americans, Injection Drugs Users), not just under "Women". When the Populations section of this chapter is used in combination with the Drivers and Cofactors sections, as well as the Priority Setting model outlined in Chapter 3, readers should be able to construct an overall picture of the needs of the populations they are trying to reach and to what extent they are a priority for HIV prevention in San Francisco.

Within each section below, the epidemiology, behaviors, and factors affecting HIV risk that are most relevant for the population are described, followed by a brief summary of the HPPC's recommendations for HIV prevention for each group. It should be noted that for all groups, it is critically important that service providers develop collaborations with multiple health and social service agencies, so that clients' multiple needs can be addressed. It is unrealistic to expect that any one program or agency can be equipped to handle every client situation. Examples of important resources that should be available on site or through referral include HIV testing, STI screening and treatment, disclosure assistance services (to support people in discussing their HIV status with their partners), substance use and mental health treatment, housing services, financial assistance, and medical and other health and social services for people living with HIV.

## **What Are the HIV Prevention Needs of People Living with HIV?**

### **Epidemiology**

Thorough data on people living with HIV/AIDS (PLWHA) in San Francisco is presented in Chapter 1: Epidemiologic Profile (pp. 10-57). In summary, most PLWHA are white, are MSM, and are over age 30. More African Americans are living with HIV/AIDS than would be expected, given their proportion of the overall population in San Francisco.

### **Behavior**

It is essential to understand trends in behavior among people living with HIV (PLWH), because high-risk behavior can lead to transmission of HIV to others or to infection with STIs, some of which are drivers for HIV transmission. Questions remain about whether so-called “superinfection,” in which a person living with HIV might be reinfected with the same HIV strain or coinfecting with another strain, is a substantial risk and what its health consequences might be (Cheonis 2005). Most studies on the behavior of people living with HIV focus on sexual behavior rather than needle sharing behavior, and in particular on two main issues: (1) unprotected sex, and (2) disclosure of HIV status.

**Unprotected sex.** Since more effective therapies for HIV have become available, many PLWH have been living healthier and more sexually active lives. The complex issues affecting the gay community (see the section on Gay Men, p. 66) have affected both HIV-negative and individuals living with HIV and have implications for sexual behavior. MSM living with HIV as well as heterosexual men and women, have reported unprotected anal sex with partners who are either HIV-negative or of unknown serostatus in multiple studies (Chen et al 2002, Colfax et al 2002, Courtenay-Quirk et al 2008, Mansergh et al 2002, O’Leary et al 2003). In one of these studies, which was conducted with men and women living with HIV in San Francisco and two other cities, 27% percent of participants reported serodiscordant unprotected anal or vaginal sex (Courtenay-Quirk et al 2008). (Note that most studies, like this one, do not assess risks related to frontal sex, the term used among transmales for vaginal sex. This type of sex may carry different risks. For more information, see the section on Transmales, p. 80.) Another study, which should be interpreted with caution due to its small sample size, found that individuals who recently seroconverted reported engaging in high-risk behavior both during their seroconversion period and up to one year after, a period during which they may be highly infectious due to high viral load (Colfax et al 2002). In this study, individuals reduced but did not eliminate their high-risk behavior upon learning their serostatus.

**Disclosure of HIV-positive status.** HIV prevention providers in San Francisco who have worked with individuals living with HIV around disclosure issues, and people living with HIV themselves, have described and discussed some of the challenges and contextual factors that people living with HIV face. These conversations have happened informally (e.g., at HPPC meetings, community forums) and the following main themes are based on anecdotal information. First, disclosure of one’s HIV-positive status involves a very complex and personal decision-making process influenced by social factors such as stigma, as well as community norms related to disclosure and unprotected sex. Second, social networks and norms that do not support discussion of HIV status make it difficult for a person to disclose. Third, the threat of violence or of being cut off financially if one reveals being HIV-positive or asks to use a condom can be a deterrent to safe behavior, especially among women in abusive relationships.

There is a common assumption that disclosure will result in safer sex practices, but research findings in this area are mixed. In general, research supports the notion that people living with HIV feel a responsibility to protect others from becoming infected (Collins et al 2000, Offer

et al 2007, Parsons et al 2004). Other research also suggests that some individuals see disclosure as a way to release themselves from responsibility for transmission because the decision about whether and what kind of sex to have becomes the partner's (Sheon & Crosby 2004).

In one study, disclosure appeared to be associated with safer sex practices. Gay and bisexual men living with HIV who consistently disclosed to their casual partners reported fewer risk behaviors than those who never or only sometimes disclosed (Parsons et al 2005), and those who only sometimes disclosed had the highest number of risk behaviors (Hart et al 2005, Parsons et al 2005). According to a national study among people living with HIV, sex without disclosure is more frequent among gay and bisexual men (42%) compared with heterosexual men (19%) and women (17%) (Ciccarone et al 2003). This study also found that 13% of all participants reported unprotected sex without disclosure.

Disclosure issues might be different for IDUs living with HIV compared with MSM. In a study that examined frequency of disclosure and its relationship to risk behavior, consistent disclosers reported more unprotected sex than non-disclosers (Parsons et al 2004), which is the opposite of what was learned in the study with gay and bisexual men cited earlier (Hart et al 2005, Parsons et al 2005). Another study highlighted an additional difference between IDUs and MSM – many IDUs are involved in the drugs-for-sex economy, and a qualitative study concluded that low rates of disclosure and high rates of sexual risk taking are closely related to the immediate need for obtaining drugs (Knight et al 2005).

It is noteworthy that disclosure in the MSM community in San Francisco now goes beyond just HIV status to include discussions of viral load. In one study, 56% of participants (both HIV-positive and HIV-negative) reported discussing viral load with serodiscordant partners in the prior year specifically to guide decision-making around sexual risk behavior (Guzman et al 2006). In this study, HIV-negative men who discussed viral load were more willing to engage in risk behavior with a partner living with HIV who had an undetectable viral load.

## Factors That Affect HIV Risk in San Francisco

People living with HIV are affected by the same factors as HIV-negative people, including substance use, STIs, homelessness, poverty, and many others. However, research suggests that issues related to mental and emotional health are some of the most important needs of people living with HIV. Additional cofactors that could affect HIV transmission include high viral load and lack of knowledge of HIV status.

**Mental health.** Issues that may affect the mental health of people living with HIV include discussion of their HIV status with family, friends, and partners; making or trying to maintain lifestyle changes to help them stay healthy; taking new medications and suffering side effects; employment security; health care costs; and coping with depression after learning they were living with HIV. A four-city study including San Francisco found high rates of suicidal ideation among people living with HIV (Carrico et al 2007), and another San Francisco-based study found depression to be common among homeless and marginally housed men living with HIV (Weiser et al 2006).

Specific mental and emotional health-related factors that have been linked to unsafe sex among men living with HIV include use of alcohol or drugs before sex, being less emotionally involved with one's partner, and having recently learned they were living with HIV (Marks & Crepaz 2001). MSM living with HIV, who have a history of childhood sexual abuse also report high-risk sexual behaviors that could transmit HIV, partially due to the anxiety, hostility, and suicidality resulting from the abuse (O'Leary et al 2003). Social support services are needed for individuals living with HIV, especially for those who are newly diagnosed. (See also the section on Mental Health, p. 130)

**High viral load.** HIV medication adherence issues among individuals living with HIV need to be addressed, because research strongly suggests that viral load suppression reduces infectiousness (Cohen et al 2008). Perceived adverse effects of antiretroviral therapy can lead to medication non-adherence (Johnson et al 2005).

**Lack of knowledge of HIV status.** Another very important cofactor for HIV transmission is being unaware of one's status of living with HIV. It is estimated that 20-25% of people nationwide do not know they are HIV-positive, and that some unknown portion of all new infections result from these individuals unknowingly transmitting the virus through unprotected sex (MacKellar et al 2005, Schwarcz et al 2006). In San Francisco, a quasi-population based study among MSM found an unrecognized infection rate of 19% among this group (NHBS 2008).

## **What Are the HPPC's HIV Prevention Recommendations for Individuals Living with HIV?**

The term used to describe HIV prevention with individuals living with HIV is prevention with positives (PWP) (see Chapter 4: Strategies and Interventions for more on how to conduct PWP, pp. 192-195). In San Francisco, the PWP definition and goals are as follows:

PWP is any strategy or intervention that addresses the specific prevention needs of people who know they are HIV-positive.

### **The main goals of PWP are:**

- To reduce the spread of HIV and other STIs.
- To suppress viral load in order to promote health outcomes and reduce the opportunities of HIV infection.
- To help people living with HIV achieve and maintain physical, emotional, mental, sexual and reproductive health, economic stability and well-being.

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

First, not all people living with HIV are at risk for transmitting the virus. PWP should focus on the groups at highest risk for transmission, i.e., those who engage in unprotected sex or needle sharing. Individuals living with HIV should be involved in the planning and implementation of PWP programs. In addition, prevention efforts should communicate responsibility for not infecting others, but without promoting shame or stigma (Collins et al 2000).

Another important approach is to help those who are unaware of their status of living with HIV to learn it. This can be accomplished through expanding HIV testing and partner services, including targeted testing and routine testing, accompanied by structural interventions that encourage or require insurance companies or other payors to reimburse for HIV testing. For more on serostatus awareness, see Chapter 4: Strategies and Interventions, pp. 177-184. Linkages to ongoing medical care and prevention services for new and long-time individuals living with HIV are critical. In particular, case management has been associated with improving medication adherence and thus suppressing viral load and decreasing infectivity (Kushel et al 2006).

All these goals are best accomplished through strong coordination among the San Francisco Department of Public Health (SFDPH) HIV Health Services Section, the SFDPH HIV Prevention Section (HPS), the Health Services Planning Council (also known as the CARE Council), and the HPPC. One such collaboration in 2007-2008 resulted in the "Prevention with Positives: Best Practice Guide," developed by the San Francisco Points of Integration/Prevention with Positives Work Group (see <http://sfhiv.org> or contact the HIV Prevention Section for a copy). Its main points are summarized in Chapter 4: Strategies and Interventions, pp. 192-195. In addition, a joint effort between the HIV Prevention and HIV Health Services Sections resulted in a set of standards called "Linkage from HIV Testing to HIV Care: Standards of Care" (see <http://sfhiv.org/> or contact the HIV Prevention Section for a copy).

# Populations by Gender and Sexual Orientation

## PART B

### INTRODUCTION

In recent years, many studies have defined populations by behavior (e.g., men who have sex with men) as opposed to sexual orientation (e.g., gay, bisexual). Other studies group gay and bisexual men together when describing their needs and issues. Although very few studies highlight the specific needs of gay men, most men who have sex with men (MSM) in San Francisco are gay men, and thus the studies on MSM are relevant.

### GAY MEN

#### What Are the HIV Prevention Needs of Gay Men?

In San Francisco, new infections among gay men make up the vast majority of new infections, and gay men have the highest incidence rate among MSM, compared with bisexual and heterosexually identified MSM. This population needs to be the primary focus of prevention efforts and resources in order to impact the epidemic.

#### Epidemiology

MSM account for approximately 87% of all new HIV infections annually in San Francisco (McFarland 2007) – 79% are non-IDUs and 8% are IDUs. Estimated HIV prevalence among MSM, including those who inject drugs, is 25.8% (McFarland 2007). (See Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). Gay men of all races and all ages are at risk, but most new HIV diagnoses are among people who are MSM, white, and 25 to 49 years old (SFDPH 2008e). In San Francisco, overall HIV prevalence remains low among MSM younger than 25 (Catania et al 2001, MMWR 2001, Valleroy et al 2000, Waldo et al 2000), with the most recent data showing prevalence of less than 4% (Raymond 2008a, NHBS 2008), although young African American MSM have the highest prevalence among youth (MMWR 2001).

A recent study looking at HIV incidence and HIV indicators from 1998 to 2007 concluded that a hyper-endemic state of HIV infection exists among MSM in San Francisco (Scheer et al 2008). The term “hyper-endemic” means that HIV prevalence is not increasing or decreasing (“endemic”), but it still remains very high, thus the use of the prefix “hyper” (Scheer et al 2008). During this period, data show changes in sexual risk behavior patterns (e.g., an overall increase in unprotected anal sex; among HIV-negative men, a decrease in unprotected anal sex with unknown serostatus partners but an increase with potentially serodiscordant status partners). While HIV incidence fluctuated during this period, there were no consistent statistically significant upward or downward trends in HIV incidence.

#### Behavior

Although the estimated number of new HIV infections among MSM increased slightly between 2001 and 2006, this change primarily reflects an increase in the MSM population size. In fact, HIV risk behavior and HIV incidence rates are estimated to have decreased during this time period (McFarland 2007). Caution should be taken when drawing conclusions from these estimates, however, because when looking at a longer time period (1998 through 2007), new infections appear more level, although they may increase or decrease somewhat from year to year (Scheer et al 2008).

Regardless of any upward or downward trends, new HIV infections are still occurring among gay men, and unprotected anal sex continues to be responsible for the majority of these new infections. Reported rates of unprotected sex vary widely by subpopulation, depending on the type of sex (receptive vs. insertive), and depending on whether the sex is with a partner of the same, vs. unknown, or different HIV status. Two possible reasons for these differences are: (1) the extent to which specific cofactors and drivers, such as methamphetamine use (see following section on Factors That Affect HIV Risk in San Francisco), are affecting individuals and



communities, and (2) the extent to which detailed knowledge about HIV and HIV transmission is used to make decisions about sexual risk behaviors.

The term used to describe the latter phenomenon is “seroadaptation,” which the HPPC defines as follows:

**Seroadaptation includes a range of HIV risk reduction practices and refers to the selection of sexual partners, practices and positions based on one’s own and one’s partner’s serostatus, in order to reduce the risk of contracting and/or transmitting HIV (HPPC meeting, October 2007).**

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Seroadaptation includes strategies such as choosing a partner with the same HIV status (“serosorting”), strategic positioning (people living with HIV engaging in receptive anal sex and HIV-negative engaging in insertive anal sex), withdrawal before ejaculation (Parsons et al 2005), and decisions about what type of sex to have based on the viral load of the partner living with HIV (Guzman et al 2006). The gay community has been using seroadaptation strategies for many years, but this has only recently begun to be described in the literature. Evidence of the use of such HIV risk reduction practices can be found, ironically, in increases in unprotected sex as well as syphilis and rectal gonorrhea rates among gay men in San Francisco between 1998 and 2004. When examined more closely, these data show that unprotected anal sex with unknown or different serostatus partners actually *declined* during this period (Truong et al 2006). Although seroadaptation has been well-described, there is limited evidence regarding its efficacy as an HIV prevention tool.

Finally, needle sharing among gay men who inject drugs also persists, although sexual risk appears to be the primary factor driving the epidemic. Thirty percent of MSM-IDU living with HIV in one study reported distributive syringe sharing (i.e., giving a used syringe to another person) (Kral et al 2005). Other studies have documented equal or higher rates of sharing (Bluthenthal et al 2001, Kral et al 2003), including one that documented sharing rates of 58% among a late-night MSM population (Pendo et al 2003). (See also the section on Injection Drug Users, p. 88.)

## **Factors That Affect HIV Risk in San Francisco**

There are numerous social, environmental, and psychological factors that affect risk behaviors among gay men. Some are considered drivers and are believed to be responsible for the majority of new HIV infections. While other factors described here are not directly linked to a large proportion of new HIV infections, they may be underlying causes of the drivers or may even be the primary risk factors for some individuals.

The most salient factors affecting risk among gay men are substance use, multiple partners, STIs, mental health issues, discrimination and stigma, gay identity, being part of a high-prevalence/high-risk sexual network, and Internet use. These issues work in tandem with each other to create a high-risk environment for gay men. For example, drug use, feelings of loneliness and isolation, and sex solicited on the Internet all work synergistically to increase HIV risk, because they affect individual behavior and influence community norms related to unsafe sex.

**Substance use.** The prevalence of drug use (non-IDU) among gay men in San Francisco is high (Exhibit 1). Drug use has been strongly associated with unsafe sexual practices and HIV seroconversion among gay men and other MSM in study after study, across all racial/ethnic and age groups (Choi et al 2005, Koblin et al 2006, Pendo et al 2003, Ramirez-Valles et al 2008, Romanelli et al 2003, Shoptaw et al 2002). While the strongest associations between drug use and HIV risk are with cocaine/crack, heavy alcohol use, methamphetamine, and poppers (see Section II: Drivers, p. 115, for supporting evidence), other recreational drugs are also popular in some segments of the gay community, such as marijuana, ketamine (Special K), GHB, and ecstasy. Gay men who “party and play” at circuit parties, at clubs, and in other settings are one group of drug users that might be at particularly high risk (Pendo et al 2003). (See p. 120 for a definition of “party and play.”) Drug use not only increases the risk of unsafe sex, but can also lead to substantial negative health effects, especially for individuals living with HIV (Swanson & Cooper 2002). A summary of drug use rates reported in recent studies is provided in Exhibit 1.

## EXHIBIT 1 Drug Use Rates Among Gay Men and Other MSMs in San Francisco

DRUG	PERCENTAGE REPORTING USE					
	Quasi-Population-Based Sample of MSM <sup>1</sup>	Random Digit Dial Survey of MSM <sup>2</sup>	Party 'n' Play Population <sup>3</sup>	Young Asian and Pacific Islander MSM <sup>4</sup>	Late Night MSM Population <sup>5</sup>	HIV-negative MSM <sup>6</sup>
Methamphetamine	13%	17%	54%	10%	78%	23%
Poppers	19%	26%	31%	11%	-	37%
Viagra	22%	28%	12%	-	-	-
Alcohol use	52% heavy use	-	82%	-	69%	8% heavy use
Cocaine/crack	25% used cocaine	15%	-	-	-	19% used cocaine; 6% used crack

1 NHBS 2008. Percents listed reflect usage in the last 12 months.

2 Schwarcz et al 2007. Percents listed reflect usage in the last 12 months.

3 Pendo et al 2003. Party 'n' Play Study.

4 Choi et al 2005. Percents listed reflect usage during sex.

5 Rose et al 2006. Late Night Breakfast Buffet Study. Percents listed reflect usage in last 3 months.

6 Colfax et al 2004. The EXPLORE Study. Percents listed reflect usage in last 6 months.

**Multiple partners.** Having more than one and overlapping/concurrent sexual partners is common among gay men and has been associated with increased risk for HIV, partly because of the greater chance of exposure given the high HIV prevalence in the community. Plankey et al (2007), in a study conducted in urban areas other than San Francisco, found that MSM reporting two or more male sex partners were at increased risk of HIV infection. (See the section on multiple partners, p. 123).

Gay and bisexual men without a main partner, according to one study, tended to have higher numbers of male sexual partners (Hoff et al 2006). Conversely, men in same-sex domestic partnerships have been found to have a lower prevalence of multiple partnerships and decreased HIV risk behaviors in one multi-city study (Klausner et al 2006).

**STIs.** STIs are important for two reasons: (1) their presence indicates that unprotected sex is occurring, which indicates a potential risk for HIV transmission if one partner is HIV-positive, and (2) they may increase the risk of HIV acquisition and transmission, especially if there are sores present. Gonorrhea is independently associated with HIV infection among MSM (Koblin et al 2006). (For more on gonorrhea's association with HIV transmission, see Section II: Drivers, p. 115).

**Mental health.** Mental health issues among gay men, especially isolation, loneliness, and low self-esteem, may lead to taking risks in sexual situations (Morin et al 2003), but research is mixed as to what extent mental health is linked to HIV risk (see the section on Mental Health, p. 130, for more information). Depression is higher among MSM than in the general population of men (Mills et al 2004). Issues such as childhood sexual abuse (Arreola et al 2008, Huebner et al 2004, Relf et al 2004), experiences of stigma and discrimination (Courtenay-Quirk et al 2006), and a need to cope with life stressors (Diaz et al 2005) have been linked to substance use and/or HIV risk.

Conversely, certain kinds of social support may help to alleviate or diminish the impact of mental health issues and lead to decreased HIV risk behaviors. One study of gay male couples found that couples with greater levels of HIV-specific social support engaged in less HIV risk behavior (Darbes & Lewis 2005).

**Stigma and discrimination.** Stigma and discrimination, including racism, classism, homophobia, transphobia (directed at gay-identified transmales, from both within and outside the gay male community), and HIV-related discrimination play a role in HIV risk. Stigma and discrimination have been associated with bartering sex (Swendeman et al 2006); anxiety, depression, and other mental health issues (Courtenay-Quirk 2006, Diaz et al 2004); and HIV risk behavior (Jarama et al 2005).

Gay men of color and gay youth may be particularly vulnerable to discrimination and experiences of stigma. Gay men of color may experience discrimination both within the gay community as well as their communities of origin stemming from homophobia and lack of information about HIV. Studies among Latino MSM have documented that discrimination is prevalent and is predictive of engaging in “difficult” sexual situations (Diaz et al 2004) and HIV risk (Jarama et al 2005). In another study, younger MSM were more likely to report verbal harassment, discrimination, and violence, experiences which were associated with lower self-esteem and suicidal ideation (Huebner et al 2004).

**Gay identity.** Among the larger MSM population, MSM who identify as gay are generally at higher risk for HIV and STIs than bisexual and heterosexually identified MSM. For example, a theoretical model, when tested empirically among a probability sample of MSM, found a link between gay identity and HIV risk behavior (Relf et al 2004), although this study was not San Francisco-specific. Among MSM-IDU in one study, gay-identified men were two to three times as likely to be living with HIV compared with bisexual and heterosexual MSM-IDU (Kral et al 2005). Flores et al (2009) also found that participation in the gay community was associated with unprotected anal sex.

Within the community of gay-identified men, research is mixed on whether greater affiliation with and participation in the gay community has a protective effect or increases risk, depending on how gay community affiliation is defined and measured. At least two studies suggest affiliation and participation increases risk. In the first study, MSM with stronger gay community affiliation were 2.4 times more likely to be diagnosed with early syphilis in one study (Wong et al 2005). In the second study, gay men have indicated that they used methamphetamine and cocaine for reasons related to sexual enhancement, possibly to meet cultural expectations and norms of sexual prowess and sexual success in the gay community (Diaz et al 2005). This suggests that some gay community norms may contribute to an environment that increases risk behaviors.

**Being part of a high-prevalence/high risk sexual network.** Increasing evidence is emerging that sexual networks play a strong role in HIV transmission patterns. One key example is that of African American MSM who have long had a higher prevalence than MSM overall despite lower or comparable levels of risk behavior. A recent study found that African American MSM in San Francisco had higher rates of same-race partnerships and age mixing (i.e., sex with partners 10 or more years older) compared with other MSM (Berry et al 2007). Because HIV prevalence is so high both among African American MSM and older MSM, these sexual network patterns, according to the authors, could explain the higher HIV prevalence.

Another example is a study conducted in Brooklyn, NY among a high-risk sample of adults (Friedman et al 2008). Sexual network patterns were identified in which STI/HIV discordance and multiple partnerships were common among those adults in the network who attended group sex events. Furthermore, the network data showed that almost all members in the network reported sex with someone who had attended a group sex event, or sex with someone who had sex with a group sex event attendee. The authors concluded that these patterns might increase the larger network’s vulnerability to HIV. These examples suggest a need for interventions that focus on using sexual networks to facilitate HIV prevention, instead of HIV risk.

**Internet use.** The use of the Internet for meeting sexual partners has been identified as an HIV risk factor. MSM who meet partners on line tend to have more partners, more STIs, and more unprotected anal sex (McKirnan et al 2007, Rebchook et al 2003). The latter finding was further supported in a study showing that HIV-negative MSM were more likely to engage in unprotected anal sex with serodiscordant partners met on the Internet compared with those met in bars and clubs (Berry et al 2008). Other non-San Francisco studies have resulted in various

findings. Some show links between Internet use and high-risk behavior, and have hypothesized that the increase in risk associated with meeting partners on the Internet is primarily due to the efficiency and ease of making a sexual connection (Rosser et al 2008). Others have found little or no difference in risk between MSM who meet partners online compared with other locations (Chiasson et al 2007, Mustanski 2007). In addition to the published literature, community experience suggests the possibility that the use of the Internet to make sexual connections helps create sexual networks. Finally, in an example of the role of the Internet in STI transmission, the beginning of the resurgence of syphilis among gay men in San Francisco was traced to a group of men who met their partners on the Internet (Klausner et al 2000).

Although the Internet allows unlimited opportunities for sexual encounters, it is also a venue where gay men can find social support and where safer sex messages can be disseminated (Rebchook et al 2003). MSM and others seeking sex on the Internet are more likely to access information about STIs online, compared with those without online partners (Reitmeijer et al 2003). Effective use of the Internet can contribute to promoting health and wellness among gay men, by providing information about issues ranging from the biology of HIV infection to the effects of drug use.

## What Are the HPPC's HIV Prevention Recommendations for Gay Men?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

The HPPC supports a health and wellness approach in which HIV prevention, including HIV testing, is addressed in the context of gay men's health and positive sexuality. Therefore, HIV prevention programs for gay men must have strong linkages to health-related services, including mental health and substance use counseling and treatment, and STI testing and treatment. All such services should be provided in a culturally appropriate manner and be community-based and located where gay men of all backgrounds live and/or have fun. Finally, HIV prevention programs should focus more on community assets and resiliency, social support, and strengthening community and less on the negative consequences of HIV infection. Gay men need more than simple safer sex messages. Gay men need HIV prevention that speaks to what is going on in their lives and their community. The complex interactions of the many issues affecting gay men must be acknowledged and addressed.

In addition to traditional individual- and group-level behavioral interventions and HIV testing, more innovative approaches are needed, including reaching gay men through the Internet, sexual network models for HIV prevention, structural interventions, and substance use interventions.

## What Are the HIV Prevention Needs of Bisexual Men?

### Epidemiology

#### BISEXUAL MEN

Studies on gay and bisexual men frequently do not explore epidemiologic differences between these two groups, and therefore it is difficult to extract data specific to bisexual men. In general, data suggest that bisexual men have a lower HIV incidence than gay men. Bisexual male IDUs may be at higher risk for HIV transmission and acquisition, according to two studies (Bluthenthal et al 2001, Knight et al 2007), but another study found that HIV prevalence among bisexually identified male IDUs was lower than that among gay-identified IDUs (24% vs. 46%). (Kral et al 2005.)

## Behavior and Factors That Affect HIV Risk in San Francisco

Two main questions arise when thinking about the HIV prevention needs of bisexual men: (1) How are their needs different from those of gay men? and (2) How does having sex with both men and women affect new HIV infections among women?

Regarding the first question, data on gay and bisexual men is often not reported separately in San Francisco-based studies. Therefore, it is challenging to describe HIV risk among bisexual men specifically. The level and type of risk behavior and the cofactors that affect MSM appear to be relevant regardless of whether they identify as bisexual or gay, as illustrated in one study in which gay and bisexual male IDUs reported the same rates of anal sex (Kral et al 2005).

Bisexual men may be different demographically or experience cofactors differently than gay men. For example, the Seropositive Urban Men's Study (SUMS) found that men who have sex with men and women were more likely than men who had sex exclusively with men to be younger and African American, more likely to experience internalized homophobia, and less likely to participate in the gay community (O'Leary et al 2007). There were no differences in the venues at which they met sex partners, and these demographic and cofactor differences might not translate into differential risk. In another study, injection-drug-using men living with HIV who had sex with men and women were twice as likely as their gay and heterosexual counterparts to buy or sell sex for money, drugs, or housing, possibly conferring greater risk for HIV transmission (Knight et al 2007).

The answer to the second question is complicated: To what extent do bisexual men act as a bridge for HIV infection from MSM to women? Because the number of new infections is so low among women in San Francisco (estimated at 12 per year for women who do not inject drugs), it is reasonable to assume that women are not contracting HIV from anyone, including bisexual men, at high rates. Of those 12 new infections per year, however, at least a few may be attributable to sex with men who have sex with men and women. Knight et al (2007) found that injection-drug-using men living with HIV who had sex with men and women, even though they were no different than gay male IDUs in their reports of insertive anal sex with men, were in fact twice as likely to report unprotected vaginal sex and three times as likely to report unprotected anal sex with HIV-negative or unknown serostatus women than were their heterosexual male counterparts. Older studies conducted in the 1980s and 1990s suggest that unprotected sex does occur between women and bisexual men, but this does not appear to be having a large effect on HIV rates among women in San Francisco.

### What Are the HPPC's HIV Prevention Recommendations for Bisexual Men?

The HPPC believes that the approach to HIV prevention with bisexual men should be similar to that for gay men (see the section on Gay Men, p. 66), but interventions for bisexual men should address practicing safer sex with female as well as male partners.

### Who Are MSM Who Identify as Heterosexual?

This population has been receiving increasing attention at the community level and in the media, both in San Francisco and nationally. A New York Times Magazine article published in 2003 (Denizet-Lewis 2003) called "Double Lives on the Down Low" received national attention for its in-depth look at the lives and sexual practices of MSM who are not openly gay, particularly African Americans. What little research has been done has been mixed on how large this population is and to what extent these individuals are at risk for acquiring or transmitting HIV.

A small exploratory needs assessment, which included Latino and African American MSM identifying as heterosexual (n=32 interviews) as well as their male partners who identify as gay/bisexual (four focus groups), provided some insight into characteristics of this population (Harder+Company 2004a). Interviews and focus groups revealed that this population is not homogenous. Individuals do not share a community identity in the same way that many gay and

**MEN WHO  
HAVE SEX WITH  
MEN WHO IDENTIFY  
AS HETEROSEXUAL**

bisexual men do, although they might participate in the same sexual networks. Some of these men are married with children and have sex with men without the knowledge of their partners. Some of them have sex with men only out of economic need, in exchange for food, housing, or drugs. Some are upper middle class men from suburban areas. Others are living in poverty and marginally housed. Some of these men consider themselves heterosexual in all aspects of their lives, but others have a fluid perception of their sexual orientation depending on who they are with at any given time. The one common thread appears to be that, for most of these men, sex with other men is not something they disclose to others because it is inconsistent with their own view of themselves or with the norms and values of their families and communities.

Among MSM, there is some limited research conducted outside of San Francisco that reveals differences among racial/ethnic groups with regard to identity and sexual behaviors; however, it is not clear whether these findings are representative of San Francisco populations. Furthermore, the studies speak more to “non-gay” identity, which includes bisexual identity as well as heterosexual identity. In summary, the data seems to support the notion that most MSM, regardless of their race, identify as gay or bisexual (Montgomery et al 2003). However, African American and Latino MSM are less likely to identify as gay compared with other racial/ethnic groups (Flores et al 2009, Millet et al 2007, Montgomery et al 2003), and more likely to report also having sex with women (Montgomery et al 2003).

Finally, it should be noted that there appears to be a large concentration of MSM who identify as heterosexual seeking testing (and thus perhaps living) in the Tenderloin. Twenty-nine percent of tests conducted among this population at HPS-supported testing sites between 2004 and 2007 were among people reporting a Tenderloin/Civic Center zip code (HIV Prevention Section, special data request, January 2009).

## **What Are the HIV Prevention Needs of MSM Who Identify as Heterosexual?**

### **Epidemiology**

It is difficult to assess how HIV and AIDS affect this population because many men who identify as heterosexual might not disclose that they have sex with men and so they may not be represented in the data. HIV counseling and testing data from HPS-supported testing sites does include this group and can contribute to the understanding of this population, although it is not definitive because (1) it is not population-based data, and (2) it represents tests, where individuals who test multiple times are counted multiple times.

Between 2004 and 2007, 1,827 tests were conducted among men who reported heterosexual identity and sex with other men (2% of all testers). Exhibit 2 compares HIV positivity rates between MSM testers who identify as heterosexual vs. gay or bisexual. This data strongly suggests that heterosexual MSM are less likely to test HIV-positive; only 1% of heterosexual MSM tested positive (n=19), compared with 4% of gay or bisexual MSM (n=1,245).

Because there were only 19 positive tests, it is unclear whether there are any statistically meaningful differences in HIV positivity among heterosexual MSM by race/ethnicity.

**EXHIBIT 2 HIV Positivity Rate by Race/Ethnicity Among Testers:  
A Comparison Between MSM Who Identify As Heterosexual  
vs. Gay/Bisexual, 2004-2007**

RACE/ETHNICITY	MSM IDENTIFYING AS HETEROSEXUAL (N=19)	MSM IDENTIFYING AS GAY/BISEXUAL (N=1,245)
African American	1%	8%
Asian and Pacific Islander	0%	3%
Latino	1%	5%
Native American	0%	4%
White	1%	3%
Other/Multiracial	2%	4%
Unknown	0.0%	4%
Overall HIV Positivity Rate	1.0%	4%

*Source: HIV Counseling and Testing Data, HIV Prevention Section, special data request, January 2009.  
Note: This data is not population-based and is based on tests, not individuals, and thus is not necessarily representative of HIV prevalence or incidence in the larger population.*

### Behavior

Both researchers and community members have dialogued around the question of whether MSM who identify as heterosexual are at greater or lesser risk than gay-identified men. There has been much speculation in community circles that internalized homophobia and the need to have sex in secret could lead to taking greater risks during sexual encounters, such as using drugs and having unprotected sex. On the other hand, several studies have offered evidence that the more a person affiliates with the gay community (for more information, see the section on Gay Men under “Gay Identity,” p. 69), the more at risk they are due to situational influences that do not always support safer sex, such as widespread methamphetamine use or assumptions about HIV status being made without actual discussion of status.

Though the question remains open, data focusing specifically on behavior seems to suggest that the prevalence of high-risk sexual behavior among MSM identifying as heterosexual is lower than that among gay or bisexually identified men (Harder+Company 2004a, Millet et al 2005; Exhibit 3). However, certain cofactors might be more salient for this group. For example, substance use during sex was higher among heterosexual MSM testing for HIV (Exhibit 3), and in another study, MSM-IDU identifying as heterosexual were more likely than other MSM-IDU to be homeless and to trade sex for money or drugs.

Nevertheless, the findings related to sexual behavior call into question a popular theory that high rates of risk behavior among African American heterosexual MSM explain the high HIV prevalence among African American MSM nationally, as well as high rates of new infections among African American women nationally. Recent research explores other possible explanations for these health disparities (for more details, see the section on African Americans, p. 91).

### EXHIBIT 3 A Comparison of Sexual and Drug Use Risk Behaviors Among MSM Testers Who Identify As Heterosexual vs. Gay/Bisexual, 2004–2007

BEHAVIOR (LIFETIME)	MSM IDENTIFYING AS HETEROSEXUAL (N=1,827)	MSM IDENTIFYING AS GAY/BISEXUAL (N=32,692)
Unprotected receptive anal sex	17%	41%
Unprotected insertive anal sex with men	28%	50%
Unprotected vaginal sex	59%	12%
Injected drugs	26%	6%
Used alcohol during sex	61%	55%
Used any drugs during sex	46%	31%

Source: HIV Counseling and Testing Data, HIV Prevention Section, special data request, January 2009.

### Factors That Affect HIV Risk in San Francisco

There is relatively little research on cofactors affecting HIV risk among this population. Low levels of knowledge, drug use, internalized homophobia, and sex work are four factors that might influence risk and are discussed below.

**Low levels of knowledge.** MSM who identify as heterosexual might have lower levels of HIV knowledge and lower perceptions of risk compared with gay men. For example, gay and bisexual male focus group participants who were asked to discuss their sexual experiences with their heterosexual male partners reported that many MSM identifying as heterosexual believe you cannot get HIV if you are a “top” (i.e., the insertive partner during anal sex). (Harder+Company 2004a.)

**Drug use.** In a local needs assessment (Harder+Company 2004a), drug use was identified as playing a substantial role in sexual relationships between heterosexual MSM and their male partners. According to participants, the prospect of getting high often provides the “excuse” for heterosexual men to meet up and have sex with other men. In addition, getting high before sex reduces inhibitions about having sex with men. Condoms are less likely to be used or discussed when drugs are involved. Finally, in some situations, the sex occurs as payment for drugs and is not the primary purpose of the encounter (Harder+Company 2004a).

**Internalized homophobia.** According to needs assessment participants (Harder+Company 2004a), sexual relationships and encounters between heterosexual MSM and their male partners often occur in a secretive “don’t ask, don’t tell” context, as many of these men live double lives due to internalized and community homophobia. This could influence communication about safer sex. Heterosexual men might avoid discussion of HIV because they consider it taboo (Harder+Company 2004a).

**Sex work.** For the subgroup of heterosexual MSM who engage in sex with men primarily for survival or to support addictions, the risk of trading sex for money, drugs, or housing may come into play. In one study, MSM-IDU in San Francisco who identify as heterosexual were more likely to be homeless and to trade sex for money or drugs than gay or bisexual MSM-IDU (Kral et al 2005).



## What Are the HPPC's HIV Prevention Recommendations for MSM Who Identify As Heterosexual?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

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HIV prevention for MSM who identify as heterosexual should address risk on at least two levels: (1) the individual level, and (2) the community and structural level. At the individual level, many of these men may need education, assistance, and support regarding engaging in safer sex with their male and female partners. They may also need psychosocial support to help them cope with internalized homophobia and the mental health consequences of leading a double life. At the community level, issues that contribute to situations that could put these men at higher risk, such as homophobia, drug use, and poverty, need to be addressed through structural or other interventions (see Chapter 4: Strategies and Interventions, pp. 195-197, for more on structural change).

The male partners of these men are perhaps best positioned to bring HIV prevention messages to this group at the individual level. Social marketing interventions could help reach these men with HIV prevention messages that depict the reality of these men's lives. Such campaigns should subtly acknowledge that these men have sex with both male and female partners, with a focus on behavior and not sexual identity, according to gay and bisexual men who have had heterosexual male partners (Harder+Company 2004a).

## What Are the HIV Prevention Needs of Transfemales?

### Epidemiology

#### TRANSFEMALES

It is estimated that transfemales have very high HIV prevalence and incidence rates in San Francisco – approximately 28% prevalence and 3.78%-6.01% incidence (higher for transfemales who are also IDUs) (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). These high HIV rates are also found nationally among this population (Herbst et al 2008). Accurate estimates are challenging to develop because determining population size is difficult and because transfemales might sometimes be miscategorized as MSM; however, careful surveillance and data collection on this population for over a decade in San Francisco have improved estimates over time.

Although HIV prevalence and incidence are high, the population of transfemales in San Francisco is relatively small, estimated at 1,883 (McFarland 2007). Therefore, the estimated number of new infections per year is 58, lower than for MSM or IDU populations (Exhibit 4). This is why the BRP that includes transfemale non-IDUs is ranked third, after the MSM and IDU BRP. Transfemale IDUs are included in the IDU BRP, which is ranked second. (See Chapter 3: Priority Setting, p. 156-157.) It should be noted that because of the small population size, estimates of HIV prevalence and incidence are less accurate than for other groups. Another limitation is that there are few trend data for transfemales, making it difficult to say whether new HIV infections are increasing, decreasing, or staying the same among this group.

African Americans appear to be the most profoundly affected racial/ethnic group among transfemales in San Francisco, as well as nationally (Herbst et al 2008). One local study found a 63% HIV prevalence among this population in 1997 (Clements-Nolle et al 2001); in 2000 another study found a 42% prevalence (Nemoto et al 2002); and in 2002 another found a 58% prevalence among transfemales living in San Francisco and Alameda counties (Rose et al 2002).

### Behavior

Behaviors contributing to the high rates of infection include both sexual and drug use risk behaviors, which are often related to social and economic hardships that result from discrimination against transfemales. Rates of unprotected receptive anal sex, the highest risk behavior for acquiring HIV, from four studies are presented in Exhibit 4.

## EXHIBIT 4 Rates of Unprotected Receptive Anal Sex Among Transfemales in Four Studies

RATE OF UNPROTECTED SEX	ADDITIONAL INFORMATION	SOURCE
38%	Transfemales living with HIV, past 6 months	Clements-Nolle et al 2001
32%	HIV-negative transfemales, past 6 months	Clements-Nolle et al 2001
34%	African American transfemales living with HIV, past 6 months	Rose et al 2002
41%	HIV-negative African American transfemales, past 6 months	Rose et al 2002
24%	African American transfemales living with HIV, past 6 months, with a partner of unknown or different HIV status	Rose et al 2002
26%	HIV-negative African American transfemales, past 6 months, with a partner of unknown or different HIV status	Rose et al 2002
30%	With primary partners, past 12 months	SFDPH 2002 (HIV Testing Survey data)
7%	With non-primary partners, past 12 months	SFDPH 2002 (HIV Testing Survey data)
36%	With primary partners, past 30 days	Nemoto et al 2002
18%	With casual partners, past 30 days	Nemoto et al 2002
9%	With commercial sex partners, past 30 days	Nemoto et al 2002

Injection-related risk behaviors are also prevalent; 47% shared syringes in the prior six months in the (Clements-Nolle et al 2001) study. The most commonly injected drug in the prior six months in the (Rose et al 2002) study was speed (11%), followed by cocaine (6%) and heroin (4%). However, it appears that sharing of needles used to inject hormones is low, which is possibly a result of the availability of hormone needles at syringe access sites in San Francisco (Clements-Nolle et al 2001). Further, the risk of transmitting HIV through sharing of hormone needles may be lower because hormones are generally injected subcutaneously (under the skin), not intravenously (into the veins).

### Factors That Affect HIV Risk in San Francisco

For many transfemales, the issue of HIV is overshadowed by a whole host of other health and social issues – mental health, low self-esteem, lack of job opportunities – which often leads transfemales into sex work, lack of trans-specific and trans-sensitive community services, substance use, homelessness, stigma and discrimination, and sexual violence and victimization (Clements-Nolle et al 2001, Nemoto et al 2002, Rose et al 2002). It is critical that all agencies working with transfemales acknowledge and address these multiple issues and their synergistic effects.

Of these multiple factors, recent San Francisco-based research focuses primarily on elucidating the roles stigma and discrimination, sex work, and mental health in HIV risk, and these are discussed below. In addition, substance use cannot be ignored. (For more information, see the sections on Substance Use, pp. 126-129, Cocaine p. 116, Heavy Alcohol Use, p. 118, Methamphetamine, p. 119, and poppers, p. 120).

**Stigma and discrimination.** Stigma and discrimination are experienced profoundly in the trans community and operate at multiple levels. In addition to gender-based discrimination and transphobia, transfemales of color experience the added effects of the multiple stigmas associated with ethnicity and gender identity (Nemoto et al 2006). Discrimination has been strongly linked to

mental health issues in this community, including attempted suicide (Clements-Nolle et al 2006). Qualitative studies have found that discrimination contributes to a heightened need among transfemales to feel safe and loved by a male companion, which can make them vulnerable to engaging in unsafe sex to please their male partners (Melendez et al 2006, Nemoto et al 2004c). One study with transfemales of color did not find an independent association between exposure to transphobia and unprotected sex across the entire sample, but found that young transfemales who experienced higher levels of transphobia were significantly more likely than those experiencing lower levels to report unprotected receptive anal sex (Sugano et al 2006).

**Sex work.** An international meta-analysis found that transfemale sex workers had the highest risk for HIV among all sex workers and among all transfemales (Operario et al 2008b). Factors that appear to be associated with engaging in sex work include substance use (Operario & Nemoto 2005). Various studies have identified factors associated with unprotected sex among transfemale sex workers, although the associations vary depending on the study population and partner type (primary, casual, or sex work):

- **Low self esteem (Clements-Nolle et al 2008a);**
- **History of forced sex or rape (Clements-Nolle et al 2008a);**
- **Use of crack or other drugs (Clements-Nolle et al 2008a, Nemoto et al 2004c);**
- **Being a person living with HIV (Nemoto et al 2004b); and**
- **Having low income (Nemoto et al 2004b).**

Qualitative studies elucidate the many complexities behind decisions to engage in sex work and high-risk behaviors. Sausa et al (2007) explore how social networks, cultural norms, immigration issues, and experiences of transphobia have an influence, and Nemoto et al (2004c) describe how unprotected sex can be an important part of a relationship with a sex worker's primary partner, because it signifies love and emotional connection.

Lack of job opportunities propels many transfemales into sex work and survival sex; lifetime rates of sex work among transfemales were 80% in one study (Clements-Nolle et al 2001). Poverty may be an incentive to accept more money for unprotected sex from sex work clients (Harder+Company 2004b). Further, sex work can expose individuals to violence and abuse. In the Rose et al (2002) study, 69% of African American transfemales reported they had been forced to have sex, and 59% reported forced sex in the Clements-Nolle et al (2001) study. (See also the section on Sex Work and Exchange Sex, p. 141).

**Mental health.** Mental health issues, such as low self-esteem, loneliness, and powerlessness are experienced throughout the trans community. The link between mental health issues and HIV risk is complex and is discussed in more detail in the section on Mental Health (p. 130). In one study, 40% of transfemales reported currently experiencing depression, and 29% had ever attempted suicide (Nemoto et al 2002), rates comparable to another study in which 32% of trans participants reported attempted suicide (Clements-Nolle et al 2006).

## **What Are the HPPC's HIV Prevention Recommendations for Transfemales?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Trans-specific and trans-sensitive services are extremely important, especially in the Tenderloin. Because HIV prevention is not the main issue of concern for many transfemales, HIV prevention needs to be woven into other health and social services, such as medical care, mental health services, substance use treatment, and job training and placement services. Promotion of overall health and wellness for transfemales, of which HIV prevention is a part, needs to be the primary focus. This means that HIV prevention programs for transfemales can be implemented by all types of health and social services agencies, not just traditional HIV prevention agencies.

## MALE PARTNERS OF TRANSFEMALES

The service provider community needs to build its capacity to work with trans populations. Service providers need to be familiar with and sensitive to issues that are relevant for transfemales, including issues related to hormone use, gender reassignment surgery, and police harassment, as well as the factors described above (Clements et al 1999). Lack of provider sensitivity to the unique needs of the trans community is a barrier to HIV risk reduction (Clements et al 1999). Insensitivity among HIV prevention and health and social service providers can lead to hesitancy to disclose or discuss trans status, which can compromise care; it can also result in transfemales not accessing services at all. Linguistic and cultural factors also contribute to barriers to accessing HIV prevention and health services for this population (Clements et al 1999). There is a need for Spanish and Asian language services. Trans services are clearly needed in the Tenderloin, where a large population of transfemales lives and where most transfemales living with HIV and AIDS live.

### What Are the HIV Prevention Needs of the Male Partners of Transfemales?

#### Epidemiology

Very little is known about HIV prevalence or incidence among the male partners of transfemales, in San Francisco or elsewhere. A needs assessment conducted in 2001 found eight self-reported HIV-positive men (19%) among a sample of 43 male partners of transfemales (Coan et al 2005). In a study of Latino MSM, those who also reported sex with a trans partner were more likely to be living with HIV (Bockting et al 2007).

#### Behavior and Factors That Affect HIV Risk in San Francisco

It is important to understand sexual and injection-related risk behaviors among the male partners of transfemales for two reasons: (1) such behaviors may put these men at risk for HIV, and (2) such behaviors might put their transfemale sexual partners at risk for HIV if they themselves are living with HIV.

Studies done in non-San Francisco locations have drawn the following conclusions about the male partners, based on accounts provided by transfemales:

- Transfemales report that their male partners are of all sexual orientations (Hooley 1996) but usually identify as heterosexual or bisexual (Bockting et al 1998, McGowan 2000). The clients of transfemale sex workers most frequently identify as heterosexual (Mason 1995).
- Men engage in both anal insertive and receptive intercourse with their transfemale partners, although insertive intercourse is more common (Boles & Elifson 1994, Hooley 2003, Weinberg et al 1999).
- The male partners of transfemales are stigmatized for their attraction to transpersons and are considered deviant, thus increasing the likelihood of secretive relationships and sexual encounters (Mason 1995, Perkins et al 1994).
- The male partners of transfemales yield the greatest power in the sexual relationship, because affirmation of identity and social status among peers for a transperson often depends on having relationship(s) or sexual encounter(s) with a man, thus creating a power imbalance (Mason 1995, Perkins et al 1994).
- In general, men who have romantic or primary relationships with transfemales are not connected to prevention or other community support networks. Those who are connected to the service system do not feel that existing HIV prevention education meets their needs (McGowan 2000).

- Men who are clients of transfemale sex workers, who are often married men, actively pursue unsafe sex practices, using offers of increased financial compensation for performing unsafe sex. These men are very difficult to reach with prevention messages (McGowan 2000).

More recently, some studies have been conducted with the male partners as subjects, as opposed to gathering information about them solely through their transfemale partners. These studies corroborate earlier inquiries that found male partners of transfemales to be of all sexual orientations and ethnic and socioeconomic backgrounds (Coan et al 2005, Operario et al 2008a).

In terms of behaviors, an exploratory needs assessment conducted in 2001 in San Francisco (Coan et al 2005) found that 74% of the 43 men surveyed reported sex with male and/or female partners in the prior six months, in addition to their transfemale partners. Reported rates of unprotected sex were high, regardless of the gender of their partner. This finding raises concerns about bridges for HIV transmission (e.g., a man acquiring HIV from a transfemale partner and then transmitting it to his female partner; a man acquiring HIV from a male partner and then transmitting it to his transfemale partner). However, none of the men surveyed reported unprotected receptive anal sex with a transfemale partner, the highest risk behavior for acquiring HIV sexually.

In the study of Latino MSM (Bocking et al 2007), the men who also reported sex with a trans partner were nearly three times as likely to report unprotected sex in the prior three months, were more likely to identify as bisexual or heterosexual, and were more likely to also report sex with non-transfemales. The authors concluded that these men are more likely to act as a bridge for infection *to* the trans community, as opposed to acting as a bridge for infection *from* transfemales to their male and female sex partners.

In terms of injection among this group, little is known. About one quarter (23%) of the sample in the Coan et al (2005) needs assessment had injected drugs in the prior three months, but none reported sharing needles.

Because research with this population is very limited, information about cofactors and issues that affect HIV risk among this group is largely absent. Drug use may be an important cofactor for the male partners of transfemales. In the Coan et al (2005) needs assessment, alcohol, marijuana, and crack or cocaine were the most common drugs reported, and it is known that heavy alcohol use and crack are linked to increased HIV risk. Another possible cofactor is sexual compulsivity. Latino MSM reporting a history of sex with a trans partner were more likely to have sexual compulsivity issues and were at greater risk for HIV and STIs (Bocking et al 2007).

## **What Are the HPPC's HIV Prevention Recommendations for the Male Partners of Transfemales?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

The best prevention for the male partners of transfemales might be effective prevention with transfemales. According to transfemale needs assessment participants (Coan et al 2005), transfemales should be involved in all prevention efforts for their male partners and can themselves provide the needed education. Sex with transfemales might not be readily disclosed to a service provider, so reaching these men through their sexual partners may be the only way to bring prevention to them. It is noteworthy that male partners of transfemales are highly likely to also have sex with men and/or women and to be of all sexual orientations; thus, they may also be reached through programs designed for high-risk populations, such as MSM.

## TRANSMALES

## What Are the HIV Prevention Needs of Transmales?

### Epidemiology

No reliable estimates exist for the size of the transmale population in San Francisco. In the late 1990s, it was believed to be about one-third the size of the transfemale population based on enrollment rates of transpersons for one study (Clements-Nolle et al 2001). Since then, the estimated number of transfemales in San Francisco has greatly fluctuated, and it is unclear if or how this would affect estimates of transmale population size.

Epidemiologic data on HIV among transmales in San Francisco is sparse. Furthermore, transmales at risk for or living with HIV may be accessing testing and other services without disclosing their trans status, which makes it difficult to ensure the accuracy of the data that does exist. Studies among this population in San Francisco have found a prevalence of 1.6% among transmales overall (Clements-Nolle et al 2001) and 2% (Sevelius et al 2008), and 3% (Thompson et al 2009) among transmales who have sex with males. An international meta-analysis of five studies conducted with transmales also found low HIV prevalence (Herbst et al 2008). Through December 2008, fewer than five transmales have been diagnosed with HIV/AIDS in San Francisco (special data request, HIV Epidemiology Section, April 2009).

### Behavior

There are only a few behavioral studies with San Francisco's transmale population, so this section is supplemented with studies conducted in other locales, including other countries.

The primary behavioral risks for transmales are sex with men (particularly with gay and bisexual men, among whom HIV prevalence is high), injection of illicit drugs, and possibly hormone injection. In a local study called the Transmale Rapid Assessment Project (RAP), 64% of the 47 transmales interviewed reported sex with men and 45% with multiple male partners (Thompson et al 2009). Data on levels of risk behavior among transmales reveals a mixed picture. One Chicago-based study found that transmales were significantly less likely than transfemales to have used protection during their last sexual encounter and significantly more likely to have engaged in recent high-risk sexual activity (Kenagy & Hsieh 2005). This study has been criticized by Adams et al (2008) for overstating the risk, however, because the authors included unprotected oral-genital sex (vaginal and penile) and oral-anal sex in the definition of high-risk, even though these behaviors are not high risk for HIV transmission. In a San Francisco-based study, rates of unprotected frontal (vaginal) and anal sex with males and transpersons were greater than 50%, but the number of participants engaging in these behaviors was low (fewer than 10 people) due to small sample size (Clements-Nolle et al 2001).

The local Transmale RAP study, which used a small (n=47) convenience-based sample, concluded that the primary behavioral risk among transmale participants was frontal sex with multiple high-risk male partners (Thompson et al 2009). (Frontal sex is more traditionally referred to as vaginal sex, but the term "vagina" is not often used among transmen due to its strong association with female bodies and female sex traits.) In this study, rates of unprotected anal and frontal sex were 11% and 34%, respectively. It should be noted that frontal sex between a transman and a male partner might have biological transmission risks that are different than vaginal sex between a man and a woman. For example, the frontal region may undergo physiological changes with testosterone therapy that may make it more susceptible to HIV transmission than the female vagina (Thompson et al 2009). Studies are needed to assess how testosterone affects the frontal region and how this could affect biological risk for HIV transmission compared with anal sex.

Sharing needles to inject hormones may also put transmales at risk. In the largest North American study conducted with transmales, 67% reported using testosterone, although it is unclear what percentage were injecting it (Newfield et al 2006). In a San Francisco-based study, sharing needles was more prevalent among transmales than transfemales (Clements et al 1999).

## Factors That Affect HIV Risk in San Francisco

Many of the issues that apply to transfemales also apply to transmales, such as discrimination, since individuals with any trans identity are often marginalized (see the section on Transfemales, p. 75). In recent years as more literature has emerged on HIV risk among transmales, several cofactors specific to this group have been explored. The six most discussed are discrimination, mental health, lack of knowledge about HIV, identity affirmation, challenges negotiating safer sex, and lack of transmale-sensitive services (discussed below). Many of these issues could be addressed not only by working with transmales, but also with the MSM partners of TMSM. Partners might categorically assume that sex with a transmale is not high-risk, and such beliefs have an influence on the sexual decisions that are made.

**Mental health.** One predominantly U.S.-based study found diminished quality of life scores among transmales, particularly with regard to mental health (Newfield et al 2006). It is noteworthy that individuals receiving testosterone reported significantly higher quality of life scores, and the Transmale RAP study supports the finding that transmales report improved self-esteem since transitioning, although high rates of depression appear to persist (Thompson et al 2009). In another study, 55% of the transmale participants reported being depressed (Clements-Nolle et al 2001). Social isolation due to the invisibility of this population is prevalent (Thompson et al 2009). Low self-esteem, fear of rejection by gay male partners, and substance use which might be used to cope with such feelings may also prevent transmales from adopting safe behaviors (Namaste 1999, Thompson et al 2009).

**Lack of HIV-related knowledge.** Many transmales do not consider themselves to be at risk for HIV and might have incomplete knowledge about how HIV is or is not transmitted (Adams et al 2008, Namaste 1999). Kenagy (2002) found that transmales have significantly lower levels of HIV-related knowledge compared with transfemales. This lack of knowledge may stem from the fact that many transmales, in their former identities as lesbians or dykes, were not exposed to HIV prevention messages due to the virtually nonexistent risk of sexual transmission from woman to woman (Adams et al 2008). The RAP study found that transmale participants do have sound general HIV prevention knowledge, but a low perception of risk (Thompson et al 2009). Finally, for transmales who have sex with other transmales, there is a lack of information about the risks (Adams et al 2008).

**Identity affirmation.** Like with transfemales, gay-identified transmales might seek to have sex with non-transmales in order to affirm their identities. This can create situations that are unsupportive of safer sex; for example, forgoing condoms in order to please their male partners (Adams et al 2008). Anecdotally, unprotected sex in particular might also be identity-affirming for transmales who have sex with males; not using condoms while on testosterone avoids associations with contraception, which could be associated with heterosexual female identity. In addition, there may be a perception among transmales that high-risk sex is “what gay men do.”

**Challenges negotiating safer sex.** Many transmales who have sex with males find it difficult to negotiate safer sex with non-trans men, in part due to lack of language to describe transmale bodies and lack of knowledge about which activities are more or less risky than others. Power in relationships also plays a role, in that transmales may feel uncomfortable insisting on condom use because of the risk of rejection from a male partner (Adams et al 2008). Transmale community members report anecdotally that transmales trying to fit into the gay community may feel lucky to have willing male partners in an atmosphere that feels sexually charged and highly focused on bodies, and they may be willing to take more risks in trying to affirm their gay identity. Many transmales cruise on line because it represents a safe way to disclose trans status and negotiate safer sex before meeting in person (Thompson et al 2009).

**Lack of transmale-sensitive services.** In addition, health care and social service providers are often ill-equipped to meet the needs of transmales, as they generally have little or no knowledge about this population and lack the language and context for effective com-

munication to occur (Green & Ratchlin 2001, Namaste 1999, Thompson et al 2009). Even if they were equipped, challenges related to insurance and access to care are as relevant for transmales as they are for other San Franciscans (Thompson et al 2009). Anecdotally, transmales in San Francisco often seek services at MSM programs, and many go stealth (i.e., not disclose trans status) in these spaces for fear of discrimination. Transmale community members in San Francisco have reported experiences of discrimination ranging from organizations not having the infrastructure or training to address transmale needs, to organizations that make it known that transmen are not welcome in gay male spaces (HPPC meeting, March 2009). This issue is particularly complex when transmales attempt to access gynecological services.

## **What Are the HPPC's HIV Prevention Recommendations for Transmales?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

In general, HIV prevention should focus on reaching the primary transmale subpopulations at risk for HIV – transmales who have sex with males and transmales who inject drugs. Transmales are in need of safe community spaces where their identities are respected and their unique needs recognized. In addition, programs serving gay and bisexual men should develop the capacity to be more trans-inclusive and trans-sensitive in order to best serve the community of transmales who have sex with men. Programs should seek input from transmales about what type of HIV prevention and other services they want and need. In addition, for transmale IDUs, access to hormone needle exchange is important.

Outreach and education to communities and providers about the needs of transmales can help to reduce the invisibility of this population (Thompson et al 2009), which can have a profound effect on the factors related to HIV risk. This should include raising awareness of transmales within the gay male community, as well as educating HIV, health, and social service providers.



## **Recommendations from the Transmale Rapid Assessment Project (RAP): An HPPC-Prioritized Study**

In 2007, the HPPC prioritized conducting additional research among transmales to get a better understanding of their HIV prevention needs. The study was conducted in 2008 by Thompson et al and presented to the HPPC in 2009. A copy of the report can be found at <http://sfhiv.org/> or contact the HIV Prevention Section for a copy. A community-based participatory research approach was utilized to design and conduct 47 surveys, 3 focus groups, and 10 key informant interviews. The sample was convenience-based. Three workshops/town halls were held to give community members and stakeholders an opportunity to interact with, analyze, and discuss preliminary data and findings in order to provide feedback and insights around recommendations and next steps. The following recommendations were developed out of this process:

### **1. Integrate TMSM and MSTM HIV prevention, counseling, and testing protocols into MSM programs. This could be accomplished through a variety of efforts including:**

- Establishing a community advisory group to support prevention efforts for TMSM;
- Delivering cultural competency training to providers;
- Developing a common language that can help providers and clients discuss their bodies, sex, sex work and sexual behavior with each other;
- Adapting HIV prevention interventions to openly address TMSM within MSM HIV prevention interventions; and
- Implementing new cost-effective interventions such as an online community listserv for TMSM and MSM to discuss issues around sex, sexual health, and social events.

### **2. Address the data and epidemiology conundrum with more research and trials around HIV and STI testing of transmales. Activities could include:**

- Collaborating with the Transgender Center of Excellence to develop ways to ensure that transmales are “counted” in epidemiologic data; and
- Conducting a larger study with transmales to better understand HIV risks, mental health, depression, substance use, low self-esteem, and histories of violence.

### **3. Increase social support for transmales, especially youth aged 18 to 25, through more coordination, collaboration, and training across city departments. Possible approaches include:**

- Increase access to trans-friendly mental health and substance use providers (e.g., through offering coverage under Healthy San Francisco);
- Consider coverage of trans-related surgeries under Healthy San Francisco to improve self-esteem and quality of life for transmales and reduce HIV risks taken to save money for surgeries (e.g., sex work);
- Increase linkages to GED programs and City College;
- Increase job-training programs;
- Increase mechanisms for informal and formal peer mentoring; and
- Increase safe and affordable housing options.

## WOMEN

## What Are the HIV Prevention Needs of Women

### Epidemiology

The epidemiologic profile among women in San Francisco is very different from the national profile. To illustrate how different the San Francisco profile is compared with the U.S., nationally, approximately 27% of new infections each year are among women (MMWR 2008), but in San Francisco the estimate is 3%. Evidence suggests that the primary HIV risk for women in San Francisco is injection drug use, followed by sex with men.

It is estimated that 30 new HIV infections occur per year among women in San Francisco, with 18 of those among women who inject drugs (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). Compared with MSM, women make up only a small fraction of PLWHA (6%). However, women of color are disproportionately affected – 70% of women living with HIV/AIDS are women of color, and 44% are African American.

Data on perinatal infections is also relevant when describing the epidemiology of HIV among women. San Francisco has a comprehensive HIV screening program for pregnant women. Since 1996, San Francisco has had only 10 perinatal HIV infections (SFDPH 2007).

### Behavior

When considering the behaviors that put women at risk for HIV in San Francisco, it is important to remember that behavior alone does not necessarily indicate the level of HIV risk within a population. If a woman is not exposed to HIV (i.e., she does not have sex or needle sharing partners who are living with HIV), she cannot get HIV no matter how high-risk her behaviors are. Because HIV prevalence is extremely low among heterosexual men in San Francisco, heterosexual women here are unlikely to be exposed to HIV through sex. Nevertheless, behavioral interventions for women are still relevant, because if there were a shift in the epidemic that led to women being exposed to HIV more often, the protective behaviors need to be in place. Supporting HIV protective behaviors among women can also have positive effects in other areas, such as preventing unwanted teen pregnancy, hepatitis, and STIs.

The main risk factors for women in San Francisco who do not inject drugs are unprotected sex with high-risk male partners, including those living with HIV, IDU, and MSM partners (van der Straten et al 2000, Johnson et al 2003). Women may not be aware that they are at risk if they do not have full knowledge of their partners' sex or drug use behaviors. One recent study with African American and Latina women and their male partners lends credibility to this theory (Chen et al 2009b). In this study, the men were asked about their behaviors and the women were also asked about the men's behaviors, and the researchers assessed to what extent the women's knowledge was concordant with the men's reports. In general, the women did not have an accurate perception of their partners' risks. For example, only 14% of the women correctly indicated that their male partners had a history of sex with men, and among women who believed their partners were monogamous, 52% of their male partners reported that they had other sex partners.

As with other populations, sexual orientation and behavior do not always match among women. High-risk sexual behaviors with men have been documented not only among heterosexual women, but also bisexual and lesbian women (Scheer et al 2003, Stevens & Hall 2001). In one study, women who reported sex with both men and women had higher rates of high-risk sex compared with women who had sex exclusively with men, including sex with men living with HIV, sex with MSM or IDUs, trading sex for drugs or money, and anal sex (Scheer et al 2002).

Among women who inject drugs, sharing of injection equipment represents a risk factor in addition to sexual risk. Young women with injection partners who are also sexual partners were at greater risk in one study (Evans et al 2003), but women who reported having a steady sex partner who injected drugs were at lower risk in another study (Kral et al 2001). Young female IDUs may be at greater risk than either their male counterparts (Evans et al 2003) or older female IDUs (Kral et al 2001).

Young women engage in unprotected sex as well, as indicated by data on teen birth and STI rates, although new HIV infections among this population are rare. Nevertheless, the HPPC believes that promoting self-esteem, sexual health, and safer sex among young women can support them in making healthy decisions throughout their lives.

## Factors That Affect HIV Risk in San Francisco

The main cofactors that can increase HIV risk for women in San Francisco include sex work, having an STI, drug use (non-IDU), and sexual/physical abuse. These cofactors are discussed in more depth in the following paragraphs.

**Sex work.** Sex work/trading sex is a significant risk factor for women (Jones et al 1998, Kral et al 2001), especially for IDUs, bisexual, and lesbian women. Among women who inject drugs, engaging in sex work carries with it a higher risk of needle sharing (Kail et al 1995) and a five-fold increased risk for acquiring HIV (Kral et al 2001). Recent counseling and testing data also supports these findings, although the data is biased toward people who seek testing. Among testers, female sex workers (both IDU and non-IDU) were more likely to test HIV-positive than non-sex workers, although this relationship is not necessarily causal and may be mediated by other factors such as drug use (HIV Prevention Section, special data request, January 2009). Bisexual and lesbian women were more likely than heterosexual women to have a history of trading sex for money or drugs in one study (Scheer et al 2003). Finally, sex work is also associated with other cofactors, including drug use, STIs, high number of sex partners, poverty, a history of sexual abuse, low self-esteem, and mental illness (Cohan et al 2005).

Some examples of how sex work interacts with other cofactors to increase risk are described here. Some sex workers may agree to have unprotected sex with clients who have offered them considerably more money, due to economic need. Others may use condoms with their clients but not their main partner. Immigrant Asian and Pacific Islander women who engage in sex work in massage parlors may be a high-risk population among those working off-street, since many of these women may be coerced into sex work under the threat of deportation. They might also fear contact with the police and/or Immigration and Naturalization Service, lack HIV and STI information, and have insufficient access to culturally and linguistically appropriate prevention services. The illegal status of sex work makes effective HIV prevention outreach a challenge for this population.

A recent large study that included interviews with more than 2,500 low-income women in Northern California is worth noting because it looked at not only HIV risk behaviors but also at HIV seropositivity (Cohan et al 2005). While the authors found higher rates of risk factors among sex workers vs. non-sex workers (including use of drugs before sex, higher number of lifetime partners, sex with high-risk partners, and history of certain STIs), sex workers were no more likely to be living with HIV than non-sex workers. (See also the section on Sex Work and Exchange Sex, p. 141.)

**STIs.** Presence of an STI may increase the risk of acquiring HIV. In San Francisco, among women, African American women have the highest rates of chlamydia, gonorrhea, and syphilis, particularly those 14 to 20 years old. (See also the section on STIs, p. 132.)

**Drug use.** Use of drugs, such as crack, cocaine, and alcohol may lead to sexual risk-taking among women. (Please contact the HIV Prevention Section for the full discussion and supporting references by the HPPC in 2001.) Sex workers were more likely than non-sex workers to use drugs before sex in one study of low income women in Northern California (Cohan et al 2005). Bisexual and lesbian women have higher rates of lifetime and recent drug and alcohol use compared with heterosexual women (Scheer et al 2003).

**Sexual/physical abuse.** A history of sexual or physical abuse might influence sexual risk for HIV. Having been abused is associated with acquiring an STI, using alcohol or other drugs before sex, having a non-monogamous main partner, exchanging sex for money or drugs, having unprotected sex, and having multiple partners (Bauer et al 2002, NIMH Multisite HIV Prevention Trial Group 2001, Parillo et al 2001). A Los Angeles study found that women living with HIV (African American, Latina, and White) were more likely to have experienced a more severe history of trauma, including childhood sexual abuse and relationship violence compared with HIV-negative women (Wyatt et al 2002). African American women in abusive relationships may be a particularly high-risk group. One study found that they were less likely to use condoms than other racial/ethnic groups and more likely to experience abuse or the threat of abuse when they used condoms (Wingood & DiClemente 1997). Bisexual and lesbian women are also at risk; they were more likely to have a history of forced sex compared with heterosexual women (Scheer et al 2003).

Although difficult to prove, the HPPC believes that underlying many of these issues are the more fundamental social injustices of poverty and gender inequities that can affect how a woman exercises her power both generally and in potentially high-risk situations.

## What Are the HPPC's HIV Prevention Recommendations for Women?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Because the vast majority of women in San Francisco are not considered to be at risk for HIV, HIV prevention programs must focus on the highest risk women (see Chapter 3: Priority Setting, pp. 156-157 under BRPs 2 and 4) and must take into account the cofactors that affect them. Particular attention should be paid to the cultural competency of interventions, as most women at risk are women of color. A focus on empowerment and community is needed to promote the self-esteem and social support needed for healthy behavior.

Linkages to appropriate services, including drug treatment, mental health, and primary health care are important facets of programs for women. HIV prevention can also be woven into other services for women, through collaborations and structural change interventions; HIV prevention for women does not necessarily need to be in the form of a stand-alone program.

When resources permit, it is important to reach females when they are young and in the process of forming their beliefs and practices regarding sex, love, and drugs, since prevention at this age can help set young girls on a course to a lifetime of healthy behaviors.

## What Are the HIV Prevention Needs of Heterosexual Men?

### Epidemiology

#### HETEROSEXUAL MEN

In the history of the HIV/AIDS epidemic in San Francisco, a total of 116 men whose only reported risk for HIV was sex with women have been diagnosed with AIDS. This represents less than 1% of the more than 28,000 AIDS cases diagnosed through the end of 2008 (SFDPH 2008e). This compares with a national percentage of approximately 6.7% as of the end of 2006 (<http://www.cdc.gov/hiv/topics/surveillance/basic.htm#exposure>). Furthermore, in a special targeted HIV testing study of heterosexuals living in San Francisco census tracts with historically high levels of AIDS cases and the lowest income levels, no heterosexual non-IDU men living with HIV were found (SFDPH 2007).

In San Francisco, it is estimated that only five new infections occur each year among San Francisco non-IDU men who have sex exclusively with women (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). Thus they are the lowest priority for funding (see Chapter 3: Priority Setting, p. 150-168). This low infection rate is primarily due to the low prevalence of HIV among women in San Francisco.

Overall, the low infection rates among heterosexuals in San Francisco are believed to be largely attributable to early availability of syringe access (needle exchange), which helped keep infection rates low and stable among IDU populations, which in turn had a protective effect for their non-IDU sexual partners. Nevertheless, sex with a female IDU partner remains the primary risk factor for heterosexual non-IDU men in San Francisco. African American and White men account for most of the heterosexual non-IDU male AIDS cases (31% and 27%, respectively; SFDPH 2007).

Heterosexual men who inject drugs are at higher risk than those who do not, due to needle sharing behaviors and perhaps a greater likelihood of having sexual networks that include IDUs, and thus have higher HIV prevalence. It is estimated that 31 new infections per year occur among this group (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). The number of heterosexual male IDUs living with HIV has remained stable from 2004 to 2008 (SFDPH 2008e), as have HIV incidence rates (McFarland 2007). As with non-IDUs, African Americans and Whites bear the highest burden compared with other racial/ethnic groups, making up 49% and 37%, respectively, of all heterosexual male IDU AIDS cases diagnosed through 2008 (SFDPH 2008e).

## Behavior

Unprotected sex is prevalent among heterosexual men in San Francisco, as reported by behavioral studies, such as a recent probability-based study in which heterosexual males reported that 67% of their vaginal and 89% of their anal sex contacts with women were unprotected (Raymond 2007). STI rates are also a marker of unprotected sex, and STI rates are high among some subgroups of heterosexual men, including African Americans and young men (see the sections on Gonorrhea p. 121 and other STIs p. 132). For the reasons cited earlier, however, unprotected sex among this group is less likely to lead to acquiring HIV compared with other populations. Of concern are rates of potentially serodiscordant unprotected sex among heterosexual men living with HIV, because this could lead to new infections among women.

Needle sharing rates among heterosexual male IDUs may be 30% or higher (Kral et al 2003), indicating a need for continued HIV prevention efforts with this population.

## Factors That Affect HIV Risk in San Francisco

Men in sexual relationships with women who inject drugs are more likely to be exposed to HIV. These men might be more likely to be low-income, inject drugs themselves, and experience many of the other cofactors that are related to poverty (e.g., incarceration, drug use, STIs). These cofactors all work together to put these men at higher risk; however, the risk is mediated by the protective factors mentioned earlier – the physiological and epidemiologic factors that make them less likely to be exposed to or acquire HIV.

## What Are the HPPC's HIV Prevention Recommendations for Heterosexual Men?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

The primary strategy for eliminating new infections in this group, and for preventing the transmission of infection to their female partners among men living with HIV, is making counseling and testing, partner services, and prevention with positives available and accessible. It would likely not be cost-effective to implement a program exclusively for these men. Any program that reaches men who identify as heterosexual should explore the individual's specific risk behaviors, as sex with men may in fact be a risk factor (see the section on MSM Who Identify as Heterosexual, p. 71).

## What Are the HIV Prevention Needs of Injection Drug Users?

### Epidemiology

Overall, HIV incidence declined three-fold among IDUs between the late 1980s and late 1990s (Kral et al 2003), largely due to clean syringes made widely available in the form of syringe access (formerly called needle exchange). The fact that non-MSM IDUs in San Francisco make up approximately 7% of new HIV infections (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates) compared with 12% nationally (MMWR 2008) is evidence of the successful local strategy. National vs. local data for MSM-IDU shows the inverse trend; new infections among MSM-IDU are estimated at 8% of all new infections, compared with 4% nationally (MMWR 2008). The high rate of new infections among San Francisco's MSM-IDU populations are believed by many researchers and community members to be largely due to sexual risk, and this is supported in at least one study conducted with IDUs in general (Kral et al 2001). Because the MSM IDUs and the non-MSM-IDU populations are so different, these groups are considered separately below.

**MSM-IDU.** The majority of the estimated 144 annual new HIV infections among IDUs occur among MSM who inject drugs (55%) (McFarland 2007). (See Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates.) Local studies support that MSM injectors are the IDU population most affected, in terms of both prevalence and incidence (Bluthenthal et al 2001, Kellogg et al 2001, Kral et al 2005, Shafer et al 2002). Although the estimated HIV incidence rate for MSM-IDU decreased from 4.6% to 2.58% between 2001 and 2006, MSM injectors are second only to transfemales in terms of the incidence rate and second only to MSM non-injectors in terms of the number of new infections per year.

**Female, transfemale, and non-MSM male IDUs.** Among this group, there are 65 estimated new infections per year, distributed as follows: non-MSM males (48%), women (28%), and transfemales (25%) (McFarland 2007). (See Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates.) Between 2001 and 2006, HIV incidence remained relatively low and even decreased slightly in these groups.

African Americans are disproportionately represented among non-MSM IDUs living with HIV and AIDS, although some evidence suggests that African American IDUs might have lower rates of sexual/injection risk behaviors and new infections compared with other racial/ethnic groups (Bluthenthal et al 2007, Kral et al 2003). This may be because African American IDUs were reached with HIV prevention messages early in the epidemic, due to the high HIV prevalence, and thus made behavior changes (A. Kral, personal communication, 2003).

### Behavior

New HIV infections among IDUs in San Francisco can most likely be attributed to both unsafe sexual behaviors and needle-sharing. High-risk sexual and injection behaviors overlap to increase a person's risk for HIV, because use of drugs while high elevates the risk of unsafe sex. Therefore, HIV prevention for IDUs must address both types of risk and how they are related.

**Sexual behaviors.** For MSM who inject drugs, high-risk sex is likely responsible for a greater number of new infections than is syringe sharing. Several studies have documented high levels of sexual risk among MSM injectors (Knight et al 2007, Kral et al 2005, Shafer et al 2002). Many of the reasons for high levels of sexual risk behavior among this population are likely to be similar to those of MSM who do not inject drugs (see sections on Gay Men, p. 66, and Bisexual Men, p. 70)

Among IDU populations other than MSM, it is less clear whether sexual risk behavior or needle-sharing is the driving force contributing to new infections. Nevertheless, high-risk sexual behaviors have been documented in these populations. The HIV Testing Survey found high rates of unprotected vaginal and anal sex among male IDUs who have sex only with women and among female IDUs, (SFDPH 2002), although HIV incidence is believed to be relatively stable and low among these groups (McFarland 2007, see Chapter 1: Epidemiologic Profile, p. 37, for complete 2006 HIV Consensus Estimates). Even with this encouraging news, the need for continued prevention messages that address sexual risk among IDUs is clear.

Little data on sexual behavior is available specific to trans IDUs because most studies focus on transpersons overall, not just IDUs. (See also the sections on Transfemales, p. 75, and Transmales, p. 80).

**Injection-related behaviors.** While syringe access programs in San Francisco have made an invaluable contribution to minimizing syringe sharing in the IDU community, sharing still occurs. Reducing syringe sharing is important, not only because of the risk of HIV transmission, but also because of the risks of skin infections, viral hepatitis transmission, and other injection-related comorbidities.

Recent studies suggest that needle-sharing practices continue at rates as high as 30-40% among MSM injectors (Kral et al 2003, Kral et al 2005), and another study among a late night MSM crowd found needle-sharing rates of 58% (Pendo et al 2003). Needle sharing appears to be more prevalent among MSM-IDU compared with other IDUs (Kral et al 2005), although sharing also continues among other IDUs. Young injectors, particular females, appear to be more likely than others to have both needle-sharing and sexual risk for HIV (Evans et al 2003, Kral et al 2003, Lum et al 2005), although older injectors have higher HIV prevalence. It is not clear from these studies to what extent syringe sharing occurs between individuals of the same vs. different HIV status.

Needle-sharing rates are also high among transfemales. In one study, of those who injected in the last six months, 47% had shared syringes (Clements-Nolle et al 2001). Among transmales in this study, only five reported non-hormonal injection drug use, but of those, four reported sharing syringes and other injection equipment (Clements-Nolle et al 2001). Although hormone injection was also common among transpersons in this study, sharing of hormone needles was rare due to availability of hormone needles from clinics and syringe access sites (Clements-Nolle et al 2001). Furthermore, the risk of transmitting HIV through sharing of hormone needles is lower because hormones are injected subcutaneously (under the skin), not intravenously (into the veins).

## Factors That Affect HIV Risk in San Francisco

A number of factors are relevant for IDUs, and which are more salient might be different by gender or other factors. These include sex work, homelessness, having a sexual partner who is also an IDU partner, incarceration, and mental health (discussed below). In addition, the issue of substance use for this population cannot be ignored; see pp. 126-129 for more information.

**Sex work.** Sex work/trading sex is an important cofactor for certain groups of IDUs. For example, MSM/F-IDUs were more likely than either MSM or MSF injectors to engage in sex work in one study (Knight et al 2007). The interplay between drug addiction and sex work is also particularly salient for trans populations (Clements et al 1999). Trans IDUs who are sex workers may share needles with customers who are willing to pay more for shooting up together (Nemoto et al 1999). Among female IDUs, those involved in the sex trade were five times more likely to seroconvert compared with those not trading sex (Kral et al 2001).

**Homelessness.** Another noteworthy cofactor with links to HIV among IDUs is homelessness. In one study among female IDUs, syringe sharers were more likely to be homeless (Lum et al 2005). Less recent studies have also found links between homelessness and HIV among other IDU populations (for a more in-depth discussion of this issue and references, see p. 76 of the 2004 San Francisco HIV Prevention Plan). Injection of crack/cocaine was found to be a barrier to obtaining housing for IDUs living with HIV in a 4-city study (Mizuno et al 2009).

**Having a sexual partner who is also an IDU partner.** Having a partner who is both a sexual partner and an IDU partner has been associated with syringe sharing in two studies with female injectors (Evans et al 2003, Lum et al 2005).

**Incarceration.** Incarceration may be another important cofactor, given that prison policies restrict access to clean syringes, making it difficult for prisoners who inject drugs to use clean needles consistently (for more information contact the HIV Prevention Section for committee work completed in 2001. Grinstead et al 2001).

**Mental health.** A study by Latkin et al (2008) conducted in four U.S. cities highlighted associations between psychological distress and syringe sharing among HIV-positive IDUs.

Additional HIV risk factors relevant for IDUs, such as methamphetamine, crack/cocaine, and STIs are discussed in detail in other sections (methamphetamine on p. 119, crack/cocaine on p. 116, and STIs on pp. 121 and 132).

Finally, the literature has also identified some factors that are perhaps protective against sharing. One study among IDUs living with HIV found that peer norms supporting safer injection practices and having primary HIV medical care visits in the prior 6 months were associated with reports of no syringe sharing (Latkin et al 2008).

## **What Are the HPPC's HIV Prevention Recommendations for Injection Drug Users?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Syringe access is an essential component of HIV prevention for IDUs, and continued access to this service is critical. In addition, effective HIV prevention for IDUs needs to address both sexual and injection-related risks in the context of the multiple drivers and cofactors that affect IDUs. Prevention efforts need to include the sexual and injection partners of IDUs because they are also at risk for acquiring or transmitting HIV. HIV prevention should be linked with health services for IDUs, in an effort to promote overall health and wellness. Late night services for IDUs are also needed.

Not all IDUs have the same needs, and prevention efforts should be culturally appropriate and designed to meet the specific needs of different groups of IDUs. For example, among gay IDUs, some injectors may identify more with the gay community, whereas others may identify more with their drug-using social networks. Prevention messages need to be developed and targeted appropriately.

Finally, the HPPC supports the development of a safer injection facility in San Francisco (see Chapter 4: Strategies and Interventions, pp. 170-279 for more information). Evaluations of Insite, a supervised injection site in Vancouver, BC, Canada, have found that Insite increases the uptake into treatment, reduces injection-related litter in the community, and attracts the highest risk users who are most vulnerable to HIV (see <http://vch.ca/sis/research.htm> for a summary of the literature). Most relevant to HIV prevention is a study that found that use of Insite was independently associated with decreased syringe sharing (Kerr et al 2005). The feasibility, acceptability, and efficacy of such a facility in San Francisco is unknown at this time; further research is needed.



## What Are the HIV Prevention Needs of African American People?

### Epidemiology

Epidemiologic data shows that African Americans are disproportionately affected by HIV and AIDS in San Francisco. African Americans represent 6% of the San Francisco population, but they make up 14% of PLWHA (SFDPH 2008e). This disparity is particularly evident among women; African American women make up 45% of the 1,160 women diagnosed with AIDS through 2008 (SFDPH 2008e). In addition, HIV prevalence is disproportionately high in some African American populations; among African American MSM and transfemales, HIV prevalence is higher than for any other racial/ethnic group. Studies have found HIV prevalence rates of 25-40% for African American MSM (25% in Raymond 2009, 32% in McFarland 2007, 36% in NHBS 2008, and 40% in Schwarcz et al 2007) and 33-63% for African American transfemales (Clements-Nolle et al 2001, Rose et al 2002, SFDPH 2001).

The national trend – where nearly half of new HIV infections occur among African Americans (46%, MMWR 2008) – is not paralleled locally, however. Although local estimates of the number of new infections by race/ethnicity are unreliable, trends in surveillance data suggest that African Americans make up far fewer than 50% of the new infections. Between 2004 and 2008, African Americans represented between 14% and 17% of the new HIV diagnoses in San Francisco (SFDPH 2008e). Despite this tentative evidence, overall, trends in new infections are difficult to assess. Most trend data in San Francisco among African Americans focuses on MSM, but the trends have not been tracked long enough to make any reliable assessments about whether new HIV infections are increasing, decreasing, or staying the same in this group. More longitudinal studies and analyses are needed to monitor changes over time.

Compared with other racial/ethnic groups in San Francisco, there is a higher proportion of African American PLWHA whose primary risk for HIV was injection drug use. Nevertheless, as with all racial/ethnic groups, MSM remains the primary mode of transmission.

What is clear is that HIV prevalence is persistently higher among African American MSM compared with other racial/ethnic groups. Studies have found HIV prevalence rates ranging from 25% (NHBS 2008) to 40% (Schwarcz et al 2007). An examination of local data from several sources (Berry et al 2007) concluded that African American MSM in San Francisco actually have *lower* reported risks than other groups, so this does not explain the higher prevalence. This assessment found that African American MSM, however, are more likely to be unaware they are living with HIV and have lower rates of antiretroviral use, which can lead to greater infectiousness. These findings, coupled with other data showing that African American MSM are 3.2 times more likely to partner with other African American men than would be expected by chance, and that African American men are more likely than other men to partner with someone at least 10 years older (HIV prevalence is higher in older age groups), might explain the persistently higher prevalence among this group (Berry et al 2007).

### Behavior

Most literature on HIV risk behavior among African Americans focuses on MSM. African American MSM in San Francisco, as mentioned earlier, appear to have fewer behavioral HIV risks than other MSM, including rates of unprotected anal sex, number of partners, and potentially serodiscordant anal sex (Berry et al 2007), despite a higher HIV prevalence. Particular subgroups of African American MSM may be at greater risk. For example, one study with African American MSM living in the poorest neighborhoods in San Francisco found high rates of unprotected anal sex, particularly with primary partners compared with casual partners (Crosby et al 2000). In

addition, 25% reported unprotected anal sex with a partner of serodiscordant or unknown HIV status (Crosby et al 2000).

African American women in San Francisco, like women of other races, are primarily at risk for HIV from injection drug use, and secondarily, through sex with men who inject drugs and/or have sex with other men. African American transfemales who inject drugs represent a larger proportion of HIV/AIDS cases compared with those at risk only through sex. African American transfemales also report high levels of risk behavior, including unprotected receptive anal sex in the last six months (37%; Rose et al 2002). (See also the section on Transfemales, p. 75.)

Needle sharing remains a risk factor for African American IDUs; however, limited evidence suggests that sharing rates might be lower than for other racial/ethnic groups (Bluthenthal et al 2007, Kral et al 2003). A recent study with IDUs shed some new perspective on the specific risks of African American IDUs. The study looked at community-level factors such as race and income and their associations with both sexual and IDU risk behavior (Bluthenthal et al 2007). This study found that in census tracts where a higher percentage of African Americans live, there tended to be *lower* rates of receptive and distributive syringe sharing (as well as *lower* rates of unprotected sex). This study corroborates other evidence suggesting that HIV incidence among African American IDUs might be the lowest of all racial ethnic groups (Kral et al 2003).

## Factors That Affect HIV Risk in San Francisco

African Americans are disproportionately affected by many of the cofactors traditionally associated with greater risk for HIV. Not all of these cofactors, however, appear to be associated with higher rates of HIV in African American communities. Cofactors that have stronger links to HIV risk include discrimination, lack of knowledge of HIV status, drug-sex exchange, and lack of information about HIV. Cofactors that were once believed to be associated with increased HIV risk, but which recent research now call into question, include incarceration and heterosexual identity among MSM. Finally, STIs are prevalent among African Americans, but have not substantially contributed to new HIV infections among non-MSM African Americans. All of these are discussed in more detail below. In addition, as with most populations, the issue of substance use cannot be ignored; see pp. 126-129 for more information.

**Discrimination, homophobia, and racism.** Discrimination is perhaps the most important cofactor to understand when designing and implementing programs for African Americans. The effects of discrimination are far-reaching in this community and affect people as individuals and collectively; for example, it has effects on access to health care, access to education and employment opportunities, and the presence of violence, substance use and environmental hazards in communities. Discrimination has also resulted in profound disparities in health status, where African Americans have more health issues and suffer greater consequences from them than most other groups, and HIV is one of these health problems. Thus, discrimination has had an enormous influence on how HIV prevention is delivered in these communities.

One example of how a history of discrimination has resulted in structural and community-level HIV-related disparities for African Americans in San Francisco can be found in data on anti-retroviral therapy (ART) use among those living with HIV. Overall, ART use among African Americans with AIDS is high (estimated at 84-88%) but still slightly lower than for all people living with AIDS (estimated at 88-92%; SFDPH 2008e). The disparity is much clearer when looking at people living with HIV/non-AIDS who are eligible for ART. Overall, 70% of ART-eligible patients received ART, but only 61% of African American patients received ART (SFDPH 2008e). Reasons for lower ART usage likely range from individual-level factors, such as distrust of the health care system, to structural factors such as lack of access to health care – both of which are effects of societal and institutional racism. The consequences of this disparity in ART use are profound. Not only does lower use of ART result in lower survival, but people living with HIV not using ART may be more infectious, which could lead to new infections, particularly among the sexual networks of African Americans. Lower ART use has been posited as one reason for the persistently high HIV prevalence among African American MSM despite lower levels of individual risk behavior (Berry et al 2007).

Homophobia and racism also impact HIV risk among African Americans. Bayview/Hunter's Point community leaders participating in interviews in one study identified lack of acknowledgment and discussion about men having sex with men in San Francisco's African American communities as a barrier to effective HIV prevention (Harder+Company 2004c). Such barriers exist at the community level as well as at the individual level (e.g., internalized homophobia). Furthermore, African American MSM may feel marginalized within the larger gay community, and power dynamics in sexual relationships between African American men and men of other races may affect sexual decision-making and partnering, and thus HIV risk. An example of how racism might influence sexual partnerships can be found in a study among MSM in which API, Latino, and White men all reported the belief that African American sexual partners were least preferred and the most risky (Raymond 2009).

**Lack of knowledge of HIV status.** Lack of or delayed knowledge of HIV status is another critical cofactor, which could be a function of lack of access to health care in general and HIV testing in particular. Although African American MSM have similar rates of lifetime and recent testing, studies indicate that the rates of unknown infection in this group are substantially higher compared with other racial/ethnic groups. In one study, more than half (57%) of African American MSM tested did not know they were living with HIV, compared with 39% of Latinos and 13% of Whites (McFarland 2008).

**Sex-drug exchange.** High rates of drug addiction and risk behaviors, such as sharing needles, having sex while using drugs, or exchanging sex for money or drugs are other important cofactors that are associated with high rates of unemployment and poverty within African American communities. A study among poor and disenfranchised African American MSM found high rates of substance use, psychosocial problems related to their substance use, and strong linkages between sex and drug exchange and sexual risk for HIV (Crosby et al 2000, Williams et al 2000). Among a group of Los Angeles MSM identifying as heterosexual, a history of injection drug use and speed use were associated with HIV infection (Wohl et al 2002).

**Lack of information about HIV.** Misperceptions about HIV and AIDS may be a contributing factor to high-risk behavior among some African Americans. For example, in a Tenderloin-based study, 50% of participating African American MSM did not know that receptive anal sex is higher risk for acquiring HIV than insertive anal sex (Crosby et al 2000). In an assessment conducted in Bayview/Hunter's Point, 60% of men and women surveyed incorrectly believed there was a cure for AIDS (Harder+Company 2004c).

**STIs.** Presence of an STI increases the risk of acquiring HIV. There are essentially two STI epidemics in San Francisco, one among MSM and one among young African Americans living in the Southeast corridor. Among MSM in general, including African Americans, gonorrhea continues to drive the HIV epidemic (see section on Gonorrhea, p. 121, for supporting evidence). Among African American non-MSM, women, and youth, however, the picture is different. It is true that these groups have the highest rates of chlamydia and gonorrhea, but the STI epidemic in these populations does not appear to be contributing substantially to increases in HIV at the population level, probably because HIV is not prevalent in the sexual networks of these groups. Nevertheless, STIs are clearly a cofactor because they do increase the risk of transmission during sexual encounters between HIV serodiscordant individuals.

**Incarceration.** African American men are extremely disproportionately affected by incarceration in San Francisco, both in jails and San Quentin prison. For example, in a one day snapshot in 2008, African Americans made up 58% of the jail population (see Exhibit 22 in the section on Incarceration, p. 137), but only 6.6% of San Franciscans are African American. This greatly affects San Francisco's Bayview/Hunter's Point community because many of the city's African American men who live here are incarcerated and experience recidivism. The link between incarceration and HIV risk is not entirely clear (see section on Incarceration, p. 135). It is difficult to determine causal relationships when the factors that put men at risk for incarcera-

tion – namely, drug possession, sale, and use – are themselves associated with needle sharing, sex trade, and other HIV risk factors. The HOPE study, a study conducted with incarcerated individuals living with HIV (53% of whom were African American) actually showed high levels of risk behaviors pre-incarceration, a substantial decrease immediately after release, with a gradual return to higher levels (Clements-Nolle et al 2005). This finding suggests jail might actually serve as a point of intervention and support, rather than directly causing increased risk.

**Heterosexual identity among MSM.** Although most African American MSM identify as gay, a higher proportion identify as bisexual or heterosexual compared with other racial/ethnic groups, according to a meta-analysis of 53 U.S. studies (Millett et al 2007). In the early 2000s, a great deal of national attention was focused on men, particularly African American men, who led heterosexual lives but had sex with men in secret. It was suggested that this phenomenon was contributing to the HIV epidemic, both in African American men and their female partners. Recent local and national behavioral research seems to suggest that the prevalence of high-risk behavior among MSM identifying as heterosexual is lower than that among gay or bisexually identified men (Harder+Company 2004a, Millett et al 2005). The HIV positivity rate is also higher among African American MSM testers who are gay and bisexually identified vs. heterosexually identified in San Francisco (see Exhibit 2 on p. 73). (See also the section on MSM Who Identify as Heterosexual, p. 71.)

## **What Are the HPPC’s HIV Prevention Recommendations for African American People?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV messages, services, and programs for African Americans need to focus primarily on the groups most at risk – African American MSM and IDUs. Behavioral and psychosocial interventions and support are critical but must be accompanied by or embedded in structural approaches aimed at addressing poverty, lack of educational and job opportunities, lack of access to health care, and the other macro-environmental factors that create the context for the disproportionate burden of HIV in African American communities. Interventions also need to address the profound effects of stigma, discrimination, homophobia, and transphobia. HIV prevention messages and services must be culturally appropriate and relevant and ensure linkages to other relevant services. HIV prevention can be stand-alone or integrated into other services, such as primary care, mental health, substance use, and STI services.

In addition, innovative and creative approaches are needed to respond to the newly generated knowledge about high rates of HIV infection among African American MSM. This group needs access to HIV testing to increase HIV status awareness. Some possible ways to increase access include integrating HIV testing into medical settings or creating a “one stop shop” for African American MSM where they can get assistance with a range of health and social service needs. Sexual network interventions have the potential to result in long-term changes in HIV prevalence and incidence. Behavioral and psychosocial interventions should build on community strengths and provide resiliency skills, peer support, and practical support (e.g., substance use treatment, employment referrals). (See also the findings from the African American MSM Action Plan, a special HPS project, on the next page.)

## **Recommendations from the African American MSM Action Plan: An HIV Prevention Section Special Project**

In January 2007, in recognition of the disproportionate effects of HIV on African American MSM, the California State Office of AIDS called on local health jurisdictions to create action plans to adequately address the HIV prevention needs of this group. In response, the HIV Prevention Section and the HIV Prevention Planning Council convened a group of African American MSM and their allies to review data regarding HIV/AIDS, STIs, late testing, and substance use; look at resources and service gaps; and make recommendations for how best to address the needs of this population. The group has been meeting monthly since March 2007 and continues to meet as of early 2009. The final plan was approved by the HPPC in February 2009. The full plan, available sometime in 2009/10 can be accessed at <http://sfhiv.org/> or contact the HIV Prevention Section for a copy.

The plan's mission was to develop recommendations for promoting and preserving the overall health and well being of all African American gay men and MSM in the City of San Francisco. The plan aims to reduce HIV and STI transmission through specific recommendations for development of comprehensive structural and behavioral interventions. These interventions should empower African American men, increase and sustain community support for individuals, assist in the development of social support networks, and reduce morbidity and mortality of HIV and STIs. The specific recommendations from the plan are as follows:

### **1. To address high HIV prevalence sexual networks and neighborhoods:**

- Focus public education, testing and care services in high prevalence networks and neighborhoods (e.g., the Tenderloin).
- Explore the creation of a Black MSM "Center" in the Tenderloin and expand existing, culturally competent support services.
- Ensure provision of treatment and care to all Black MSM living with HIV in the Tenderloin.
- Ensure that all homeless and marginally-housed Black MSM living with HIV in the Tenderloin are housed and receive wrap around support services, and advocate for related reforms (e.g., quality of single room occupancy [SRO] hotels).

### **2. To address isolation and other psychosocial challenges:**

- Support the launch and expansion of social outlets for Black MSM.
- Increase Black MSM access to group support and counseling, and to relevant substance abuse support.

### **3. To address group-level stigma:**

- Create anti-stigma initiatives focused in the LGBT community, and in the Black community, respectively, and help build provider cultural competency.
- Monitor (end) racial profiling of Black men in the Tenderloin, Castro and elsewhere, and develop programs that strengthen coping skills.

### **4. To address macro-environmental factors, such as health care access, housing instability, poverty, and incarceration:**

- Explore creation of a Black MSM "Center" (see recommendation #1).
- Increase availability of quality, low and moderate income housing for Black MSM living with HIV and others and support community improvement efforts.
- Support new mechanisms for development of a Black MSM advocacy agenda.

## ASIAN AND PACIFIC ISLANDER PEOPLE

# What Are the HIV Prevention Needs of Asian and Pacific Islander People?

## Epidemiology

Epidemiologic data show that, overall, Asian and Pacific Islanders (APIs) have fewer HIV and AIDS cases than would be expected given the size of the population in San Francisco. APIs represent 31% of the San Francisco population, but they make up only 5% of PLWHA (SFPDPH 2008e). However, some subgroups of APIs are at higher risk, especially MSM. Male API AIDS cases tend to be more concentrated among MSM and less concentrated among MSM-IDU and IDU compared with other racial/ethnic groups. Additionally, APIs are the only racial/ethnic group in which more female AIDS cases are attributable to heterosexual contact than to injection drug use (45% vs. 30%), although the overall numbers are small (a total of 69 API females diagnosed with AIDS through 2008; SFPDPH 2008e). HIV/AIDS prevalence and incidence among APIs in San Francisco is similar to the national profile.

HIV prevalence estimates among API MSM range from as low as 2.6% among young API MSM (Choi et al 2004, Do et al 2005) to 2-17% among API MSM overall (2% in NHBS 2008, 7% in Raymond 2009, 9% in Catania et al 2001, 10% in McFarland 2007, and 17% in Schwarcz et al 2007). One study found increases in unprotected anal sex and STIs among API MSM that actually surpassed levels among White MSM between 1999 and 2002 (McFarland et al 2004), but these trends seem to have reversed since that time (Raymond et al 2007, McFarland 2008), and anticipated increases in the rate of new HIV diagnoses have not yet occurred (SFPDPH 2007).

What explains the persistently lower HIV prevalence among API MSM compared with other racial/ethnic groups? Due to issues of immigration status, cultural values of privacy and self-silencing, and other factors, some API MSM might escape the radar of conventional epidemiologic data, and HIV prevalence could be higher than studies show. Nevertheless, the data that is available show a consistently lower HIV prevalence among this group. This success is worth understanding, because it could help identify HIV prevention strategies that are effective for API MSM as well as other MSM.

One examination of local data from a variety of sources posited that there are four possible reasons (McFarland 2008) for the lower prevalence, but further data is needed to draw any definitive conclusions. The four hypotheses are as follows (McFarland 2008). First, API MSM tend to participate in lower risk sexual networks. They are 1.5 times more likely to partner with another API man than would be expected by chance, and they are more likely to partner with men in their own age group. These lower rates of race and age mixing result in less contact between high and low prevalence populations, reducing the chances for HIV transmission. Second, after 2001, API MSM have high levels of awareness of being HIV-positive. A 2004 study found no unrecognized HIV infections among API MSM, and only 12% who had never tested for HIV, a reduction since 2001. Third, APIs living with HIV overall have the highest ART use of any racial/ethnic group, at 94%, which helps reduce infectiousness. Finally, after a 3- to 4-year period of documented increases in unprotected anal sex, after 2001, these rates decreased substantially to pre-1999 levels.

## Behavior

Unprotected sex with men is the primary behavior that puts API men at risk for HIV. Among API women, the primary mode of HIV transmission is through heterosexual contact. Injection drug use is also a risk factor for APIs, but HIV surveillance data shows that sexual transmission is the primary route of HIV infection.

Most literature on HIV risk behavior among APIs focuses on MSM. Several studies were conducted with API MSM between 1999 and 2002, the time during which HIV risk behaviors were increasing (as discussed in the previous section). These studies showed high reported rates of recent unprotected anal sex, substance use, and other risk behaviors (Choi et al 2005, McFarland et al 2004, Operario et al 2006). More recent data that tracks trends from 1999 to 2005 shows a reversal of many of these trends beginning in 2003, including reductions in

early syphilis diagnoses, unprotected serodiscordant anal sex, and multiple partners, as well as increases in lifetime rates of HIV testing (Raymond et al 2007). These changes have been attributed to the strong prevention response that resulted from the 1999 to 2002 reports indicating increasing risk (Raymond et al 2007).

There is also some limited literature specific to API transfemales. One study with this group found that one-fifth of the sample had engaged in unprotected receptive anal sex with a male partner in the prior 30 days, and this behavior was found to be associated with commercial sex work and previous attempted suicide (Operario Nemoto 2005).

The literature on HIV risk behaviors among API women in San Francisco is sparse and focuses primarily on sex workers in massage parlors (see section on Exchange Sex and Sex Work, p. 141, for more information).

## Factors That Affect HIV Risk in San Francisco

In San Francisco, the API community is made up of diverse cultures and ethnic groups, including immigrants and people who are U.S.-born. Cofactors may be more or less prevalent or relevant depending on the API subgroup. Overall, the four main cofactors discussed in the literature are discrimination (including racism and homophobia), immigration and language, sex work, and substance use. Other cofactors, such as low perception of risk and lack of knowledge of HIV status, appear to be less relevant now than they were in the late 1990s/early 2000s based on more recent studies showing an increase in risk perception and knowledge of HIV status (McFarland 2008).

**Discrimination, racism, homophobia.** According to Nemoto et al (2003b), APIs often experience dual stigma stemming from homophobia and racism. Effects of this include discomfort with sexuality, power dynamics, and stereotypes that influence sexual partnerships with White men. In addition, discrimination can impact a person's freedom to "out" oneself to one's social network and family, and ultimately can undermine a person's sense of agency about their decision-making.

HIV-related discrimination might also play a role in HIV risk. For example, a study in San Francisco suggests that sexuality, sexual behavior, and HIV are extremely stigmatized within the larger Filipino community and that certain Catholic beliefs underlie the tension among Filipino families regarding these topics (Operario 2003). (Data on other API subgroups is sparse.) A New York City study found high levels of psychological distress among HIV-positive APIs resulting from having experienced the effects of stigma, including social rejection (Kang et al 2006). These effects were more pronounced for undocumented compared with documented APIs.

A recent local randomized, community-based study offers a different perspective on this issue. This study found that, based on data from 103 API MSM reporting on nearly 300 sexual partnerships, API MSM were at no higher risk than any other racial/ethnic group for having unprotected receptive anal sex with White partners. Furthermore, condom use rates among API MSM with White and other-race partners were similar to those for other groups of MSM (Raymond & McFarland 2008).

**Immigration and language.** Immigration status and language barriers can make it difficult to access health care and social services, adding another obstacle for APIs seeking HIV prevention-related information and support, as well as HIV testing (which, additionally, may "out" them because of the association some make between HIV testing and being gay). Anecdotally, some may fear testing because they believe that it will affect their right to citizenship or to reside in the U.S. Researchers and health care providers report a growing need for translators and services for immigrants who speak Asian languages (Snyder et al 2000). Being undocumented, as is often the case with API massage parlor workers (Nemoto et al 2004a), can make people vulnerable to exploitation and violence, since they might be less likely to report victimization to the police for fear of deportation. (See also the section on Immigration and Language, p. 139.)

**Sex work.** Sex work is another cofactor that may place some APIs at risk for HIV, in particular, Asian immigrant women working at massage parlors in San Francisco. One San Francisco study among 100 masseuses found that difficult work conditions (i.e., multiple sex customers each workday, long working hours, physical and verbal abuse from customers) contributed to participants' HIV risk (Nemoto et al 2004a). In addition, in the absence of clear policies about condom use at these establishments, male clients often use condoms as a negotiation point, putting economically disadvantaged women in the position of having to choose between their health and more money (Nemoto et al 2004a).

**Substance use.** Substance use among API MSM and transfemales is not uncommon and increases HIV risk. (For more information, see the sections on Substance Use, pp. 126-129, Cocaine, 116, Heavy Alcohol Use, p. 118, Methamphetamine, p. 119, and poppers, p. 120.) In one study of API transfemales, over half reported sex while under the influence of substances, and substance use was associated with engaging in commercial sex work (Operario & Nemoto 2005). Choi et al (2005) found moderate rates of alcohol and drug use in connection with sex among a sample of young API MSM, including ecstasy (19%), marijuana (14%), poppers (11%), and methamphetamine (10%), although no association was found between being high during sex and having unprotected anal sex.

### Low perception of risk and lack of knowledge of HIV

**status.** Older studies conducted in the late 1990s/early 2000s show that API MSM, despite being the API population most at risk for HIV, have a low perception of risk and thus are less likely to seek HIV testing and more likely to have undiagnosed HIV infection (McFarland 2008). More recent data suggests that perceptions in this community have shifted, and rates of unrecognized HIV infection among API MSM have decreased (McFarland 2008).

## What Are the HPPC's HIV Prevention Recommendations for Asian and Pacific Islander People?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Linguistically accessible and culturally appropriate prevention interventions are needed in the API community, and they should be focused on the highest risk populations – MSM and transfemales. In addition, interventions should take into account differences that may exist among different API ethnic groups, as well as documented vs. undocumented immigrants. Now that HIV risk behaviors are on a downward trend among API MSM, programs should build upon these successes by supporting and reinforcing the effective behavior changes that API MSM have made in recent years and continue to promote HIV testing. As with other groups, it is important that HIV prevention service providers maintain collaborations and linkages with other health and social service agencies (e.g., mental health, substance use) in order to support clients with various needs.

## What Are the HIV Prevention Needs of Latino/Latina People?

### Epidemiology

#### LATINO/LATINA PEOPLE

Epidemiologic data suggests that Latinos in San Francisco are affected by HIV and AIDS at rates similar to their proportional makeup in the San Francisco population. Latinos represent 14% of the San Francisco population and make up 15% of PLWHA (SFDPH 2008e). Among Latinos in San Francisco, most AIDS cases are among MSM and MSM-IDU (91%). Among Latinas, injection drug users represent the highest percentage of cases (46%), followed by heterosexual non-IDUs (39%). Most Latina transfemales were infected through sex (55%). (SFDPH 2007.) Latinos represent the second highest number of PLWHA in San Francisco (SFDPH 2008e).



HIV prevalence is of most concern among Latino MSM and transfemales. Among MSM, prevalence estimates range from 19% to 29% (19% in Catania et al 2001, 22% in Raymond 2009, 23% in McFarland 2008, 24% in NHBS 2008, and 29% in Schwarcz et al 2007). HIV prevalence is also high among Latina transfemales (29% in one study, Clements-Nolle et al 2001). In a study that included both Latino/a gay/bisexual men and transfemales, prevalence was 35% (Ramirez-Valles et al 2008).

Trends in new infections are difficult to assess. Most trend data in San Francisco among Latinos focuses on MSM, but the trends have not been tracked long enough to make any reliable assessments about whether new HIV infections are increasing, decreasing, or staying the same in this group. More longitudinal studies and analyses are needed to monitor changes over time.

## Behavior

Latino MSM report rates of unprotected anal sex similar to those for other racial/ethnic groups. In one study, 19% of Latino MSM living with HIV reported unprotected insertive anal sex with HIV-negative or unknown status partners (Schwarcz et al 2007). One-fourth of Latino/a gay/bisexual men and transfemales in one study reported unprotected anal sex in the prior 12 months (25% receptive and 27% insertive; Ramirez-Valles et al 2008). Data from the Trayectos Study conducted in San Diego revealed that about half of gay and bisexual Latino participants were consistent condom users, and among those who were not, there was considerable variation in their behaviors, with some choosing not to use condoms only in occasional instances and others unable to maintain regular condom use (Carrillo et al 2008). Less recent studies document high rates of unprotected anal sex among Latino MSM (for a full discussion with supporting references, see p. 87 of the 2004 San Francisco HIV Prevention Plan).

## Factors That Affect HIV Risk in San Francisco

The Latino population in San Francisco is diverse. Some individuals are U.S.-born, whereas others have immigrated here. Among immigrants, some have been in the U.S. for a long time, and others have been here for only a few months or years. Latino immigrants are also diverse in terms of country of origin and generation. Therefore, there is not one single HIV prevention approach that will work with all Latinos.

Despite this diversity, Latinos are affected by some common experiences that may increase their vulnerability to HIV, although not all of them have proven links to increased HIV risk in this population. These potential cofactors include discrimination and stigma, cultural context, immigration and acculturation, language barriers, and substance use.

**Discrimination and stigma.** Discrimination and stigma regarding homosexuality and HIV can lead to low levels of knowledge and increased potential for high-risk behavior to occur. In a study of Latino migrant workers in San Francisco, there was a high degree of HIV-related stigma among the sample and corresponding high levels of misinformation about HIV and HIV transmission (Kral et al 2006). Among a sample of Latino gay men in three U.S. cities, men who reported more instances of discrimination, including homophobia, had higher levels of psychological distress and were more likely to encounter “difficult” sexual situations (Diaz et al 2004). Studies in other U.S. locales echo these findings (Jarama et al 2005).

**Cultural context.** Certain cultural factors can influence HIV risk among Latinos, both negatively and positively, including sexual silence, familismo, and machismo (Marin 2003, Organista et al 2004). In many Latino communities, open discussion of sex and sexuality is not accepted. Such norms may inhibit the negotiation of condom use before sex, lest it be interpreted as a sign of infidelity (Hirsch et al 2002). Communication between parents and their children regarding sex and condoms may be affected by sexual silence as well. A study among Latinas showed poor communication about sex between mothers and daughters, low sexual comfort and knowledge about human sexuality, inaccurate perceptions of HIV risk, and poor HIV risk reduction skills (Gomez et al 2002). Machismo may also be associated with increased HIV risk, at both the individual and community levels. Latino MSM who adhere to or believe in traditional gender roles, of which machismo may be a part, may be less likely to acknowledge that they have sex with men. In contrast to factors that

increase HIV risk, familismo, which means being committed to the family, can be a great motivation for Latino men to have safer sex (Lescano et al 2009, Ryan et al 2009).

**Immigration, acculturation, and language.** Immigration and acculturation also influence the degree to which Latinos are at risk for HIV. Acculturation, which in this case is the extent to which Latino immigrants have adopted the U.S./San Francisco culture, has also been shown to influence risk. However, the research is mixed as to whether acculturation increases HIV risk or protects against HIV (CAPS 2002). A recent study showed that HIV prevalence among Latino gay and bisexual men in San Francisco was higher among U.S.-born residents than among those born outside the country (Ramirez-Valles et al 2008). In addition to the effects of acculturation, Latino immigrants face many challenges that affect HIV risk, such as poverty, lack of employment, various educational levels, and migrant labor conditions (Organista et al 2004). Further, non-citizen Latinos may encounter barriers to accessing and receiving health-related services, including HIV testing and other HIV prevention services due to fear of deportation, policies that require mandatory HIV testing for immigrants, and discrimination (CAPS 2002). Some Latino immigrants may come here without their spouses or families. Feelings of loneliness and isolation, combined with poverty and lack of access to employment, can create situations where unsafe sex is more likely to happen. Latino immigrants are also less likely to have access to HIV prevention services because of language or educational barriers. (See also the section on Immigration, p. 139.)

Anecdotally, immigrants who are incarcerated and find out their HIV status while in jail are another group of concern, as they might be deported as a result of their HIV status but return to the U.S. seeking health services.

**Day labor.** Although engaging in day labor is not in itself an HIV cofactor, Latino day laborers are a population of concern in San Francisco because of their exposure to multiple HIV cofactors, and anecdotal reports suggest that this population's HIV risk should be closely monitored. The most conclusive statement that can be made about this group is that there is little data documenting HIV risk and/or prevalence (Sanchez et al 2004). In a study that included 126 San Francisco day laborers, only one individual, who was male, tested positive (Kral et al 2006). Twenty percent of male participants reported male sex partners and 8% reported transgender partners in the prior six months. The sample had high rates of misinformation about HIV transmission, low rates of HIV testing (less than half had ever tested and received their result), and high rates of HIV cofactors, including having low socioeconomic status and being marginally housed. Three focus groups with day laborers in San Francisco also found low levels of HIV-related knowledge, as well as barriers to testing such as fear of knowing their HIV status (Burkholder & Guzman, n.d.). In another San Francisco-based study, Latino migrant laborers were shown to have some prevalence of STIs, although the prevalence was low: syphilis (0.4%), chlamydia (0.5%), and gonorrhea (3.5%) (Wong et al 2003). A small local needs assessment of Latino immigrant MSM, which included day laborers in the sample, found moderate levels of risk behavior and self-reported status of living with HIV (Harder+Company 2001).

More data exists on Latino migrant workers/day laborers who live in border cities (e.g., Tijuana, San Diego) than in San Francisco, although it is not clear to what extent the findings apply to San Francisco populations, and not all migrant workers are day laborers. One Tijuana/San Diego study found reported risk factors but no HIV infections (Martinez-Donate et al 2005). In a Los Angeles study, one of the 450 participants tested positive (Solorio et al n.d.). More information is needed to understand HIV testing behaviors among this group, because it is possible that those who are getting tested are not necessarily the group most at risk for HIV (Solorio et al). For example, in a Los Angeles study, 38% of day laborers reported being solicited by another man for sex, but those solicited were no more likely to report a history of having tested for HIV (Galvan et al 2008).

**Substance use.** As with other gay and bisexual men, Latino gay and bisexual men are affected by high levels of substance use, which influences HIV risk. In a study of Latino MSM stimulant users, 51% reported methamphetamine use and 44% reported cocaine use as their most frequently used stimulant (Diaz et al 2005). Among other reasons, participants cited sexual enhancement and social connection as reasons for their drug use. Heavy alcohol use was also prevalent in a sample of Latino gay and bisexual men and transfemales (Ramirez-Valles et al 2008), a factor which has been

shown to be driving the HIV epidemic in San Francisco. In this same study, sex while under the influence of alcohol or drugs in the prior 12 months was prevalent (42% and 19%, respectively).

**Mental health.** Psychological distress among Latino gay men has been linked to experiences of discrimination, which have been linked to high-risk sexual situations (Diaz et al 2004). In one study, adult Latino MSM living in San Francisco and two other cities were twice as likely to report a history of childhood sexual abuse as other MSM; 22% reported sexual abuse before the age of 13 (Arreola et al 2005). Childhood sexual abuse has been linked to HIV risk behaviors later in life in several studies (see the section on Mental Health, History of Childhood Sexual Abuse, p. 130). On the positive side, Mexican immigrants in one study conducted in San Diego reported an increased sense of freedom and ability to be themselves upon moving to the U.S., where they could be more open about their sexuality without fear of rejection from or negative consequences for their families (Carrillo et al 2008). In this case, however, increased sexual freedom could also expose these individuals to more high-risk situations.

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## **What Are the HPPC's HIV Prevention Recommendations for Latino/Latina People?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Programs for Latinos should focus on the highest risk populations, namely, MSM and transfemales. Although not the highest risk MSM, Latino MSM who identify as heterosexual are a subgroup that should not be ignored. As mentioned before, the Latino community is diverse and no one particular approach will work for all. Programs that speak to Latinos in the context of their culture are the key to successful prevention with this group. Programs that create a sense of family support, particularly for Latinos who are not geographically or emotionally close with their families, can provide an ideal setting for prevention messages to take hold. Confidentiality is important in HIV prevention for all populations, and it is especially important with Latinos who may be engaging in behaviors that might not be accepted by their families or communities of origin. Barriers to accessing services, including language barriers, poverty, HIV/AIDS stigma, and racial/ethnic bias in health care, are important considerations (Latino Advisory Board 2009). For more on the HIV prevention needs of Latino MSM, see the box below that reviews the recommendations from the Latino MSM Action Plan.

### **Recommendations from the Latino Action Plan: An HIV Prevention Section Special Project**

In the Spring of 2008 the HIV Prevention Section convened a group of Latino MSM and allies to discuss a local Latino Action Plan to adequately address the HIV prevention needs of Latino MSM in San Francisco. The group enlisted Rafael Díaz and Jorge Sánchez to work as consultants and assist the Latino Working Group with the creation of the Latino Action Plan. Recommendations from the Latino Action Plan were approved by the HPPC in September 2009. The full plan will be available sometime in 2009/10 and can be accessed at <http://sfhiv.org/> or contact the HIV Prevention Section for a copy.

The mission of the Latino Action Plan was to employ a community participatory research approach to describe the contexts that put Latino gay men and other Latino MSM at risk for HIV in an effort to make programmatic recommendations for strengthening services. The plan produced a set of 10 recommendations. The specific recommendations from the plan were prioritized by the Latino Working Group and are as follows:

## **Recommendations from the Latino Action Plan: An HIV Prevention Section Special Project** (continued)

### **High Priority**

**Recommendation 1:** Programs that provide relevant and tailored education on the interconnection of sexuality, relationships, substances and HIV. Community building in context that emphasize a sense of *familia*.

**Recommendation 2:** Culturally relevant programs that address the functional use and impact of substances -- emphasis on connection between stimulants and HIV. Need anti drug-stigma campaign and increased provider training.

**Recommendation 3:** Culturally tailored Prevention for Positives that addresses sexual behavior, HIV disclosure, and assessments of risk for HIV transmission among positive Latino men in a way that is non-stigmatizing. Campaigns aimed at reducing HIV stigmatization in the Latino gay community.

**Recommendation 4:** Programs need to address Latino gay men's concerns for job stability and financial well-being; that is, connect HIV prevention with the existing strong motivation towards "Superación" (improve one's situation - financial, educational, physical and emotional).

### **Medium Priority**

**Recommendation 5:** Programs that welcome and target Latino English-speaking gay men need to be developed. However, this should not be done at the expense of existing programming designed for immigrant, Spanish-speaking men.

**Recommendation 6:** Programs that help men make sound and accurate assessments of HIV risk in different sexual contexts and situations, including knowledge of HIV status of self and sexual partners.

**Recommendation 7:** A guiding structure (perhaps a website online) that orients new waves of young Latino gay men who are newcomers to San Francisco; "landing pads" would be healthy and supportive contexts rather than situations of risk where Latino gay men are sexually objectified.

### **Low Priority**

**Recommendation 8:** Create a program that targets the particular issues of older English-speaking Latino gay men of lower socioeconomic status who are also marginally housed (mostly in SROs or shelters). The program should address issues of life stability, as well as access to culturally appropriate mental health and substance abuse services.

**Recommendation 9:** Programs that address high burnout rates of HIV service providers. Existing Latino programs should be funded to carry out activities that prevent burnout and sustain the long-term, enthusiastic work of their front-line staff.

The Latino Working Group suggests that the following recommendation be placed in the Special Considerations Box of the 2010 priority setting model in an effort to generate more data that will substantiate its intended purpose.

**Recommendation 10:** Programs tailored to MSM who identify as heterosexual should be developed, with targeted individual assessment and counseling by culturally trained prevention workers.

# What Are the HIV Prevention Needs of Native American People?

## Epidemiology

### NATIVE AMERICAN PEOPLE

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Data on HIV among Native Americans in San Francisco is sparse and difficult to interpret. The population of Native Americans living in San Francisco is very small (0.2%), and Native Americans make up a very small proportion of people living with HIV/AIDS. In studies not conducted specifically with Native Americans, there are usually so few Native American participants that it is difficult to draw any conclusions that are generalizable to the larger Native American population in San Francisco.

Since the beginning of the epidemic, fewer than 150 Native Americans have been diagnosed with AIDS in San Francisco (SFDPH 2008e). Native Americans might be disproportionately affected by HIV compared with their numbers in the population, but again due to small numbers, it is difficult to draw any definitive conclusions.

The distribution of Native Americans across the various risk categories appears to be different than that for other racial/ethnic groups (SFDPH 2008e). Among males, the primary mode of transmission is MSM, but a far greater percentage of Native Americans diagnosed with AIDS are MSM-IDU compared with other groups (37%, compared with 20% for African Americans, the next highest group). For females, IDU cases far outweigh heterosexual AIDS cases diagnosed through 2008 (85% vs. 15%), although this is based only on the 13 Native American women ever diagnosed with AIDS. Cases among Native American transfemales are too few to report without compromising confidentiality. In summary, injection drug use appears to be a more prominent risk factor for HIV among Native Americans compared with other populations.

It should be noted that AIDS cases and PLWHA are likely undercounted due to misclassification of Native Americans into other racial groups and other reasons. One study found that 55% of Native Americans living with HIV/AIDS in California were misclassified as other races (Bertolli et al 2007).

HIV prevalence estimates are unreliable due to the reasons cited above; thus, the following data should be interpreted with caution. Estimates in the early 2000s put the prevalence between 2% and 9% for Native Americans overall (HIV Consensus Meeting 2001, data updated to June 2003). Studies among Native American MSM have found prevalence rates of 24% (Catania et al 2001) and 31% (Raymond 2009), although in the latter study it was only five of 16 MSM and thus is too small a sample to be generalized to the larger population. Another study found a 21% prevalence among Native American transfemales (Clements-Nolle et al 2001).

## Behavior

Published data on Native Americans living in San Francisco and their behavioral risks for HIV could not be found. A few small local needs assessments and studies conducted in other urban areas provide us with a picture of behavioral risks among this group, although generalizability to San Francisco's Native Americans is unknown.

In one local needs assessment, which included males, females, and transfemales, 38% reported receptive anal sex, and of those, 42% never or almost never used condoms. Thirty percent reported insertive anal sex, and 40% never or almost never used condoms (NAAP 2006). Another small local study (n=56) found that 34% had a history of injection drug use, 38% reported unprotected sex in the last 12 months, and 49% had a history of sex trade. Males and transpersons in the sample had higher rates of all of these risk behaviors compared with the female participants (Walters 2008).

In two non-San Francisco studies with urban Native Americans, one with men and women and one with women only, about two-thirds of the sample reported recent sexual activity, and of those more than half never used a condom (Simoni et al 2004, Walters et al 2000). In the study with women, 19% reported a history of sex with an IDU, 7% had traded sex, more than half of women who were sexually active in the prior year never used condoms, and 6% had ever injected drugs (Simoni et al 2004). Data suggest a need for special attention to the unique risks faced by Native American women compared with Native American men (Stevens et al 2000) and compared with women of other races (Diamond et al 2001).

## Factors That Affect HIV Risk in San Francisco

Native Americans are profoundly affected by social and economic hardships that have been shown to be linked to HIV risk. Native Americans experience high rates of poverty and unemployment (Reynolds et al 2000), which are associated with cofactors that are directly associated with HIV transmission, including drug and alcohol use (Simoni et al 2004, Walters et al 2002, Walters et al 2000) and physical and sexual violence (Hobfall et al 2002, Simoni et al 2004, Walters et al 2000). Low perception of risk might also be a contributing factor. Other salient issues that may affect risk for HIV infection among Native Americans, but for which there is little data, include discrimination, homophobia, mistrust of health care systems, and STIs. Because there are more services in San Francisco designed for Native Americans compared with other places, many who have experienced such life hardships (especially MSM and transfemales) come here to access services, and it is especially important that service providers understand the special needs of these groups.

**Substance use.** A number of studies have documented high rates of substance use among Native Americans linked to increased HIV risk. In a local needs assessment that focused on Native Americans of all genders, 72% used alcohol, 43% used drugs, and 28% injected drugs in the prior year (NAAP 2006). In another small local sample (n=56), 23% reported alcohol dependency, and an additional 23% reported symptoms of dependency but did not have a diagnosis (Walters 2008). In a study focused on women, 62% reported alcohol use and 28% reported heavy alcohol use in the prior year (Simoni et al 2004). In a sample of Native American women living in New York, 30% reported alcohol use before having sex (Morrison-Beedy et al 2001). In a sample of men and women, 43% reported alcohol or other drug use in the past six months, and use was associated with increased sexual risk for HIV (Walters et al 2000).

**Physical and sexual violence.** Extremely high rates of physical and sexual violence are reported by Native Americans. In the San Francisco-based needs assessment, 72% reported a lifetime history of sexual assault (NAAP 2006). Women in one study reported lifetime rates of physical and sexual assault of 37% and 39%, respectively (Simoni et al 2004), and these factors in turn were associated with increased lifetime sexual and drug-related risk for HIV. In another study that included men and women, 44% reported a history of trauma, including domestic violence, physical assault, and sexual assault by a family member or stranger (Walters et al 2000). The Honor Project, a small local study, also found high rates of trauma in the form of physical neglect (16%), emotional neglect (20%), sexual abuse (43%), physical abuse (13%), or emotional abuse (36%) (Walters 2008).

**Low perception of risk.** Studies report a low perception of risk among individuals who are in fact at high risk based on their reported behaviors. Morrison-Beedy et al (2001) found that women who did not consistently use condoms reported they felt less vulnerable to HIV and were less ready to change their behaviors. In another study, among HIV-negative and unknown status respondents reporting high-risk behavior, 44% rated themselves at low or no risk for HIV. This is important because those who did perceive themselves to be at higher risk were three times more likely to report having had a recent HIV test (Lapidus et al 2006), suggesting that perception of risk is an important motivator for getting tested. Despite the barriers to testing that low perceived risk can create, in the San Francisco-based needs assessment, participants reported high rates of HIV testing; 94% of the 50 participants had taken an HIV test at some point in their lives (NAAP 2006).

## What Are the HPPC's HIV Prevention Recommendations for Native American People?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Much of the HIV-related research that has been conducted with Native American women and men is not specific to sexual orientation or BRP. However, San Francisco epidemiologic data indicates that MSM and IDUs are the Native Americans most at risk; thus, programs should focus on reaching these groups. HIV interventions for Native Americans need to be culturally appropriate and address not only the behaviors and cofactors that put them at risk, but also the larger social and cultural issues that affect risk. Interventions that include involvement in Native American cultural activities may help programs attract and retain individuals, but in one study such involvement was not associated with a decrease in the three HIV risk behaviors examined (Marsiglia et al 2006). Thus such approaches may be necessary but not sufficient to influence HIV risk. In San Francisco, many Native Americans do not live here permanently and may pass through the city for a few days, weeks, or months to sell arts and crafts or attend powwows. This should be taken into consideration when designing programs, as there might be only a short window of time during which to reach this group with testing or prevention messages.

## What Are the HIV Prevention Needs of White People?

### Epidemiology

#### WHITE PEOPLE

Epidemiologic data shows that Whites are disproportionately affected by HIV and AIDS in San Francisco, and this is largely attributable to HIV and AIDS cases among White gay men. This is in sharp contrast to the national epidemic, where only one-third of PLWHA are White compared with two-thirds in San Francisco (SFDPH 2008e). Whites represent 45% of the San Francisco population, but they make up 64% of PLWHA and between 50% and 57% of new HIV diagnoses between 2004 and 2008 (SFDPH 2008e). Although Whites continue to make up the highest percentage of HIV and AIDS cases, AIDS incidence in recent years has declined more in Whites than in other groups, which is likely due to better access to ART.

In addition, HIV prevalence is relatively high among White MSM and MSM-IDU. Studies have found HIV prevalence rates of 17-26% for White MSM (17% in NHBS 2008, 25% in Raymond 2009, 25% in Schwarz et al 2007, and 26% in McFarland 2007) and 28% for white MSM-IDU (Kral et al 2005).

Nearly all (97%) AIDS cases diagnosed among White men through 2008 have been among MSM and MSM-IDU. Among White women, over two-thirds of AIDS cases are among IDUs, with the remaining cases among heterosexual non-IDUs. Among transfemales, most AIDS cases are among IDUs (56%).

Trends in new infections are difficult to assess. Most trend data among Whites in San Francisco focuses on MSM, but the trends have not been tracked long enough to make any reliable assessments about whether new HIV infections are increasing, decreasing, or staying the same among White people overall. More longitudinal studies and analyses are needed to monitor changes over time.

### Factors That Affect HIV Risk in San Francisco

It is challenging to identify the particular behavioral risks and cofactors of White individuals because most studies do not highlight this information. This is because, many times, White individuals are used as the “standard” against which everyone else is assessed. Because racism and classism affects how research samples are recruited and who is willing to participate in research studies, White individuals are represented in virtually all study samples and often represent the majority. Therefore, much of the data we have about gay men, women, or other populations often speaks to the needs of and issues affecting White individuals, even if it is not explicitly highlighted in the findings. Many of the other populations described in this chapter (e.g., gay men, women, transfemales, IDUs) implicitly describe the needs of Whites, so additional details are not given here except when there is a particular issue needing attention.

Sexual risk is the primary factor driving new HIV infections in White MSM and MSM-IDU (Kral et al 2005, Shafer et al 2002). One study showed that among MSM living with HIV, older White men were more likely to report having had unprotected anal sex with a partner who was

HIV-negative (Chen et al 2003). Schwarz et al (2007) found that 17% of White MSM living with HIV reported unprotected insertive anal sex with an HIV-negative or unknown status partner, but this was no different than other racial/ethnic groups.

White gay men have particular drug use patterns that may put them at higher risk for HIV. For example, speed users are more likely than cocaine users to be White, male, gay or bisexual, living with HIV, and to share needles (Copeland & Sorenson 2001). A community survey among MSM showed that one significant predictor of Viagra use is being White (Chu et al 2003). All of these drugs have been associated with increased HIV risk behaviors among gay men.

White people living with HIV might also not be getting the prevention messages they need due to provider-level stereotypes. In one study of 16 publicly funded clinics located in urban and rural settings, including San Francisco, clinics where providers expressed stronger beliefs that patients living with HIV are unlikely to change their behaviors were less likely to provide HIV prevention counseling. Patients in clinics where this belief was strong were more likely to be White, gay, educated, and older (Steward et al 2006). It is not clear to what extent these findings would apply to individuals who receive care in private settings.

Finally, although Whites overall are a socioeconomically advantaged group, not all White individuals have access to the social, health, and economic resources needed to protect against HIV. Many of the cofactors that apply to marginalized populations also apply to some groups of Whites, including poverty, incarceration, sex work, and others. (See the Section III: Cofactors, p. 125).

## What Are the HPPC's HIV Prevention Recommendations for White People?

The HPPC believes that attention to the prevention needs of Whites means attention to the prevention needs of gay and bisexual men, both those who inject drugs and those who do not, as well as transfemales and female IDUs. For more information on the prevention needs of these groups, see the following sections: Gay Men, p. 66, Bisexual Men, p. 70, Transfemales, p. 75, and Injection Drug Users, p. 88.

# PART E Youth

## What Are the HIV Prevention Needs of Youth?

In most cases, the HPPC defines youth as people age 24 and under. The 25- to 29-year-old age group often falls in the gray area between youth and adults, so some data on this age group is also presented here.

Youth in general are vulnerable to many health issues, simply because they lack the power and access to accurate information that many adults in our society take for granted. Furthermore, young people, more than older people, are forming their sexual identities in the context of peer pressures and societal values and norms that may not support the identities they are discovering. Their behaviors and risks might change as they experiment with what feels right for them. In an ideal world, all youth would have access to the information, skills, and support that will help them make healthy choices about sex and drugs that would ultimately protect them from HIV. In the real world of limited resources, it is important to recognize that certain youth are particularly vulnerable and require special attention. These youth are highlighted in the following sections.

## Epidemiology

Nationally, it is estimated that 35% of all new HIV infections occur in young people ages 13 to 29 years old (MMWR 2008). In San Francisco, the HIV patterns are decidedly different. In 2008, 26% of newly diagnosed HIV infections were among this age group, and two thirds of those (62%) were among 25- to 29-year-olds (SFDPH HIV Epidemiology Section, special data



request, April 2009). In addition, HIV prevalence among youth is extremely low compared to other groups and incidence has mirrored this trend by also remaining low; furthermore, youth incidence and prevalence in San Francisco decreased between 1989 and 1998 (Razani et al 2006). Twenty-five years into the HIV epidemic in San Francisco, it appears that HIV incidence and prevalence continue to remain more of a concern in older groups.

Despite this encouraging news, some groups of young people in San Francisco are more at risk than others:

- **MSM and MSM-IDU youth are at greater risk than other youth.** Young MSM and MSM-IDU represent 74% of the 164 PLWHA aged 13 to 24 in San Francisco, excluding those who were perinatally infected.
- **Older MSM youth (25-29) have a higher HIV prevalence than younger MSM youth (under 25).** Prevalence data for MSM youth of different ages are presented in Exhibit 5. MSM in older youth age groups have higher prevalence than younger youth. The most recent data on MSM youth comes from two quasi-probability-based samples of MSM in San Francisco, both of which showed HIV prevalence among MSM under 25 at 4% (Raymond 2008a, NHBS 2008).
- **How youth are affected by HIV differs by race/ethnicity.** African American MSM youth in most studies have a higher HIV prevalence than other racial/ethnic groups, followed by Latinos, both locally and in other urban areas (Valleroy et al 2000, MMWR 2001). For HIV prevalence among various youth populations, see Exhibit 5. Among 20- to 29-year-olds living with HIV/AIDS, who may have acquired HIV at younger ages, Whites represent the majority of cases among men, but people of color represent the majority of cases among women and transfemales (Exhibit 6).
- **Youth affected by certain cofactors, such as homelessness, could be at greater risk.** Several studies conducted in the 1990s showed that homeless male youth, particularly those identifying as gay/bisexual, had a very high HIV prevalence (for a summary of studies, see p. 96 of the 2004 San Francisco HIV Prevention Plan), although recent data is lacking.

## EXHIBIT 5 HIV Prevalence Among MSM and IDU Youth in San Francisco

YOUTH POPULATION	PREVALENCE AND SOURCE
MSM ages 15-17	2% (Waldo et al 2000)
MSM ages 15-22	7% (Valleroy et al 2000)
MSM ages 18-22	7% (Waldo et al 2000)
MSM ages 18-29	9% (Catania et al 2001)
MSM ages 18-24	0% (Schwarcz et al 2007)
MSM under 25	4% (Assort Study 2008, NHBS 2008)
MSM ages 22-33	10% (Catania et al 2001)
Young MSM-IDU	12% (Bacon et al 2006)
Young African American MSM	16% (Valleroy et al 2000)
Young Asian and Pacific Islander MSM	3% (Choi et al 2004)
Homeless MSM and MSM/F under 30	11% (Robertson et al 2004)
Young homeless gay and bisexual males	29% (Robertson et al 2004)
Young gay and bisexual street-recruited IDUs	16% (Shafer et al 2002)

It should be noted that HIV prevalence among youth under 25 does not necessarily provide a complete picture of risk among youth. Individuals diagnosed and/or living with HIV in their twenties (or older) likely acquired HIV when they were younger, and thus might be a useful group to examine in order to understand youth HIV risk. Data on 20- to 29-year-olds living with HIV/AIDS are presented in Exhibit 6 as an indicator of youth risk.

## EXHIBIT 6 People Living with HIV/AIDS, Ages 20 to 29\*

	AFRICAN AMERICAN		ASIAN AND PACIFIC ISLANDER		LATINO		NATIVE AMERICAN		WHITE		TOTAL**	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Males	279	73	175	83	606	88	27	85	1718	95	2853	90
Females	68	18	21	10	47	7	NR	NR	72	4	215	7
Transfemales	37	10	14	7	34	5	NR	NR	25	1	114	4
TOTAL	384	100	210	100	687	100	32	100	1815	100	3182	100

Source: HIV Epidemiology Section, special data request, January 2009.

NR = Data not reported due to small numbers.

\*Age at earliest documentation of HIV status. AIDS diagnosis date was used if no earlier documentation existed.

\*\*Includes people with multiple or unknown race.

### Behavior

In the past 10 to 15 years, a body of research has emerged documenting high-risk behaviors among youth in San Francisco, including high rates of sexual activity, initiation of sex at an early age, multiple sexual partners, low condom use rates, and high rates of injection and non-injection drug use, with a particular focus on homeless and marginally housed youth. More recent research has explored new questions and focuses largely on IDU youth. Findings from three of these studies are as follows:

- A mobile population of young IDUs (i.e., moving in and out of San Francisco) in one study had higher rates of risk behavior than non-mobile IDUs (i.e., those who had not travelled outside of San Francisco in the prior three months), including a higher number of sexual and IDU partners and receptive syringe sharing (Hahn et al 2008).
- Among young MSM-IDU in another study, consistent condom use was only 41%, but varied by partner type (Bacon et al 2006).
- Young females IDUs were more likely than their male counterparts to engage in needle borrowing and ancillary equipment sharing, be injected by someone else, report recent sexual intercourse, and have IDU sex partners (Evans et al 2003).

It is noteworthy to point out that the changes in sexual risk behaviors among gay men during the late 1990s/early 2000s may have occurred differently among young MSM compared with older MSM. For example, one study showed that MSM aged 30 to 50 had the largest increases in unprotected anal sex, and MSM aged 18 to 29 had the largest increases in reported selection of sex partners with the same HIV status (Osmond et al 2007). Another study found that young HIV-positive MSM were more likely to have unprotected sex with partners living with HIV, and that decisions about condom use were based on perception of their partners' risk for acquisition of HIV (Lightfoot et al 2005). A third study concluded the opposite; in this study, rates of unprotected sex among younger MSM surpassed those of older MSM in 2001 (Chen et al 2003). In summary, it remains unclear whether young MSM experienced the same increases in HIV risk that occurred among older MSM between approximately 1999 and 2003.

### Factors That Affect HIV Risk in San Francisco

Among the many cofactors that can lead to increased risk among youth, substance use, sex work, homelessness, and being unaware of HIV status are the most well-documented and are discussed below. STIs, which may facilitate HIV transmission, are also discussed and might increase an individual's risk if exposed to HIV, but do not appear to be contributing substantially to an HIV epidemic among youth overall in San Francisco, with the possible exception of young MSM.

**Substance use.** The link between sexual risk behavior and drug use is particularly strong for gay male and IDU youth. For example, among 15 to 22 year old gay and bisexual men, use of speed, ecstasy, and poppers was associated with unprotected anal intercourse (Waldo et al 2000). In addition, studies have found that young IDUs commonly have injection partners or sexual partners with whom they share needles and drug preparation equipment (Hahn et al 2002), particularly young female IDUs (Evans et al 2003, Hahn et al 2008). Frequent and heavy use of alcohol, as well as polysubstance use, among young gay and bisexual men were shown to be associated with multiple sex partners and HIV seropositivity in one study (Greenwood et al 2001). Heavy alcohol use and polysubstance use, which have been found to be associated with HIV risk, were more common in young mobile IDUs compared with those who were more permanently settled in San Francisco in a study by Hahn et al (2008). (See also the Sections on Gay Men, p. 66, and IDUs, p. 88.)

**Sex work.** Drug use is closely linked with sex work; in a recent study of young MSM-IDU, 68% reported being paid by another man for sex (Bacon et al 2006). In this same study, HIV infection was independently associated with having a higher number of paying sex partners and a history of gonorrhea.

**Homelessness.** As mentioned earlier, numerous studies throughout the 1990s have found high rates of HIV among homeless and marginally housed youth in San Francisco, particularly gay/bisexual male youth. Homelessness and being a runaway have a substantial effect on the types of risks youth engage in. Data shows that homeless youth have high rates of injection drug use, having sex while under the influence of alcohol or drugs, and needle sharing and reuse. They are also exposed to sexual coercion and abuse, engage in survival sex, have multiple partners, use condoms inconsistently, and use speed and heroin. Homeless youth who use heroin, speed, or cocaine might take more sexual risks than non-users. (For supporting studies for the data on homelessness among youth, see p. 98 of the 2004 San Francisco HIV Prevention Plan.)

**STIs.** The prevalence of STIs indicates that youth are engaging in behavior that could put them at risk for HIV. African American youth, in particular, have six to eight times higher rates of chlamydia and gonorrhea than other racial/ethnic groups (SFDPH STD Prevention and Control, special data request, January 2009). Fortunately, to date, this population has not experienced a corresponding HIV epidemic, probably due to a low initial prevalence of HIV in youth sexual networks.

**Lack of knowledge of HIV status.** In general, youth are probably less likely than adults to perceive themselves to be a risk for HIV. Young African American MSM reported not testing frequently for HIV and engaging in high-risk behavior because they perceived that they or their partners were at low risk for infection (MMWR 2002). Among those who tested positive in this study, nearly all were unaware of their infection. A study of young MSM-IDU echoed this finding; 42% of those who tested positive were unaware they were infected (Bacon et al 2006).

## **What Are the HPPC's HIV Prevention Recommendations for Youth?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV prevention programs for youth should be integrated and interconnected to other services, such as substance use, mental health, STI testing and treatment, housing, educational development, job training, and syringe access, given that youth at risk for HIV have multiple pressing and compelling needs. Programs should focus on the highest risk youth, including MSM, IDU, and homeless or marginally housed youth. Peer approaches are particularly important, and services provided to youth should be sensitive to their physical, developmental, and emotional needs. When possible, resources permitting, youth who might not currently report high-risk

behavior but who could potentially become high-risk in the future, should also be reached with prevention messages. This would include youth who may be dealing with issues around sexual identity and those who might be exposed to situations in which drugs are used or injected.

## PART F Additional Populations

### What Are the HIV Prevention Needs of People Who Test Late for HIV?

#### PEOPLE WHO TEST LATE FOR HIV

#### Epidemiology

In recent years, there has been great interest in San Francisco and nationally in people who are living with HIV but are unaware of their infection, because these individuals might unknowingly transmit HIV, which fuels the epidemic. Many of these people do not find out their HIV status until months or even years after they become infected, and often their HIV diagnosis is made only because they develop an opportunistic infection, which prompts them to seek medical care.

In order to describe the demographic characteristics of people who test late for HIV in San Francisco, it is necessary to define what constitutes a “late tester.” A commonly accepted definition is a person who receives an AIDS diagnosis within 12 months of their first positive HIV test, but new research (Schwarcz et al 2008a) has uncovered an important limitation in this definition, which is that a substantial proportion of individuals who meet these criteria did not test late for HIV. There are at least two other reasons for receiving HIV and AIDS diagnoses within 12 months of each other (S. Schwarcz, personal communication, December 2008). First, some people living with HIV experience a transient decline in CD4 count resulting in an AIDS diagnosis due to acute HIV infection, use of steroids, or other unknown reasons, even if their HIV diagnosis was made early in the course of their disease. Second, on occasion, people living with HIV can develop an opportunistic infection soon after seroconversion, resulting in an AIDS diagnosis.

Using this definition of an AIDS diagnosis within 12 months of a first positive HIV test, it was believed that approximately 39% of all people living with AIDS in San Francisco tested late for HIV (Schwarcz et al 2006). However, based on in-depth interviews with a sample of people whose circumstances met the definition of late testing, this definition may misclassify approximately 41% of individuals (Schwarcz et al 2008). (An additional 42% of those originally classified as late testers could not be assessed to determine whether they actually tested late because they were not living in San Francisco, declined to be interviewed, were lost to follow up, or other reasons.) Given these findings, the prevalence of late testing in San Francisco is probably much lower than previously estimated.

Late testing in San Francisco was thought to be associated with younger age (less than 30), identifying as heterosexual, having no reported risk, having prior or no insurance, and being born outside the U.S. (Schwarcz et al 2006). These factors might in reality be associated with other reasons for an early AIDS diagnosis, and further research is needed. A handful of studies conducted in San Francisco have documented high percentages of unrecognized HIV infections in some demographic groups (Exhibit 7). A very recent study found that in San Francisco, high concentrations of MSM who do not know they are infected can be found in public sex environments, suggesting that HIV testing can be promoted in specific settings to reach late and non-testers (Raymond et al 2008).

## EXHIBIT 7 Unrecognized HIV Infection Among MSM in San Francisco

POPULATION	PARTICIPANTS LIVING WITH HIV WHO WERE UNAWARE OF THEIR STATUS
	PERCENT
Overall	19%
<b>BY RACE/ETHNICITY</b>	
African American	33%
Asian and Pacific Islander	30%
Latino	32%
White	2%
Additional/Unknown	50%
<b>BY AGE</b>	
13-24	36%
25-49	23%
50+	5%

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Source: NHBS 2008.

Finally, a revised definition of late testing might be needed that excludes people who did not actually test late. One possibility is to incorporate a criterion related to a person's most recent HIV-negative result, which could help to determine when seroconversion actually occurred in relation to the date of the first HIV-positive test.

### Behavior and Factors That Affect HIV Risk in San Francisco

While there is no single profile of a person who tests late in San Francisco, there are three specific issues that contribute to people not testing or delaying testing for HIV: (1) cognitive factors (knowledge, beliefs, and perceptions about HIV and personal risk), (2) substance use, and (3) social and structural barriers to HIV testing. Each of these is discussed below.

**Cognitive factors.** Several studies done in different parts of the U.S. have documented that a perception of not being at risk, fear of finding out one is living with HIV, fear of stigma and discrimination, and low levels of knowledge of how HIV is transmitted are all reasons that people avoid or delay testing (Fortenberry et al 2002, Harder+Company 2007, Kellerman et al 2002, MacKellar et al 2005). In San Francisco, a small qualitative needs assessment found that, in addition, even people who perceived themselves to be at high risk for HIV prior to finding out their status recall being relatively unconcerned about HIV at the time, and thus delayed testing (Harder+Company 2007). In this same assessment, those who considered themselves at low risk for HIV but later tested positive tended to be heterosexually identified males and believed HIV primarily affected the gay community, which contributed to delayed testing.

**Substance use.** In the Harder+Company qualitative assessment (2007), several participants cited their substance use as a barrier to them acknowledging their risk and getting tested. Being high or drunk, survival needs, and the effort involved in maintaining a drug habit were all cited as life realities that overshadowed or obscured concern about HIV.

**Social and structural barriers to HIV testing.** Overall, the strategy of targeted testing has been successful at identifying new HIV infections because it focuses on raising awareness of risk and encouraging testing among demographic and behavioral risk groups with high rates of HIV infection. Its weakness has been that it does not effectively reach those who do not fall into traditional high-risk groups and those who do not perceive themselves to be at risk,

resulting in late or non-testing among some people who are actually infected. Individuals in these groups are unlikely to seek testing on their own. They may not have access to health care, and even if they do, it is possible that their provider would not offer them an HIV test. Often, patients seeking health care who are living with HIV but do not know it may present with an entirely unrelated issue, and the provider then addresses only this issue and does not assess for HIV risk or offer testing. To address this, structural supports for HIV testing need to be put in place, such as routine testing protocols and improved reimbursement structures for routine HIV testing.

The following recently implemented strategies, policies, and legislation at the local, state, and federal levels might eventually help to reduce these types of barriers:

- CDC's revised recommendations for HIV testing in health care settings, which encourages routine (non-targeted) opt-out HIV testing for all individuals aged 13 to 64 in settings where the prevalence of HIV is either unknown or greater than 0.1%, and annual re-testing of high-risk individuals (MMWR 2006a);
- CDC's pilot project for increasing routine HIV testing in emergency room settings (San Francisco is one site);
- California's AB 682, which removed the requirement for written consent for HIV testing in order to reduce barriers to HIV testing in private medical settings, which went into effect on January 1, 2008; and
- California's AB1894, which requires health care plans operating in the state to pay for routine HIV testing, which went into effect on January 1, 2009.

These structural changes have already begun to affect the way that HIV testing is implemented both in private settings (e.g., new guidelines at Kaiser Permanente regarding HIV screening) as well as public (e.g., encouragement of HIV testing among California's Family Planning, Access, Care and Treatment Providers [FAMILYPACT]).

## **What Are the HPPC's HIV Prevention Recommendations for People Who Test Late for HIV?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

It is critical, both for HIV prevention and the health of San Franciscans, that people who are HIV-infected but do not know it learn their HIV status as early as possible. This means employing a range of strategies to try to reach these individuals, including social networks-based approaches, indentifying and targeting venues where high concentrations of people at risk for late testing can be found, providing the education and knowledge so that people can accurately assess their own risk, and structural changes (such as routine testing) that will facilitate HIV testing of people at risk even when they are not necessarily seeking an HIV test. In addition, interviews with people who test late in San Francisco revealed that many may be unaware that there are effective therapies for HIV and that they are available at low or no cost (Schwarcz et al 2008), suggesting a need for community education. Further, some interviewees expressed an interest in having providers be more assertive in discussing HIV testing, by presenting it as a strong recommendation as opposed to a suggestion or offer (Schwarcz et al 2008a). See the accompanying box on the local needs assessment conducted with people who tested late for HIV for additional recommendations (p. 113).

## Recommendations from an HPPC-Prioritized Needs Assessment: People Who Test Late for HIV

In June 2006, the HPPC prioritized a behavioral needs assessment with individuals who test late in the course of HIV disease (Harder+Company 2007). The needs assessment used the following methods: review of local AIDS case registry data, semi-structured qualitative interviews with 25 individuals who tested late for HIV, and two focus groups with sub-samples of interview participants. The study explored the demographic and risk characteristics of individuals who test late for HIV in San Francisco, barriers to HIV testing among this group, factors that led individuals to ultimately get tested, and strategies that would have encouraged people to test earlier. The researchers offered the following recommendations based on the findings:

- Consider late HIV testing in the design of prevention efforts for specific risk groups and populations.
- Provide prevention messages that emphasize ability to lead a healthy life after testing positive for HIV.
- Employ social networks-based strategies and others that promote disclosure.
- Provide financial and other incentives to encourage HIV testing among substance users at high risk for HIV.
- Provide prevention messages tailored to those who do not see themselves as being at risk for HIV.
- Provide post-test and follow up counseling to individuals who perceive themselves to be at low risk for HIV.
- Learn more about the effectiveness of HIV screening in health care settings.
- Develop structural interventions aimed at promoting earlier HIV testing.
- Provide prevention messages that are linguistically and culturally appropriate to reach Latinos and persons born outside the U.S.
- Conduct additional research regarding late HIV testing in San Francisco.

## What Are the HIV Prevention Needs of Non-San Franciscans and New San Franciscans?

### NON-SAN FRANCISCANS AND NEW SAN FRANCISCANS

Non-San Franciscans at risk for HIV include three main groups: (1) individuals who live outside of the Bay Area who come here for a few days or a few weeks for business or leisure; (2) individuals who live in other Bay Area locales such as Oakland or San Mateo and work here and/or come here for leisure; and (3) individuals who have just moved to the city from elsewhere in the U.S. or another country. Data on HIV epidemiology and risk for these populations is limited, except for immigrants (see the section on Immigration, p. 139).

**People who live outside of San Francisco or the Bay Area (groups 1 and 2 above).** People come from all over the Bay Area and the country to socialize and enjoy the freedoms and opportunities that San Francisco has to offer. Mobility of populations in general – both due to changing residence and traveling (e.g., for business, circuit parties) – has implications for HIV transmission and affects epidemics all over the country. Anecdotally, individuals who live in the Bay Area and commute to San Francisco for work or come here for leisure may tend to be higher risk than tourists.

HIV risk is of particular concern among gay men and other MSM who come to the city for recreation. Gay men from other locales may be attracted to San Francisco because of the strong gay community here and thus may engage in the same behaviors that gay men who live here do, even if there are different norms in their home communities. These men might only be reached by HIV prevention when it is done at certain times and places – e.g., during late night hours, at bars or clubs. Men who do not identify as gay may come to the city for sex with men (Harder+Company 2004a) or transfemales (Coan et al 2005). Such opportunities are accessible here in a way they are not in other Bay Area cities, and these men may feel safer engaging in such behaviors outside of their hometowns for privacy reasons.

Data from two 2008 representative quasi-probability samples of MSM reached in bars, on street corners, and other places where MSM congregate revealed that out of towners were similar to long-time residents in their reported rates of unprotected insertive and receptive anal sex, but were less likely to be HIV-positive (Raymond 2008b).

### **People who recently moved to San Francisco (group 3 above).**

Newcomers to San Francisco are another group of concern. Both immigrants and those moving here from other areas in the country, especially gay men and other MSM, are not yet accustomed to the unique culture of San Francisco. The norms and values that newcomers bring with them from their hometowns might act as protective factors against HIV, or they might put them at greater risk in sexual or drug use situations.

Data on this group is mixed. One random digit dial telephone survey of gay men conducted in 2002-2003 found that unprotected receptive anal sex with a serodiscordant partner among men not known to be HIV-infected was independently associated with having lived in San Francisco for less than one year (Schwarcz et al 2007). In contrast, data from the 2008 quasi-probability samples of MSM mentioned above showed that those who lived in San Francisco less than three years were also similar to long-time residents in their reported rates of unprotected insertive and receptive anal sex, and also were less likely to be HIV-positive (H. Fisher Raymond, personal communication, December 2008). In a subsample of MSM in a 2008 quasi-probability-based study of San Francisco MSM (n=138), HIV positivity among newcomer MSM (in San Francisco for 2 years or less) was lower than the overall prevalence among MSM (14% vs. 26%; NHBS 2008). However, unrecognized HIV infection was higher among newcomers (26% for newcomers vs. 17% overall; NHBS 2008), possibly due to not getting tested at all or testing less frequently in their home of origin (H. Fisher Raymond, personal communication, February 2009).

## **What Are the HPPC's HIV Prevention Recommendations for Non-San Franciscans and New San Franciscans?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV prevention programs must consider that, regardless of who their priority population is, they will likely encounter non-San Francisco residents or individuals who have just moved here. Addressing their prevention needs is important because of the potential for the spread of HIV within and outside of San Francisco. A regional focus on HIV prevention is also needed and requires Bay Area-wide coordination of HIV prevention, especially between East Bay cities (e.g., Oakland, Berkeley) and San Francisco.



### INTRODUCTION

Drivers of the HIV epidemic are one of the four focus areas highlighted throughout this Plan. Although drivers are being explicitly integrated into HIV prevention in San Francisco for the first time with the implementation of the 2010 HIV Prevention Plan, the concept underlying drivers is not new.

#### The HPPC's Definition of a Driver

A driver is an underlying condition that is directly linked to a large number of new infections throughout San Francisco. By definition, drivers should be factors that are affecting the high-risk behavioral risk populations, or BRPs (MSM, TFMS, or IDU), since that is where the bulk of new infections are.

Like cofactors, drivers are underlying conditions that may lead people to engage in high-risk behaviors such as unprotected sex or risky injection practices, or factors that may increase individuals' susceptibility to HIV. The list of drivers is limited exclusively to conditions that appear to be independently fueling a large number of new infections; in contrast, cofactors are associated with fewer infections or may not be independently associated with new infections. Therefore, drivers influence not just individuals or communities, but the continuation of the epidemic in San Francisco as a whole. Addressing drivers through HIV prevention efforts presents an opportunity to reduce the spread of HIV by addressing these motivators of risky behavior and factors for increased susceptibility. Drivers' independent link with large numbers of new infections makes them an essential component of HIV prevention.

In order for drivers to be fueling a large number of new infections, a driver must have an independent association with increasing an individual's risk for HIV, and must be experienced by a large proportion of people in groups where most new infections are occurring. Using this logic, the HPPC developed the following criteria to help define and identify drivers.

To be a driver of HIV in San Francisco, an issue must meet the following criteria:

1. Have at least 10% prevalence among one of the high-risk behavioral risk populations (BRPs) where the bulk of new infections occur. These include Males who have sex with Males (MSM), Injection Drug Users (IDU), and Transfemales who have sex with Males (TFMS); and
2. Be an independent factor for HIV, making a person in a high-risk BRP two times as likely to contract HIV compared to someone who is not affected by the driver.

Regarding criterion #2 above, "independent" means that, even taking into consideration other issues, the factor in question is still linked to HIV acquisition. For example, people who seroconverted might report methamphetamine use, ketamine use, and a history of depression. Each of these three factors can be tested to see if it has a direct link (i.e., an independent association) to HIV transmission by using statistical methods to adjust for the influence of the other factors. This process is called "controlling for other factors".

There are two important issues to understand in relation to drivers. First, overarching factors such as racism, homophobia, poverty, loneliness, and lack of access to health care create an environment in which certain individuals or communities become more prone to experiencing a driver, thus increasing risk for acquiring HIV. While these contextual factors are not proximal enough to the point of HIV infection to be identified as drivers, they must not be overlooked. For a fuller discussion of contextual factors, see Chapter 3: Priority Setting, p. 150-168.

Second, some issues may be cofactors for certain populations but do not rise to the level of a driver as defined by the above criteria, but that does not mean they are not important. Two examples are as follows:

- 1. Internet use.** Using the Internet to find sexual partners is a cofactor that needs to be addressed among individuals who engage in risky behaviors with these partners. While some research has shown that MSM who meet partners on line tend to have more partners, more STIs, and more unprotected sex (McKirnan et al 2007, Rebchook et al 2003), other studies have not shown such associations (Chiasson et al 2007, Mustanski 2007). Ultimately, no research establishing an independent association between use of the Internet to meet sex partners and HIV seroconversion was found.
- 2. Sex work.** Although the prevalence of sex work among TFSM in San Francisco is higher than 10% (Clements-Nolle et al 2001) and there is an independent association with HIV infection, the increased risk is only 1.5 times higher (Operario et al 2008b), not two times as specified in criterion #2.

For a description of how drivers fit into the priority setting model, see Chapter 3: Priority Setting, pp. 155-158 and p. 162. For a list of guiding principles for addressing drivers, see Chapter 4: Strategies and Interventions, pp. 173-174.

The following sections discuss the drivers that meet the HPPC's criteria.

## SUBSTANCE USE

There are four substances that meet the HPPC's criteria for being a driver: cocaine/crack, heavy alcohol use, methamphetamine, and poppers. These are discussed below. For more on other substances and how drug use can increase HIV risk, see Section III: Cofactors, under Substance Use (p. 126). In addition, the specific effects of substance use on different populations are discussed in Section I: Populations (p. 62).

### Cocaine and Crack Use

Cocaine is an addictive stimulant that is usually sniffed, injected, or smoked. It is taken largely because of its euphoric effects, and it can enhance sexual interest and pleasure, decrease inhibitions, heighten the sense of invulnerability, and lead to increased risk behavior. It also causes hyperactivity, increased blood pressure, increased heart rate, and decreased appetite. The high usually lasts from 60 to 90 minutes and is often followed by a "crash" characterized by discomfort and depression. Crack is a smoke-able and highly addictive form of cocaine. It is also less expensive and thus is often more accessible to people in lower sociodemographic groups. The high is usually shorter than with cocaine (about 5 minutes) and the crash more profound. Cocaine and crack are often mixed with other drugs, such as heroin and hydrocodone (Vicodin).

In addition, cocaine and crack have physical effects that may increase HIV risk, such as inhibition of ejaculation, which may lengthen the sex and thus increase skin abrasions that could lead to HIV transmission. Like methamphetamine, cocaine and crack can have numbing effects that reduce pain during rough sex, and thus users might be less aware of any tissue damage occurring during anal sex that could create openings for the HIV virus to enter. Crack users frequently develop mouth sores, which could increase risk during oral sex, an otherwise low-risk behavior (Faruque et al 1996).

Cocaine/crack use is considered a driver for HIV infection in San Francisco for two reasons: (1) use is prevalent (10% or higher) among populations at high risk for HIV; and (2) one study has shown an independent association more than doubling the risk of HIV acquisition (Exhibit 8). Again, independent association means that even taking into consideration other factors, cocaine/crack use still had a direct link to HIV seroconversion in this study. Prevalence of cocaine/crack use among MSM and IDU ranges from 15% to 25%, depending on the study (see Exhibit 8 for studies). The evidence for an independent association between crack/cocaine use is not as extensive or current as it is with other drugs such as methamphetamine. Nevertheless, the HPPC's driver criteria are met. One study found increased odds of seroconversion associated with cocaine use, ranging from 2.5 to 2.8 (Chesney et al 1998).

## EXHIBIT 8 Data Supporting Cocaine/Crack Use as a Driver of HIV Infection

### PREVALENCE OF COCAINE/CRACK USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

19% of San Francisco MSM participants used cocaine in the 6 months prior to entering the study (Koblin et al 2003).

15% of MSM participants used cocaine at least 1 day per month in the past 12 months (Schwarcz et al 2007).

25% of MSM participants used cocaine in the past 12 months (NHBS 2008).

20% of IDUs injected crack, 55% used non-injection crack, 34% injected cocaine, and 18% used non-injection cocaine in the past 12 months (NHBS 2005).

### COCAINE/CRACK USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

Gay men who reported current\* cocaine use were 2.8 times more likely than non-users to seroconvert during the study. Similarly, consistent\* cocaine users were 2.5 times more likely than nonusers to seroconvert (Chesney et al 1998).

*\* Interviews were conducted periodically over the course of 6 years. Current users are defined as people who reported cocaine use during a particular interview period, but not during the previous period. Consistent users are defined as people who reported cocaine use during the current period and the interview period immediately prior.*

Additional data supporting the prioritization of cocaine/crack use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome and not HIV incidence:

- The EXPLORE study, conducted with MSM, found that high-risk sexual behavior was more common among participants during periods in their lives when they were using sniffed cocaine (Colfax et al 2005). The same study noted an increased odds of engaging in serodiscordant unprotected sex among MSM users of sniffed cocaine, and these odds appeared to increase with the frequency of cocaine use (Colfax et al 2004).
- Another study found that among MSM living with HIV, cocaine/crack users were more likely than non-users to report unprotected insertive and receptive anal sex with HIV-negative or unknown status partners, but more in-depth analysis did not establish cocaine/crack use as an independent predictor of this risk behavior (Purcell et al 2001).

Other important information related to cocaine/crack use in San Francisco is as follows:

- In 2007/2008, cocaine/crack was the primary drug use issue for 22% of people seeking publicly funded substance use treatment in San Francisco, similar to alcohol (see Exhibits 15 and 16 under Section III: Cofactors, Substance Use, p. 129, for breakdowns by race/ethnicity).
- Crack use among heterosexuals is also of concern, although it is not a driver of HIV because heterosexuals are generally a low risk group overall in San Francisco. Higher rates of risk behavior associated with crack use have been found among heterosexual men living with HIV (Courtenay-Quirk et al 2008) and poor female sex workers (Edlin et al 1994), although whether crack use is independently associated with HIV risk among this population is unclear.
- Crack use is common in the Tenderloin neighborhood, which is home to many San Franciscans living in poverty. It particularly affects African Americans and transfemales who live and/or access services there and is intricately tied to sex exchange (Williams et al 2000).

## Heavy Alcohol Use

Alcohol is a central nervous system depressant. Initially, alcohol can lead to pleasurable feelings and reduce inhibitions, but further consumption can lead to various side effects (such as tiredness, confusion, loss of consciousness, and even death), depending on how much is consumed over what period of time.

It is commonly assumed that the disinhibition-related effects of alcohol can lead people to engage in high-risk sexual behaviors, thus placing them at risk for HIV. However, research conducted in the past 10 to 15 years on the connection between alcohol use and HIV risk has been mixed, with some studies finding associations and others not. Recently, a more coherent picture seems to be emerging, in which increased risk appears to be linked specifically to heavy use of alcohol. “Heavy use” is defined differently in different studies, but the primary study that establishes an independent association with seroconversion defines it as “four or more drinks every day or six or more drinks on a typical day when drinking in the past six months” (Koblin et al 2006).

Heavy alcohol use is considered a driver for HIV infection in San Francisco for two reasons: (1) heavy use is prevalent (10% or higher) among populations at high risk for HIV, and (2) one study has shown an independent association doubling the risk of HIV acquisition (Exhibit 9). Like with cocaine/crack use, the evidence is not as extensive as it is with other drugs such as methamphetamine, but the HPPC’s driver criteria are met. The association between heavy alcohol use and HIV seroconversion was found in the EXPLORE study with MSM, in which all levels of alcohol use were initially found to be associated with seroconversion, but only heavy alcohol use was ultimately found to have an independent association with twice the risk of acquiring HIV during the study (Koblin et al 2006).

### EXHIBIT 9 Data Supporting Heavy Alcohol Use as a Driver of HIV Infection

#### PREVALENCE OF HEAVY ALCOHOL USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

52% of MSM participants reported having 5 or more drinks in one sitting on at least one occasion in the prior 30 days (NHBS 2008).

30% of IDU participants reported having 5 or more drinks in one sitting on at least one occasion in the prior 30 days (NHBS 2005).

#### HEAVY ALCOHOL USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM heavy alcohol users (four or more drinks every day or six or more drinks on a typical day when drinking) were 2.0 times more likely than non-users, light users, and moderate users to seroconvert during the study (Koblin et al 2006).

Additional data supporting the prioritization of heavy alcohol use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome, not HIV incidence:

- In the EXPLORE study, heavy alcohol use carried with it increased odds of engaging in serodiscordant unprotected sex (Colfax et al 2004).
- In another study, MSM living with HIV who used alcohol before or during sex were 4.7 times more likely to engage in unprotected insertive anal sex with HIV-negative or unknown serostatus partners in the prior three months (Purcell et al 2001).

Other important information related to alcohol use in San Francisco is as follows:

- Alcohol use is the primary drug use issue for 23% of people seeking publicly funded substance use treatment in San Francisco, second only to heroin (see Exhibit 15 under Section III: Cofactors, Substance Use, p. 129).
- High rates of heavy alcohol use have been documented among MSM in San Francisco and else-

where. Among a quasi-probability-based sample of MSM in San Francisco, 52% reported having five or more drinks in one sitting on at least one occasion in the prior 30 days (NHBS 2008).

- Although HIV is rare among teenagers in San Francisco, anecdotally, heavy alcohol use is not, and the HPPC believes that adolescence might represent an ideal time for education and support around alcohol use to prevent HIV risk later in life.

## Methamphetamine

Also called meth, Tina, crystal, crank, fire, glass, speed, or ice, methamphetamine is a stimulant that can be injected, snorted, smoked, swallowed, inhaled (“hot railed”), or inserted into the anus with a syringe that does not have a needle (“booty bumping”). It produces immediate effects including prolonged energy, feelings of euphoria, increased self-confidence, and increased sexual interest and is frequently used in club or party environments. Prolonged use can cause heart problems, brain damage, irritability, hypothermia, aggressiveness, paranoia, anxiety, and hallucinations (Swanson & Cooper 2002). At moderate doses, methamphetamine can prolong erections and thus the length of sexual activity; this can increase HIV risk due to elevated potential for small abrasions for both insertive and receptive partners that provide an opening for the virus to enter, especially during anal intercourse. At high doses, however, it can lead to erectile dysfunction. Methamphetamine is sometimes combined with erectile dysfunction (ED) medications (Mansergh et al 2006, Swearingen & Klausner 2005).

Methamphetamine use is considered a driver for HIV infection in San Francisco because: (1) its use is prevalent (10% or higher) among populations at high risk for HIV, especially MSM and IDU; and (2) one study has shown an independent association with twice the risk for HIV acquisition (Exhibit 10). Rates of methamphetamine use among MSM and IDU in San Francisco are high, ranging from 13% to 20%, depending on the study (Exhibit 10). Rates of methamphetamine use among IDUs may be even higher than among MSM, with over half of IDUs reporting injection of methamphetamine in the past year in one study (NHBS 2005). In another study (Kral et al 2005), 79% of MSM-IDU reported amphetamine injection, although this study did not meet the driver criteria because it was conducted only with MSM-IDU and not the IDU BRP overall.

Regarding its link to HIV incidence, Koblin et al (2006) found that MSM amphetamine users were twice as likely to seroconvert than nonusers (Exhibit 10). Buchacz et al (2005) found that MSM amphetamine users who tested anonymously were more likely to seroconvert than nonusers; however, this study did not meet the driver criteria because the study sample was from only one agency, making it difficult to assess whether findings could be generalized. In this study, the HIV incidence rates were 7.7% among those using methamphetamine during sex, 6.3% among those reporting any methamphetamine use, and 2.1% among non-users. A similar link to seroconversion was found for IDU methamphetamine users vs. non-users (Kral et al 2001).

### EXHIBIT 10 Data Supporting Methamphetamine Use as a Driver of HIV Infection

#### PREVALENCE OF METHAMPHETAMINE USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

23% of San Francisco MSM participants used amphetamines in the 6 months prior to entering the study (Koblin et al 2003).

17% of MSM participants used crystal methamphetamine at least 1 day per month in the past 12 months (Schwarcz et al 2007).

15% of MSM participants used methamphetamine before or during their most recent anal sexual encounter (Mansergh et al 2006).

13% of MSM participants used methamphetamine in the past 12 months (NHBS 2008).

54% of IDU participants reported injecting methamphetamine and 22% reported using non-injection methamphetamine in the past 12 months (NHBS 2005).

#### METHAMPHETAMINE USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM who used amphetamines in the past 6 months were 2.0 times more likely than those who did not use methamphetamine to seroconvert during the study (Koblin et al 2006).

Additional data supporting the prioritization of methamphetamine use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome, not HIV incidence. The association between methamphetamine use and high-risk sexual behaviors has been extremely well-documented among gay men in San Francisco, where rates of methamphetamine use tend to be higher compared with East Coast cities. Several studies link methamphetamine use with increased odds of unprotected sex among MSM:

- MSM who used methamphetamine at least once per week were 2.0 times more likely than non-users to engage in serodiscordant unprotected anal sex (Colfax et al 2004, Koblin et al 2003).
- MSM who used methamphetamine in the past year were 2.3 times more likely to report unprotected anal sex and 2.5 times more likely to report multiple partners in the past year (Buchacz et al 2005).
- MSM who used methamphetamine before or during their most recent anal sexual encounter were 2.0 times more likely than non-users to report unprotected insertive anal sex, and 2.2 times more likely to report unprotected insertive anal sex with a partner whose HIV status was different/unknown (Mansergh et al 2006).
- HIV-negative MSM who used methamphetamine were 2.8 times more likely than non-users to engage in unprotected receptive anal intercourse with non-primary partners whose HIV status was positive or unknown (Schwarcz et al 2007).

Independent associations between methamphetamine use and HIV seroconversion and risk behaviors have been found among IDUs as well as MSM. In one study among heterosexual IDUs, methamphetamine injectors were more likely than non-methamphetamine-injectors to report unprotected vaginal sex in the past six months, five or more sexual partners in the past six months, and syringe sharing in the past 30 days (Kral et al, in press). Among male IDUs, those who used methamphetamine were 4.3 times more likely than non-users to seroconvert. Among female IDUs, those who use methamphetamine were 2.1 times more likely than non-users to seroconvert (Kral et al 2001), although these associations might be explained by other factors (i.e., not independent associations).

Other important information related to methamphetamine use in San Francisco is as follows:

- In 2007/2008, 1,100 people accessed publicly funded substance use treatment in San Francisco for methamphetamine, representing 11% of all people accessing treatment (see Exhibits 15 and 16 under Section III: Cofactors, Substance Use, p. 129, for breakdowns by race/ethnicity).
- Rates of methamphetamine use are especially high among the subgroup of MSM who frequent circuit parties (43%; Colfax et al 2001) and those who "party 'n' play" (54%; Pendo et al 2003). (The vernacular term "party 'n' play," also called PNP, PnP, or even just party, is commonly understood among gay men to mean combining sex with drugs, usually methamphetamine. These terms are often used on websites where gay/bisexual men seek sex partners to indicate a desire for a combination of sex and drugs, particularly methamphetamine.)

## Poppers

Poppers is an overarching term for various alkyl nitrites. Poppers can be made and sold illegally, but most are legal products made for other uses, such as video head cleaner or room deodorizer. They are colorless or yellow liquids with an acrid odor that, when inhaled, cause a fall in blood pressure, an increase in heart rate, and muscle relaxation, among other effects. Use of poppers also leads to euphoria that can reduce inhibitions for some people, increase sexual drive, increase the ability to ejaculate, and intensify the sensations of orgasm. Because poppers relax the muscles, they can help facilitate anal play (e.g., intercourse, fisting). When used in combination with erectile dysfunction (ED) drugs, they can cause serious side effects, including fainting, stroke, or heart attack.

Poppers use is considered a driver for HIV infection in San Francisco for two reasons: (1) use is prevalent (10% or higher) among populations at high risk for HIV, especially MSM; and (2) one study has shown an independent association with twice the risk for HIV acquisition

(Exhibit 11). Rates of poppers use are high among MSM in San Francisco, ranging from 19% to 37%, depending on the study (Exhibit 11). Buchbinder et al (2005) found that MSM who used poppers were 2.2 times more likely to seroconvert than those who did not, and the population attributable risk (i.e., the percentage reduction in HIV incidence that would be observed if the poppers users had not used them) was 28%.

## EXHIBIT 11 Data Supporting Poppers Use as a Driver of HIV Infection

### PREVALENCE OF POPPERS USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

37% of San Francisco MSM participants used poppers in the 6 months prior to entering the study (Colfax et al 2004, Koblin et al 2003).

26% of MSM participants used poppers at least 1 day per month in the past 12 months (Schwarcz et al 2007).

19% of MSM participants used poppers in the past 12 months (NHBS 2008).

### POPPERS USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM who used poppers in the prior 6 months were **2.2 times more likely** than those who did not use poppers to seroconvert during the study (Buchbinder et al 2005).

Additional data supporting the prioritization of poppers use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome, not HIV incidence:

- One study found that HIV-negative MSM who used poppers were 2.6 times more likely than non-users to engage in unprotected receptive anal sex with people living with HIV or unknown status partners (Schwarcz et al 2007).
- The EXPLORE study, also conducted with MSM, found that high-risk sexual behavior was more common among participants during periods in their lives when they were using poppers (Colfax et al 2005).

## Gonorrhea

The one STI that meets the HPPC's criteria for being a driver is gonorrhea. Chlamydia has also been shown to have links to HIV seroconversion, but the evidence does not rise to the level of a driver. Chlamydia and other STIs, and the ways in which they might increase HIV risk, are discussed in Section III: Cofactors, under STIs (p. 132).

The HPPC found only one study showing gonorrhea prevalence to be greater than 10% in San Francisco. Several studies found either (1) a prevalence of less than 10%; or (2) they could not be considered because of study limitations. The majority of the sample in this one study (Kent et al 2005) were MSM patients from San Francisco City Clinic (the city's STI clinic), which might explain why STI prevalence was over 10% in this study but less than 10% in other studies conducted with broader populations. (It should be noted that almost all studies documenting STI prevalence in San Francisco come from data collected at City Clinic, because that is where the vast majority of public STI testing happens.) Therefore, it is unclear whether the community-wide prevalence of gonorrhea is 10% or greater.

Nevertheless, the Kent et al (2005) study has strengths that many other STI prevalence studies do not have: (1) it includes data collected from MSM attending a community-based health clinic, not just City Clinic data; and (2) the data is based on testing, not self-report, and thus is likely more accurate. All things taken into consideration, the HPPC believes that gonorrhea meets the driver criteria, which specified that one study showing 10% or greater prevalence was sufficient evidence to meet the first driver criterion.

Regarding the second criterion of whether STIs are linked to HIV seroconversion, in a review of over 2000 articles on studies conducted throughout the world, the authors concluded that there is "strong evidence" that both ulcerative and non-ulcerative STIs promote HIV transmission by increasing both infectiousness and susceptibility. Risk estimates in the various stud-

ies reviewed ranged from 2.0 to 23.5, with most falling between 2 and 5 (Fleming & Wasserheit 1999). The following section discusses the evidence specific to gonorrhea.

Gonorrhea is a bacterial STI. It can be transmitted through vaginal, anal, or oral sex. It can go undiagnosed because not all people have symptoms. Gonorrhea can cause tissue inflammation, which may increase biological susceptibility for acquiring or transmitting HIV infection. It is treatable with antibiotics.

Gonorrhea is considered a driver for HIV infection in San Francisco for two reasons: (1) its prevalence was found to be greater than 10% in one study among MSM; and (2) one study found an independent association with a doubling of HIV incidence (Exhibit 12). Additional supporting evidence, although it did not meet the driver criteria, is as follows:

- In one study, MSM with newly diagnosed HIV infection were more likely than HIV-negative men to be co-infected with gonorrhea (25.9% vs. 10.9%; Scott et al 2008).
- MSM with a recent HIV infection were 5.0 times more likely to be infected with gonorrhea in an analysis performed with patients at the city's STI clinic (King et al 2003). (This study did not meet driver criterion #2 because the data was from only one agency, which was a disqualifying factor.)

## EXHIBIT 12 Data Supporting Gonorrhea as a Driver of HIV Infection

### PREVALENCE OF GONORRHEA IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

14% of gay/bisexual men attending San Francisco's City STI Clinic or a community-based gay men's health center had rectal, urethral, and/or pharyngeal gonorrhea (Kent et al 2005).

### GONORRHEA IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM with self-reported gonorrhea in the prior six months were 2.5 times more likely to seroconvert during the study compared with those without gonorrhea (Koblin et al 2006).

Increased risk for gonorrhea in San Francisco is found primarily in two populations, MSM and adolescents aged 14 to 20 years, but is only a driver of HIV among MSM. In 2007, 1,032 cases of gonorrhea were reported among MSM, representing 60% of total cases among males. The rate of gonorrhea among MSM is estimated at 1,607.2 per 100,000, compared with 209.0 per 100,000 for other men. Rates by race/ethnicity are provided in Exhibit 13. In 2007, 65% of gonorrhea cases among MSM in San Francisco were among Whites, 17% among Latinos, 9% among African Americans, and 7% among APIs. These trends were stable between 2003 and 2007. The median age of MSM diagnosed with gonorrhea in 2007 was 36 years old. In 2007, 40% of MSM with known HIV status who were diagnosed with gonorrhea were living with HIV (SFDPH STD Prevention and Control, special data request, January 2009).

In 2007, gonorrhea rates among adolescents were 20% higher than the rates among adults older than 21 years. A substantial decline was seen from 2006 to 2007, but it is too early to determine whether this trend will continue. Males and African Americans are extremely disproportionately affected, especially those living in Bayview, Potrero Point, Sunnyside, Hunter's Point, and Western Addition (SFDPH STD Prevention and Control, special data request, January 2009). Fortunately, a corresponding HIV epidemic has not emerged in non-MSM youth under 21, and thus gonorrhea is not a driver of HIV infection in this group. (For more on HIV among youth, see the section on Youth, p. 106).



## EXHIBIT 13 Gonorrhea Rates per 100,000 Population, July 2007 to June 2008

	AFRICAN AMERICAN	ASIAN AND PACIFIC ISLANDER	LATINO	NATIVE AMERICAN*	WHITE	OVERALL
MSM	1,730.3	693.0	1,628.4	10	2,035.4	1,607.2
Other Males	733.0	41.0	144.5	<5	155.9	209.0
Females	445.1	11.7	62.0	<5	34.7	74.4

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Source: SFPDPH STD Prevention and Control, special data request, January 2009.

Note: This exhibit includes rectal gonorrhea cases, explaining the higher rates for males in most racial/ethnic groups. STI rates for transpersons cannot be included due to lack of data on population size and inconsistent reporting of trans identity. Nine cases of gonorrhea were reported among transpersons during this time period.

\*Case counts are presented for Native Americans instead of rates due to small sample size. Native Americans may be undercounted due to misclassification.

### MULTIPLE PARTNERS

There is no judgment associated with having multiple partners, which in itself does not increase HIV risk if all encounters are protected and there is no condom failure. Rather, it is multiple unsafe sexual encounters that increases a person's HIV risk, and multiple partners can be an indicator of this. For a person who does not use condoms 100% of the time, the higher the number of sexual partners s/he has, the more likely s/he is to be exposed to and acquire HIV simply based on odds, particularly if his or her sexual networks have high HIV prevalence. Consistent and proper use of condoms can greatly reduce this risk.

Even though other drivers and cofactors (such as methamphetamine use, finding partners on the Internet, and sex work) might be synergistically related to number of partners, several studies suggest that having multiple partners is an independent risk factor for HIV (Buchbinder et al 2005, Clements-Nolle et al 2001, Koblin et al 2006, Plankey et al 2007), although not all meet the HPPC's driver criteria. In this section, the term "multiple partners" is defined as more than one partner during a given time period, but the relationships between multiple partners and HIV are more complex than that. The studies mentioned in this section generally describe their findings in categories (e.g., 1 partner, 2-5 partners, 6-10 partners, more than 10 partners), as opposed to single partner vs. multiple partners.

Having multiple partners is considered a driver for HIV infection in San Francisco for two reasons: (1) the high prevalence (more than 10%) of having multiple partners among populations at high risk for HIV; and (2) one study reported that having multiple partners was independently associated with more than twice the risk of HIV seroconversion. Regarding the prevalence of multiple partners, several studies among MSM and transfemales document reports of more than one partner in the prior six months (Buchbinder et al 2005, Clements-Nolle et al 2001, Courtenay-Quirk et al 2007, Koblin et al 2003, Koblin et al 2006, NHBS 2005, NHBS 2008, Schwarcz et al 2007) and three of these meet the driver criteria (see Exhibit 14 for studies). An additional study documents the more than twofold increased risk of seroconversion with multiple partners, and the effect is more pronounced when unprotected receptive anal sex with multiple partners is the outcome (not just multiple partners) (Plankey et al 2007).

## EXHIBIT 14 Data Supporting Multiple Partners as a Driver of HIV Infection

### MORE THAN 10% OF ONE OR MORE HIGH-RISK BRPs REPORT MULTIPLE PARTNERS

58% of MSM participants reported having more than one sex partner in the past 6 months (NHBS 2008).

51% of IDU participants reported having more than one sex partner in the past 6 months (NHBS 2005).

37% of transfemales reported more than 10 anal, vaginal, or oral sex partners in the past 6 months (Clements-Nolle et al 2001).

### HAVING MULTIPLE PARTNERS IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM with two to four partners were **2.9 times more likely** to seroconvert than those with no partners. MSM with five or more partners were **2.5 times more likely** to seroconvert than those with no partners. In addition, MSM with two to four unprotected receptive anal sex partners were **5.3 times more likely** to seroconvert than those with no unprotected receptive anal sex partners. MSM with five or more unprotected receptive anal sex partners were **9.3 times more likely** to seroconvert than those with no unprotected receptive anal sex partners.\* (Plankey et al 2007)

*\*This study was done with MSM from Baltimore/Washington DC, Chicago, Los Angeles, and Pittsburgh.*

Additional data supporting the prioritization of multiple partners is worth highlighting, although the following studies did not meet the driver criteria:

- Schwarcz et al (2007) found that MSM with one to five partners were significantly less likely to engage in serodiscordant unprotected sex compared with those reporting six or more partners, indicating that risk may increase as the number of partners increases.
- Courtenay-Quirk et al (2008) found that HIV-positive gay and bisexual men with multiple partners were 2.8 times as likely to engage in serodiscordant unprotected anal sex, but these odds were reduced to 1.7 when controlling for other factors. It is noteworthy that this same study also found increased odds of engaging in serodiscordant sex among heterosexual men living with HIV who have multiple partners, which could contribute to new HIV infections among IDU and non-IDU females, but the evidence does not rise to the level of a driver.
- Koblin et al (2006) found that, even when controlling for other factors such as drug use, MSM with four or more partners were 1.5 to 1.8 times more likely to seroconvert compared with MSM with fewer than four partners.

### INTRODUCTION

Cofactors, along with drivers and primary risk behaviors (such as sharing needles and having unprotected sex), are critical considerations in HIV prevention planning and implementation. There are two ways in which a cofactor can increase susceptibility to HIV infection: (1) the cofactor motivates or increases the likelihood of engaging in a risk behavior (e.g., low self-esteem, sex work); or (2) the cofactor increases the likelihood of contracting HIV if exposed (e.g., presence of an STI). Drivers, which are discussed in a previous section, are “super cofactors” that are associated with large numbers of new HIV infections in San Francisco. The cofactors discussed in this section are different than drivers because, while they might increase an individual’s chance of becoming HIV-infected if exposed, they are not associated with a large portion of new HIV infections and are not necessarily independently associated with HIV infection. (For more on drivers, see Section II: Drivers, p. 115)

### Definition of a Cofactor

A condition that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages.

Individuals are complex beings with many internal and external circumstances that affect them. Individuals and communities may be affected by multiple cofactors at the same time. In fact, cofactors such as poverty, discrimination, and substance use are interrelated and tend to occur in clusters. The roots of many of these cofactors are policy-related and structural. For example, the lack of affordable housing is directly linked to homelessness, sex work, and substance use, all of which affect HIV risk. While it is important to address these cofactors at the individual level when doing HIV prevention, the implications of policy as well as the historical and environmental causes of the cofactors must also be considered.

It should be noted that although there are a number of cofactors presented here, many of them have their roots in one issue – poverty and income disparities (see p. 142). Health and disease are not equally distributed in society, and public health studies have documented a greater burden of morbidity and mortality among low-income communities across a wide range of health issues. Homelessness, incarceration, sex work, and a multitude of other issues that affect HIV risk have their roots in poverty. The HPPC believes that elimination of poverty would go a long way toward stopping the HIV epidemic, both locally and nationally. It should be acknowledged that, in San Francisco, eradicating poverty may not stop the HIV epidemic altogether. Middle and upper income individuals in San Francisco are also at risk for HIV and experience many of the same cofactors as people living in poverty, including substance use and mental health issues.

The cofactors presented in this section are not exhaustive. Furthermore, not all are prioritized (see Chapter 3: Priority Setting, p. 163, for the prioritized cofactors). Providers are encouraged to determine if additional cofactors are relevant for their specific priority populations. HIV prevention programs must have an approach to addressing the cofactors that are important in the communities they serve, either within the program or through linkages and referrals to appropriate services.

## Why Is Substance Use an Important Cofactor?

### SUBSTANCE USE

Certain substances have been identified as drivers of HIV in San Francisco (see p. 115). This section discusses how substance use in general is a cofactor for HIV infection, as well as the specific substances that do not meet the HPPC's criteria for drivers, but are still believed to be cofactors.

Substance use is believed to be responsible for a large proportion of new HIV infections in the U.S. One study found that drug use behaviors, both injection and non-injection, account for 32% of new HIV diagnoses nationally (Santibanez et al 2006). Drug and alcohol use can affect risk for HIV in many different ways, depending on the drug, the dose, the mode of administration, the context, and other factors. In general, there are three different ways substances can increase a person's risk for acquiring or transmitting HIV:

- **Sharing needles used to inject drugs.** Using a needle that has already been used by a person living with HIV increases the risk for HIV transmission.
- **Psychological/behavioral effects.** Euphoria, increased libido, increased sense of invulnerability, and increased confidence are a few of the psychological effects of recreational substances. The altered mental state can affect a person's sexual decision-making (e.g., whether or not to have sex, whether to use condoms, whether to discuss HIV status with a potential partner, whether to share needles). Several drugs have been associated with high-risk behaviors resulting from these psychological effects, including increases in unprotected anal sex, increases in number of partners, and sharing needles. Those who are dually diagnosed with both mental health and substance use issues may be at even greater risk for acquiring or transmitting HIV; for example, in one study, dually diagnosed individuals were more likely to have shared needles, have had sex in exchange for money or gifts, and have had sex with an injection drug user, than those with a substance abuse diagnosis alone (Dausey & Desai 2003).
- **Biological effects.** Although the direct effects of drugs on HIV transmission remain to be determined, many recreational drugs cause vasodilation, prolonged erection, smooth muscle relaxation, decreased pain, and increased sexual desire which may increase HIV risk. For example, sex that lasts longer due to prolonged erection or decreased sensations of pain could result in tissue damage, providing an opening for HIV to enter the bloodstream. In addition, long-term substance use may alter immune functioning, increasing susceptibility to HIV infection.

The specific relationships between various substances and HIV risk behavior has been documented in many studies throughout the U.S. and in San Francisco. HIV risk among MSM has been clearly linked with recreational drug use in multiple studies (see the section on Gay Men, p. 66). One MSM study concluded that use of alcohol or drugs before sex accounted for nearly one third (29%) of the new infections observed over the course of the study, supporting the notion that addressing substance use is critically important for HIV prevention (Koblin et al 2006).

## Substances That Can Affect HIV Risk

There are four substances that are considered drivers for HIV infection in San Francisco: cocaine/crack, alcohol (heavy use), methamphetamine, and poppers. These are described in detail in Section II: Drivers, under Substance Use (p. 116). The following paragraphs discuss other drugs that might affect risk for HIV, but are not believed to be responsible for a substantial portion of new HIV infections in San Francisco.

**Erectile dysfunction (ED) drugs.** ED drugs, which include Viagra (generic name sildenafil), Cialis (generic name tadalafil), and Levitra (generic name vardenafil), are prescription treatments for erectile dysfunction. When discussing this class of drugs generally, this section will refer to "ED drugs." When referring to findings from a particular study, the brand name of the drug studied will be used. All studies presented here to support ED drug use as a cofactor of HIV infection are based on Viagra use. ED drugs are discussed in more depth than the other

substances, because there is substantial evidence of their relationship with HIV risk, although the evidence does not quite rise to the level of a driver.

ED drugs work by increasing blood accumulation in the penis during sexual arousal and slowing the subsiding of erection after ejaculation. Although they have legitimate medical uses (specifically, treatment of erectile dysfunction, which is not uncommon among people living with HIV and older men), in the past several years, ED drugs have become more common as recreational drugs among gay men and are used in combination with other drugs such as ecstasy and methamphetamine to enhance sexual functioning and prolong pleasure. In extending the period of time a man can maintain an erection, ED drugs allow men to have sex for longer, and potentially with more than one partner, which can lead to increased opportunities for HIV transmission. Because of their popularity, they have become readily available without a prescription, through friends and on the Internet.

Relevant findings showing the high prevalence of ED drug use among MSM (and to a lesser extent among IDUs) and linking ED drug use to HIV risk include:

- Three studies document high rates of Viagra use among high-risk populations: 28% in the past 12 months among MSM (Schwarcz et al 2007), 22% in the past 12 months among MSM (NHBS 2008), and 11% in the past 12 months among IDU males (NHBS 2005).
- Among repeat testers at one agency, those who reported using Viagra in the past 12 months were 2.5 times more likely to seroconvert than those who did not use it (Loeb et al 2004).
- MSM who used Viagra before or during their most recent anal sexual encounter were 6.6 times more likely than those who did not use Viagra to report unprotected insertive anal sex, and 29.2 times more likely to report unprotected insertive anal sex with a partner whose HIV status was different/unknown (Mansergh et al 2006).
- In a review article of studies on Viagra use published between 1999 to 2004, MSM who used Viagra were 2.0 to 5.7 times more likely than those who did not use Viagra to engage in unprotected anal sex with a partner of unknown or discordant HIV status (Swearingen & Klausner 2005). (Eight of the 14 studies reviewed were conducted in San Francisco.)

**Heroin.** Heroin, which can be smoked, sniffed, or injected, causes users to feel an intense surge of pleasure, usually accompanied by warm flushing of the skin and dry mouth. Heroin is a very effective pain killer as well. Heroin users are at risk for life-threatening overdoses when it is injected (Ochoa et al 2001). Use of “speedballs” (combinations of heroin and cocaine or speed) has been associated with HIV infection (Kral et al 1998). The primary HIV risk associated with heroin is the sharing of needles, as opposed to sexual risk, because heroin can inhibit erections in men and lubrication in women and can reduce sex drive overall.

**Ecstasy.** Ecstasy (methamphetamineylenedioxyamphetamine, or MDMA) also known on the street as X, E, Adam, or Hug Drug, is an amphetamine-like substance with stimulant and hallucinogenic properties. It reduces inhibition and leads to feelings of empathy for others and deep relaxation. In some studies, ecstasy has been associated with unprotected sex among MSM (Klitzman et al 2002). Frequently, ecstasy is combined with other drugs, such as ketamine, cocaine, methamphetamine, and ED drugs to produce countering effects. Prolonged usage of ecstasy may cause memory impairments, depression, and anxiety (Swanson & Cooper 2002). Use of ecstasy during sex has been linked to acquiring drug-resistant HIV in one study (Gorbach et al 2008).

**Other recreational drugs.** Other recreational drugs, such as hallucinogens, gamma-hydroxybutyrate (GHB), and ketamine (Special K) are very popular among gay men during circuit party weekends, raves, and in public sex environments, such as bathhouses and public cruising areas. They have been shown to be associated with increased high-risk sexual practices, especially among gay and bisexual men (Purcell et al 2005b; see also the section on Gay Men, p. 66). Use of GHB during sex has been linked to acquiring drug-resistant HIV in one study (Gorbach et al 2008). Use of ketamine has been associated with use of ED drugs, in particular, Viagra (Purcell et al 2005a).

**Hormones.** Nationally, sharing needles while injecting hormones to increase female or male secondary sexual characteristics has been shown to be a risk behavior among trans populations. However, the availability of hormone needles at needle exchange sites in San Francisco accounted for low rates of needle sharing among hormone users locally in the 1990s (Clements-Nolle et al 2001). More recent studies are needed to determine whether this finding still holds true.

**Steroids.** HIV risk behaviors documented among anabolic-androgenic steroid users include needle sharing, sharing of multi-dose vials, and dividing drugs using unsterile syringes (Midgley et al 2000). HIV infections are not as common among steroid users as other IDUs, but some studies have shown that high-risk behaviors do occur among steroid users (Rich et al 1999).

**Marijuana.** Marijuana, also called pot or weed, is usually smoked but can be eaten. Only a handful of studies have found links between marijuana use and HIV risk behaviors (Celentano et al 2006, Collins et al 2005), but generally these associations become less strong or disappear when controlling for other factors. For example, one study found that gay men who seroconverted were more likely to have used marijuana than others, but they were also more likely to have used poppers and speed, which have strong associations with HIV risk (Chesney et al 1998). Marijuana use has been linked to discontinuation of HAART use, however, which could increase a person's infectiousness (Clementes-Nolle et al 2008b). MSM may be more likely to use marijuana weekly than heterosexual men (Woody et al 2001), and methamphetamine/adone users are more likely than non-users to use pot (Lollis et al 2000).

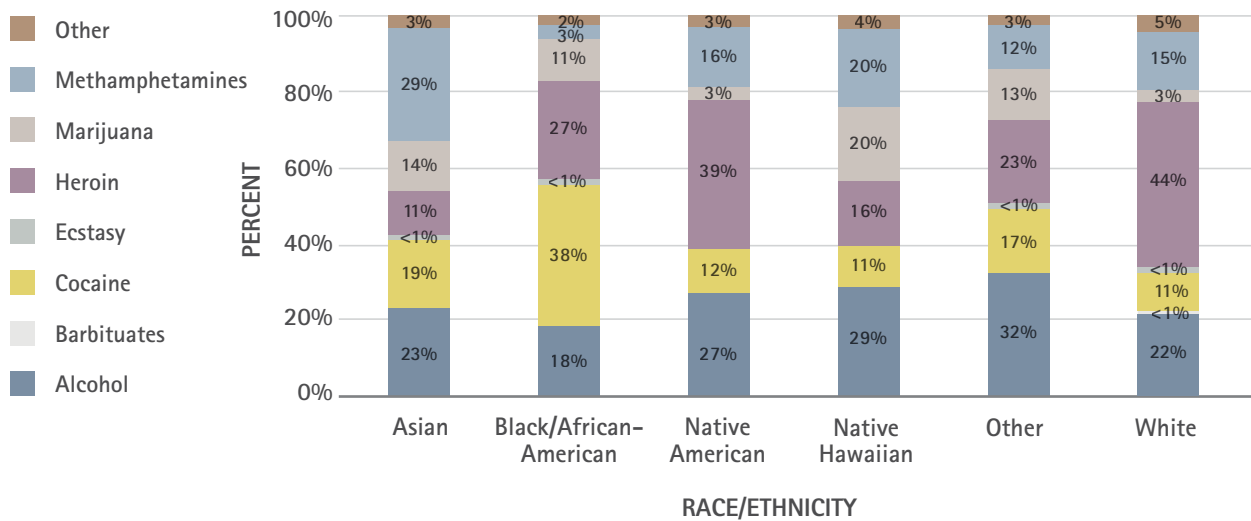
## Who Is Affected by Substance Use in San Francisco?

Substance use affects people of all races, ages, and genders. According to an article that summarized multiple studies from different locales, lesbian, gay, and bisexual women and men, as well as trans individuals, appear to have greater substance use issues than heterosexual populations (<http://www.soberrecovery.com/drug-rehabilitation-alcohol-treatment/addiction-treatment/the-epidemiology-of-substance-abuse-among-the-lgbt-population.html>), which may affect HIV risk. Substance use also affects heterosexual men and women and adolescents in San Francisco, particularly homeless and runaway youth (Van Leeuwen et al 2004).

Community-wide data on rates of substance use are lacking, but data on people accessing publicly funded treatment exists (Exhibits 15 and 16). This data suggests that some populations are disproportionately affected by substance use, including men, African Americans, and Native Americans. These racial/ethnic groups may be even more profoundly affected than treatment data would suggest, because these groups might experience barriers to accessing treatment and thus would not be represented in these data (see also the section on Access to Health and Social Services, p. 144).

Overall, heroin is the drug for which the largest number of people are in treatment in San Francisco, followed by alcohol and cocaine. Together, these three drugs account for 77% of people in publicly funded treatment. The primary drug addiction for which individuals are receiving treatment differs by race/ethnicity (Exhibits 15 and 16). African Americans have the highest rates of treatment for cocaine use (38%), Asians have the highest rates of treatment for methamphetamine use (29%), Latinos have the highest rates of treatment for alcohol use (32% across all Latino subgroups) and Whites have the highest rates of treatment for heroin use (44%). Differences among populations in the type of drug used should be taken into account when designing prevention programs and building linkages to appropriate services.

**EXHIBIT 15 Primary Drug Use Issue Upon Admission to SFPDH Substance Use Treatment by Race, July 2007–June 2008**



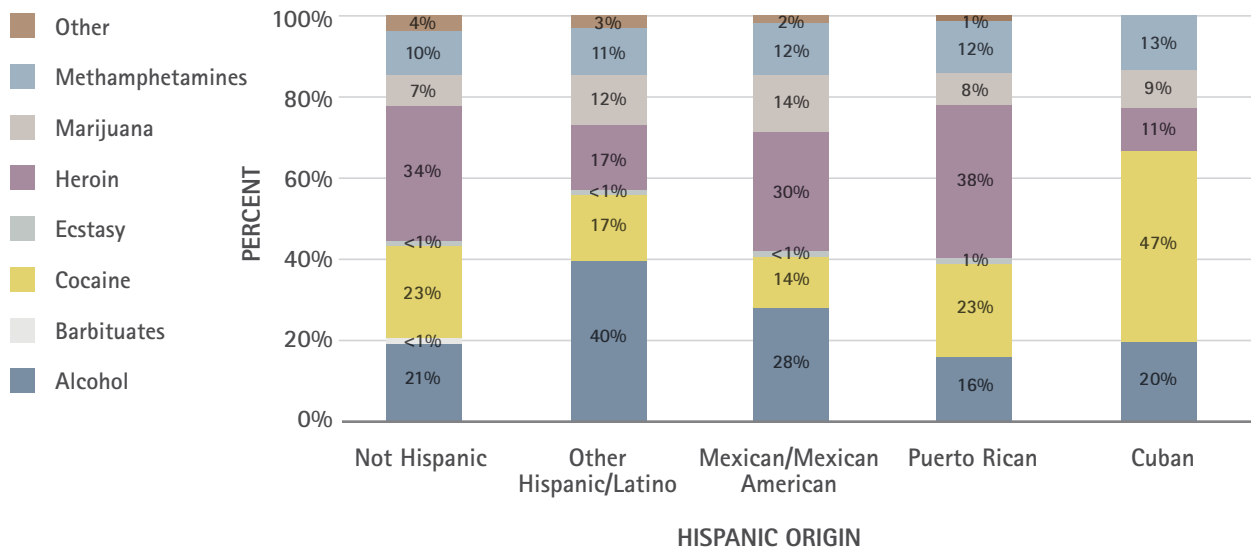
Note: Includes only Community Behavioral Health Services clients receiving the following services: outpatient, residential/residential detox, outpatient methamphetamineadone detox, outpatient methamphetamineadone maintenance, and day treatment.

Note: Cocaine also includes crack.

Note: Pacific Islanders are included in Asian or other category based on the discretion of the interviewer.

Source: Community Behavioral Health Services, SFPDH, special data request, December 2008.

**EXHIBIT 16 Primary Drug Use Issue Upon Admission to SFPDH Substance Use Treatment by Hispanic Origin, July 2007–June 2008**



Note: Includes only Community Behavioral Health Services clients receiving the following services: outpatient, residential/residential detox, outpatient methamphetamineadone detox, outpatient methamphetamineadone maintenance, and day treatment.

Note: Cocaine also includes crack.

Note: Pacific Islanders are included in Asian or other category based on the discretion of the interviewer.

Source: Community Behavioral Health Services, SFPDH, special data request, February 2008.

## MENTAL HEALTH

### Why Is Mental Health An Important Cofactor?

Mental health stressors may be episodic or chronic conditions and include anxiety, depression, schizophrenia, and bipolar disorder. Stresses on mental health functioning influence thought and decision-making processes, can hinder physical functioning, and can increase risk for HIV infection. Making decisions to engage in high-risk sexual or drug use behaviors may be made on an unconscious level for people who experience low-self esteem, anxiety, depression, sexual abuse, or post-traumatic stress disorder. Studies have documented links between mental health issues and increased rates of high-risk sex or HIV positivity rates among gay and bisexual men (Stall et al 2002, Wolitski et al 2004). Therefore, it is often important to address mental health issues in the context of HIV prevention.

Overall, HIV risk may be elevated among individuals with certain psychological disorders (e.g., poor impulse control), the chronically mentally ill, those with a history of childhood sexual abuse, and other conditions. In San Francisco, mental health issues affect people from all racial/ethnic backgrounds and socioeconomic status. People with few financial and social resources, however, might experience more serious consequences from having a mental health issue, including homelessness and poverty, which are also linked to HIV risk.

### Mental Health Issues That Affect HIV Risk

#### Depression, isolation, loneliness, and low self-esteem.

Depression and low self-esteem have been shown to be associated with high-risk behavior among several groups, including substance users and those who experience poverty, homelessness, discrimination, marginalization, and grief or loss. Because individuals from disenfranchised communities, such as IDUs, gay/bisexual/transpeople, homeless persons, and racial/ethnic minority communities experience many of these circumstances, they might be more likely to have depression or low self-esteem. The link between depression, low self-esteem, and HIV risk has been particularly well-documented among trans populations and MSM (Paul et al 2002). Isolation and loneliness can also affect a person's sexual decision-making. For example, MSM might fear sexual rejection if they disclose their HIV status to a potential partner, and so they choose non-disclosure (Sheon & Crosby 2004). Finally, experiencing discrimination or stigma due to sexual orientation or HIV status can have detrimental effects on mental health and has been shown to be linked to HIV risk behaviors (Courtenay-Quirk et al 2006).

Two analyses concluded that the preponderance of studies does not show an association between depression or negative affect and high-risk behavior (Crepaz & Marks 2001, Koblin et al 2006). Regardless, HIV risk behaviors, substance use, and depression might be "syndemic" – in other words, occurring simultaneously and having synergistic effects with respect to the likelihood of HIV seroconversion (Raymond 2009).

**Social support.** Social support and social networks might affect a person's health-related and risk-taking behavior, either positively or negatively. In terms of social support's effect on HIV risk, it is tentatively suggested that the issue is less social support per se and more the norms of the support network. Those support networks that emphasize healthy behaviors are more likely to help people reduce their risk for HIV.

**History of childhood sexual abuse.** A history of childhood sexual abuse is associated with living with HIV and with greater HIV risk behavior later in life. The ways in which such abuse may be linked to increased risk of acquiring HIV are: (1) transmission may occur during the unwanted sexual act; (2) a history of sexual abuse may be related to subsequent HIV risk behaviors or cofactors, such as substance use, injection drug use, needle sharing, commercial sex work, unprotected sex, multiple sex partners, and mental health issues; and (3) a history of sexual abuse may impede a person's ability to respond to HIV prevention education and engage in HIV preventive behaviors. Several studies have documented links between childhood sexual abuse and higher levels of substance use or HIV risk behavior among MSM, women, and non-MSM (Relf et al 2004, O'Leary et al 2003, Saylor & Daliparthi 2005, Stall et al 2001). Urban MSM may be more frequently affected than other groups (Greenwood et al 2002).



**History of abusive relationships.** A history of childhood sexual abuse, described in the previous section, may predispose involvement in adult abusive relationships (either physically or sexually abusive), and these abusive relationships themselves also might affect HIV risk behavior. The ways in which having a history of abusive relationships may be linked to increased risk of acquiring HIV are: (1) transmission may occur during abusive sexual acts; and (2) a history of abusive relationships may be related to subsequent HIV risk behaviors or cofactors, such as homelessness among women, inability to negotiate condom use or safer sex, and learned helplessness. This issue is particularly salient for women (Saylor & Daliparthi 2005).

**History of rape.** Rape is any sexual assault or forced sexual encounter regardless of the type of contact or relationship to perpetrator. HIV transmission may occur during the rape. It is more likely that the rape survivor might experience post-traumatic stress, depression, and feelings of powerlessness, which can all contribute to a decreased sense of self-efficacy, which in turn could affect the survivor's ability to engage in HIV self-protective measures after the assault. For example, women who have experienced rape are more likely to have exchanged sex for money or drugs, have had a greater number of sex partners, and have had more unprotected sex (Parillo et al 2001). While anyone may be a potential target for rape, women, homeless women, commercial sex workers, substance users (especially crack), incarcerated men, and men appearing vulnerable are more likely to be targeted.

## Who Is Affected by Mental Health Issues in San Francisco?

Mental health issues affect people of all racial/ethnic backgrounds and socioeconomic statuses. Comprehensive data on the prevalence of specific mental health issues among various San Francisco populations does not exist. It is estimated that approximately 13% of San Francisco adults sought mental health care in 2005 (<http://www.healthmattersinsf.org>). In fiscal year 2007/2008, there were 7,257 emergency psychiatric visits within the SFPDPH (SFPDPH 2008b).

The best general data source available on mental health includes demographics of those in treatment with county service providers, although this data is not necessarily reflective of the true distribution of mental health issues because different populations have different levels of access to treatment and some may be in private treatment. Nevertheless, this data offers a tentative picture of who is affected by mental health issues in San Francisco.

Exhibit 17 shows the distribution of those in publicly funded treatment facilities (inpatient and outpatient) by race/ethnicity. African Americans are disproportionately represented among those in treatment compared with the population size in San Francisco. In addition, men represent a greater percentage of those in treatment compared with women (53% vs. 47% for adults, 63% vs. 37% for youth; SFPDPH 2008b).

### EXHIBIT 17 Number of Individuals Receiving Mental Health Services Through SFPDPH, By Race, July 2007 – June 2008

RACE/ETHNICITY	NUMBER	PERCENT*
African American	5,881	24%
Asian	4,620	19%
Native Hawaiian or Other Pacific Islander	238	1%
Latino	3,807	16%
Native American	246	1%
White	8,688	36%
Multiracial/Other	378	2%
Unknown	457	2%
<b>TOTAL</b>	<b>24,315</b>	<b>100%</b>

Source: Community Behavioral Health Services, SFPDPH, special data request, December 2008.

\*Percent does not total 100 due to rounding.

## Why Are STIs An Important Cofactor?

One STI – gonorrhea – has been identified as a driver of HIV in San Francisco (see p. 121). This section discusses how STIs in general are a cofactor for HIV infection, as well as the specific STIs that do not meet the HPPC's criteria for drivers, but are still believed to be cofactors.

The presence of an STI other than HIV is an indicator of risk for HIV infection because STIs and HIV are transmitted in the same way (via sex). Perhaps more importantly, certain STIs, especially ulcerative STIs such as syphilis or herpes, may increase a person's biological risk for acquiring or transmitting HIV for a number of reasons, including that ulcers may serve as a point of exit or entry for HIV.

STI screening and treatment also offer key opportunities for HIV prevention because those at risk for STIs are also at risk for HIV. Overall, greater integration of HIV and STI detection and treatment services is needed. When delivering HIV prevention interventions, STIs should also be discussed and appropriate tests offered and provided, and vice versa.

## STIs That Can Indicate or Affect HIV Risk

**Gonorrhea.** Gonorrhea is the only STI that is considered a driver for HIV infection in San Francisco. It is described in detail in Section II: Drivers, under STIs (p. 121). The following paragraphs discuss other STIs that might indicate or affect risk for HIV, but are not believed to be responsible for a substantial portion of new HIV infections in San Francisco.

**Chlamydia.** Chlamydia is a bacterial STI. It can be transmitted through vaginal, anal, or oral sex. It often goes undiagnosed because many people have no symptoms. Chlamydia can cause inflammation of the mucosal tissue of the genital tract (Royce et al 1997), which may increase biological susceptibility for acquiring HIV infection. Chlamydia can also increase shedding of the HIV virus in people living with HIV which could increase the likelihood of transmission (Johnson & Lewis 2008). It is treatable with antibiotics.

Studies show that chlamydia is prevalent among MSM populations, and some associations have been found between chlamydia and HIV incidence, although the evidence does not rise to the level of a driver:

- 10.2% of gay/bisexual men attending San Francisco's City STD Clinic or a community-based gay men's health center had rectal, urethral, and/or pharyngeal chlamydia (Kent et al 2005).
- Among MSM seeking HIV testing at San Francisco's City STD Clinic, those with a recent HIV infection were 3.7 times more likely to be infected with chlamydia (King et al 2003).
- MSM with newly diagnosed HIV infection were more likely than HIV-negative men to be co-infected with chlamydia (18.5% vs. 7.8%; Scott et al 2008).

**Syphilis.** Syphilis is a bacterial STI, of which the first symptom is usually a painless sore where the infection entered, called a chancre. The presence of a chancre may increase the biological risk for HIV transmission; syphilis lesions are associated with an increased risk of HIV transmission by two to five times (Renzi et al 2003). If left untreated, syphilis can result in blindness, paralysis, insanity, and death in its later stages, which usually occur decades after infection. Syphilis can be cured with antibiotics. Beginning in 2001-2002, San Francisco saw a resurgence of early syphilis among MSM, which then declined (SFDPH 2007) only to resurge again beginning in 2008.

**Hepatitis B.** Hepatitis B is a viral infection transmitted primarily through sex, but also through sharing of injection equipment or other blood-to-blood contact. Symptoms can include fever, nausea, fatigue, abdominal pain, and jaundice. Most people recover completely within six months, but 5% to 10% of people develop chronic hepatitis B, which can lead to liver disease later in life. A highly effective vaccine is available, and safer sex and injection practices can also contribute to prevention (SFDPH 2008a). All persons at risk for HIV should be vaccinated for hepatitis B.

**Hepatitis C.** Hepatitis C is a viral infection transmitted primarily through blood-to-blood contact, such as during sharing of injection equipment, although there is growing evidence that some hepatitis C is transmitted through sexually associated activity, especially among HIV-positive MSM (see [http://www.natap.org/2009/CROI/croi\\_62.htm](http://www.natap.org/2009/CROI/croi_62.htm) for several studies on this topic). Hepatitis C is highly prevalent among IDUs, as is coinfection with HIV and hepatitis C. Hepatitis C can have similar symptoms as hepatitis B, but often it is asymptomatic. Some people recover from hepatitis C within six months, but 80-85% become chronic carriers, meaning they are still infectious but may or may not feel sick. Chronic hepatitis C can lead to liver disease later in life. There is no vaccine; behavioral prevention measures, including safer injection practices, safer sex practices, and reduction of blood exposure during sexually associated activity are recommended for prevention (SFDPH 2008a).

**Herpes.** Herpes is a treatable (but not curable) viral STI. Ulcers caused by herpes are very infectious and may increase HIV transmission risk. Herpes can also be passed on even when sores are not present. Having herpes was associated with 1.8 times increased risk for HIV among MSM in one study (Renzi et al 2003). Genital herpes rates may also be high in certain subpopulations. For example, 76% of heterosexual women who used methamphetamine in one San Francisco-based study screened positive for herpes (Lorvick et al 2008). Recent research demonstrates that herpes suppression treatment does not reduce the risk of HIV (Celum et al 2008).

**Genital warts.** Genital warts are a viral STI caused by the human papilloma virus (HPV). Not all people with HPV develop visible warts. HPV and warts are spread through skin-to-skin contact. In one study, MSM with HPV had more than a threefold increased risk of becoming HIV-positive during the course of the study (Chin-Hong et al 2005).

**Trichomoniasis.** This STI is often referred to as “trich” and is caused by a parasite. In men, it is usually found in the urethra and in women it is usually found in the vagina. Having no symptoms is common, especially for men. It can be cured with medication. Trich can cause inflammation of the genital tract in women, which might make them more susceptible to HIV infection. In one study conducted in Kenya, women with trich were 1.5 times more likely to seroconvert to HIV during the study period (McClelland et al 2007). Trich is of concern for some subpopulations in San Francisco. For example, heterosexual methamphetamine-using women had a 23% prevalence of trich in one study (Lorvick et al 2008).

## Who Is Affected by STIs in San Francisco?

All populations are at risk for STIs in San Francisco, but different groups are more profoundly affected depending on the STI.

**Gonorrhea.** Data and a detailed discussion of gonorrhea in San Francisco populations are presented in the Section II: Drivers, p. 121.

**Chlamydia.** Increased risk for chlamydia in San Francisco is found primarily in two populations, MSM and adolescents aged 14 to 20 years. Among MSM, the chlamydia rate overall in 2007 was estimated at 1,406.9 per 100,000 compared with 253.4 per 100,000 among other males. Rates by race/ethnicity are provided in Exhibit 18. Over half of the chlamydia cases reported among MSM were among Whites (61%), with 21% among Latinos, 10% among APIs, and 8% among African Americans. These trends were stable between 2003 and 2007. The median age of MSM diagnosed with chlamydia in 2007 was 37 years old. Forty-three percent of MSM with known HIV status who were diagnosed with chlamydia in 2007 were HIV-positive (SFDPH STD Prevention and Control, special data request, January 2009).

In 2007, chlamydia rates among adolescents were over four times higher than the rates among adults over 21 years. Females and African Americans are extremely disproportionately affected, especially those living in West Hunter’s Point and Sunnydale (SFDPH STD Prevention and Control, special data request, January 2009). Among non-MSM youth, substantial new HIV infections have not materialized even with such high STI rates, possibly because HIV prevalence

in youth sexual networks is very low. (For more on HIV among youth, see the section on Youth, p. 106.)

### EXHIBIT 18 Chlamydia Rates per 100,000 Population by Race and Gender/Risk, San Francisco, July 2007 to June 2008

	AFRICAN AMERICAN	ASIAN AND PACIFIC ISLANDER	LATINO	NATIVE AMERICAN*	WHITE	OVERALL
MSM	1,123.6	766.8	1,609.9	6	1,705.0	1,406.9
Other Males	1,348.4	118.3	301.8	5	225.7	253.4
Female	1,695.4	242.2	540.2	9	142.6	492.0

Source: SFDPH STD Prevention and Control, special data request, January 2009.

Note: STI rates for transpersons cannot be included due to lack of data on population size and inconsistent reporting of trans identity. Less than 5 cases of chlamydia were reported among transg people during this time period.

\*Case counts are presented for Native Americans instead of rates due to small sample size. Native Americans may be undercounted due to misclassification.

**Syphilis.** Exhibit 19 shows the syphilis rates by gender/risk. By far, the vast majority of syphilis cases are among MSM, although African American non-MSM males are disproportionately affected. Among MSM, Whites, African Americans, and Latinos experienced the greatest rates of syphilis.

### EXHIBIT 19 Early Syphilis Rates per 100,000 Population, July 2007 to June 2008

	AFRICAN AMERICAN	ASIAN AND PACIFIC ISLANDER	LATINO	NATIVE AMERICAN**	WHITE	OVERALL
MSM	651.7	285.1	508.9	4	726.7	557.5
Other men	31.4	1.0*	10.6	0	10.2	6.3
Female	16.4	0	1.9*	1	0	1.8

Source: SFDPH STD Prevention and Control, special data request, January 2009.

Note: STI rates for transpersons cannot be included due to lack of data on population size and inconsistent reporting of trans identity. Five cases of early syphilis were reported among transpersons during this time period.

\*Rates based on fewer than five cases.

\*\*Case counts are presented for Native Americans instead of rates due to small sample size.

**Hepatitis B and C.** Prevalence data for chronic hepatitis B and C in San Francisco is not available. National estimates from the Centers for Disease Control and Prevention can be found at <http://www.cdc.gov/hepatitis/Statistics.htm>. The SFDPH does receive reports from laboratories on markers for hepatitis C infection and hepatitis B infection that could potentially represent chronic infection, but they do not represent incidence or prevalence. In 2007, the SFDPH received reports of markers of hepatitis B infection on over 3,400 persons and reports of markers of hepatitis C infection on over 3,200 persons (SFDPH Communicable Disease Control Unit, special data request, March 2009). There are likely many others who have chronic viral hepatitis but are not in care, or who were diagnosed years ago and have not gotten tested recently.

In the U.S., Asian Americans tend to be infected with hepatitis B at a much higher rate compared with other groups, and this is also true in San Francisco (<http://www.sfhepbfree.org/about.php?nv=2#hbv%20api>). With both hepatitis B and C, IDUs are severely impacted. In a San Francisco study that included over 2,000 IDUs, the prevalence of hepatitis B antibodies was 81%, and the prevalence of hepatitis C antibodies was 91% (Tseng et al 2007).

**PLWA.** STI diagnoses among PLWA are presented in Exhibit 20. This data is important because the presence of an STI indicates the person engaged in unprotected sex. The implications, however, depend on the HIV status of the partner(s). For example, it has been hypothesized that increases in syphilis rates do not necessarily correspond to increases in new HIV infections, because most unprotected sex and syphilis transmission is happening between partners who are both HIV-positive (Truong et al 2006). (See the section on People living with HIV for more on seroadaptation, p. 63.)

## EXHIBIT 20 STI Diagnoses Among People Living with AIDS, 2000–2006

YEAR OF STI DIAGNOSIS	NUMBER OF PLWA WITH NEW STI DIAGNOSIS
2006	345
2005	339
2004	327
2003	307
2002	285
2001	185
2000	180

Source: SFDPH HIV Epidemiology Section, special data request, December 2008.

Limitations: The STI data linkage with PLWA is performed once a year, only for new STI diagnoses that year. Previous years' numbers are not updated during the annual linkage.

## Why Is Incarceration An Important Cofactor?

### INCARCERATION

Individuals who are incarcerated tend to be affected by many other cofactors in their lives outside of jail or prison that affect their risk for HIV. Individuals at risk for incarceration include substance users, people with mental health issues, homeless persons, people living in poverty, and people who trade sex for money or drugs. This might partly explain why HIV prevalence is higher among inmates than the general population. Recent HIV prevalence data for inmates is not available, but there is data on the number of PLWHA who have a history of being incarcerated in the San Francisco jail system. Approximately 9% of PLWHA have such a history, and of these 1,292 individuals, nearly three quarters are IDUs and 16% are MSM non-IDUs (Exhibit 21).

## EXHIBIT 21 Number of Persons Living with HIV/AIDS by BRP with History of Incarceration in County Jail, San Francisco, 2001–2006\*

BRP	2001	2002	2003	2004	2005	2006	PERCENT AS OF 2006
MSM	122	138	162	176	192	201	16%
IDU	735	791	847	899	918	936	72%
TFSM	81	97	101	100	105	107	8%
FSM	19	19	20	19	18	18	1%
MSF	15	17	21	22	31	30	2%
TOTAL	972	1,062	1,151	1,216	1,264	1,292	100%

\*Persons living with HIV/AIDS at the end of each year.

Source: SFDPH HIV Epidemiology Section, special data request, December 2008.

In San Francisco, there is much conversation but little data to indicate whether HIV transmission during incarceration is a substantial issue, or whether the primary risk occurs outside of jail or prison as a result of HIV cofactors that also put people at risk for incarceration. Although HIV prevalence among inmates is relatively high, very few new HIV infections are identified among inmates in the San Francisco jails during their period of incarceration, suggesting that most HIV transmission and acquisition occurs outside of the jail setting. It is important to note that jails might be different than prisons in terms of risk during incarceration. In prison, stays are longer, which might result in more situational male-male sex. Because the drivers and cofactors that affect incarcerated people in their lives prior to incarceration are discussed elsewhere in this chapter, the remainder of this section focuses on risks while incarcerated and post-release.

During incarceration, the two primary HIV risks are unprotected sexual activity among inmates and sharing of needles to inject drugs. Regarding sexual behavior, the restriction of sexual activity to other inmates and the lack of availability of condoms can contribute to situational unprotected sex between men, although the men may not identify as gay or bisexual. Sex can be consensual, exchange sex (e.g. for food), or forced sex/rape (MMWR 2006b). San Francisco has been a leader in providing access to condoms at correctional facilities; an evaluation of a project that placed a condom dispensing machine in a county jail gym facility found that it's feasible and prisoners do take and use the condoms (Reznick et al 2008). However, despite the fact that condom distribution is permitted in San Francisco jails (only one of six jails in the country that permits this), an open condom package and used condoms are considered contraband. Further, having sex in jail is a felony under state law. Regarding needle sharing, prison policies restrict access to clean syringes, making it difficult for prisoners who inject drugs to use clean needles consistently. Needle-sharing risks apply to tattoo needles as well as needles used to inject drugs.

The post-release period can be a tumultuous time during which instability related to housing, employment, medication adherence for people living with HIV and other issues can lead to increased risk. This period is a particularly vulnerable time for people living with HIV. Recidivism is common among this group (Marlow et al 2008), as is injection drug use (White et al 2008). The HOPE Study, conducted with inmates living with HIV in the San Francisco jail system, found that interventions provided during incarceration decreased risk behaviors, but that after a short period of maintenance post-release, sex- and drug-related risk behaviors increased and medication adherence showed a corresponding decline (Clements-Nolle et al 2005 – for more on this study, see the box on p. 137). Other studies have also documented post-release sexual risk behaviors among this group (White et al 2008). Discharge planning can help to ease the transition in some ways; discharge planning for inmates living with HIV has been shown to improve the chances that the individuals will have access to a regular source of care in the community after release (Wang et al 2008).

Although incarcerative settings might pose some risk for HIV transmission, they definitely allow for critical opportunities to reach people living with or at risk for HIV because of the high HIV prevalence; however, it can be challenging to conduct HIV prevention in these settings. HIV prevention providers must deal with the effects of correctional facility policies regarding the availability of condoms and clean syringes. In addition, providers might face barriers while implementing individual and group education programs during and after incarceration (e.g., limited inmate movement, lack of buy-in among facility staff, inability to obtain access to inmates due to lock downs or other factors, stigmatization of sex with men in an all-male environment), even though these are critical HIV prevention strategies. For many incarcerated women, personal histories include partner violence, economic vulnerability, and discrimination, and jail-based HIV prevention may represent an opportunity to address the more global needs of disenfranchised women while providing them with tools to prevent HIV (Fields et al 2008). The HPPC recognizes that the administrative costs of conducting HIV prevention programs in correctional settings may be higher than for prevention in other settings due to these types of challenges. It is very critical that service providers working with incarcerated populations ensure that they can link people to appropriate services, both with the jail setting and upon release, and that services be coordinated to ensure the best possible outcomes.

## Who Is Incarcerated in San Francisco?

Men and people of color are over-represented among the incarcerated population (Exhibit 22). African Americans in particular are incarcerated at high rates, which indicates a need to consider this cofactor in prevention programs designed for African Americans. Anecdotally, as of 2009, an increasing number of recent immigrants who are Spanish-speaking are being incarcerated.

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### EXHIBIT 22 Incarceration in San Francisco

	SAN FRANCISCO COUNTY JAILS*		JUVENILE PROBATION**	
	NUMBER	PERCENT	NUMBER	PERCENT
African American	1,247	58	564	58
Asian and Pacific Islander	87	4	93	10
Latino	329	15	254	26
Native American	NA	NA	1	0.1
White	397	18	48	5
Other/Unknown	97	5	11	1
TOTAL	2,157	100%	971	100%

NA = Data not available.

\*Source: San Francisco Sheriff's Department, special data request, January 2009. Reflects jail population on April 6, 2008.

\*\*Unduplicated count of juvenile hall bookings, 2007. Source: [http://www.sfgov.org/site/uploadedfiles/juvprobation/Documents/2007AnnualReport\\_Statistics.pdf](http://www.sfgov.org/site/uploadedfiles/juvprobation/Documents/2007AnnualReport_Statistics.pdf)

### Baseline Findings from the Homebase Outcome Program Evaluation (HOPE) Study: An HPPC-Prioritized Study

(Clements-Nolle et al 2005)

The HOPE Study was prioritized by the HPPC and was subsequently funded by the Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration (HRSA), the California State Office of AIDS, and the City and County of San Francisco. The purpose of the study was to evaluate the effect of an enhanced discharge planning and case management program for inmates living with HIV in the San Francisco County jail system. A total of 261 inmates were enrolled in the study.

Baseline interviews with participants regarding their life circumstances in the month prior to incarceration revealed that this population has multiple complex needs. Over two-thirds (69%) were unstably housed. Nearly half (49%) did not have any form of health insurance prior to incarceration, and less than one-third were taking highly active anti-retroviral therapy (HAART). Of those who were, 50% had missed doses. Substance use was extremely high among this group, particularly crack (65%), marijuana (62%), and speed (31%), and 50% reported injecting drugs.

In addition to these HIV cofactors, inmates reported high levels of behaviors that could transmit HIV. Of those who injected drugs, 19% reported distributive syringe sharing (i.e., a person using a needle then allowing another person to use it). Of females reporting sex with males, 50% reported unprotected sex with an HIV-negative or unknown status partner. Of males reporting sex with females, 27% reported sex with an HIV-negative or unknown serostatus partner. Among MSM, 22% reported unprotected insertive and 20% reported unprotected receptive anal sex with an HIV-negative or unknown serostatus partner.

Despite these significant health, social service, and HIV prevention needs, only 35% of participants saw a community case manager in the month prior to incarceration.

At the time of this writing, a preliminary analysis of the post-intervention data has been completed. The data shows that interventions provided during incarceration decreased risk behaviors, but that after a short period of maintenance post-release, sex- and drug-related risk behaviors increased and medication adherence showed a corresponding decline. These findings suggest a need for ongoing case management of this population before, during, and after incarceration.

## HOMELESSNESS

## Why Is Homelessness An Important Cofactor?

Homeless individuals may experience similar yet more dire situations compared to those living in poverty since they are living in a more extreme form of poverty. Homeless people often experience multiple cofactors that can intensify their risk for HIV infection. Impaired mental health status, higher rates of substance use, dual diagnosis with mental health and substance use issues, exposure to physical and sexual violence, survival sex, repeated contacts with the criminal justice system, and lack of access to prevention messages and services are some of the relevant risk factors for this population.

HIV prevalence among homeless persons in San Francisco is higher than that for the general population (Exhibit 23), although this appears to be due largely to the high numbers of MSM and IDUs who are homeless, as well as the survival behaviors that stem from poverty (e.g., sex and drug trade), rather than the homelessness per se (Hahn et al 2004). As such, programs designed to serve homeless people might be a way to reach people who are living with or at risk for HIV due to risk behaviors and multiple cofactors. Providers also need to consider the special needs of homeless individuals, such as the need for late night services.

## EXHIBIT 23

### Summary of HIV Prevalence Studies Among Homeless Individuals in San Francisco

SAN FRANCISCO POPULATION	PREVALENCE	SOURCE
<b>HOMELESS YOUTH</b>		
Homeless MSM and MSM/F under 30	11%	Robertson et al 2004
Young homeless gay and bisexual males	29%	Robertson et al 2004
<b>HOMELESS ADULTS</b>		
Homeless adults	14%	Riley et al 2005
Homeless adults	11%	Robertson et al 2004
Homeless MSM	30%	Robertson et al 2004
Homeless IDUs (non-MSM)	8%	Robertson et al 2004
Homeless non-MSM non-IDUs	5%	Robertson et al 2004

In San Francisco between 2004 and 2008, between 8% and 12% of all AIDS diagnoses were among homeless individuals (SFPDPH 2008e). Compared with the general population of PLWHA, people who were homeless at the time of their HIV/AIDS diagnoses were more likely to be female, African American, IDUs, and younger (SFPDPH 2008e). Despite the disproportionate effects of homelessness on women and youth living with HIV, most homeless PLWHA are MSM or IDU and age 30 or older. Homeless people living with HIV are an important population to reach for two reasons: (1) adherence to anti-retroviral medications can be challenging for this group; and (2) there are interventions that show promise for reducing HIV risk behaviors for homeless people living with HIV. These interventions include one study which found that food insecurity was strongly associated with non-adherence to treatment, and half of homeless adults living with HIV in San Francisco experience food insecurity, suggesting that a simple intervention that ensures access to food might help improve adherence and reduce transmission (Weiser et al 2009). Another study found that homeless adults receiving cash benefits were less likely to have income from selling drugs or trading sex and less likely to inject drugs, which raises the question about whether cash assistance might reduce HIV risk among this group (Riley et al 2005).

Providers serving the homeless can incorporate HIV prevention into their programs, or other providers can address the needs of their homeless clients through linkages with programs that provide housing, food, clothing, a place to shower, and other services for homeless individuals. Policy interventions designed to reduce homelessness and its health impacts are also needed. Delivering HIV prevention services to homeless persons can be especially challenging because establishing trust and consistent contact are hindered by constant moving around (CAPS 2005). Therefore, HIV prevention programs must include components designed to keep homeless persons connected to the service system and focus on the homeless populations at highest risk for HIV.



## Who Is Affected by Homelessness in San Francisco?

San Francisco conducts a count of the homeless population every two years. Included in this count are both unsheltered and sheltered homeless people living or staying in emergency shelters, transitional housing, mental health facilities, treatment centers, County jail, and city hospitals. According to the 2007 homeless count, there are 6,377 homeless individuals living in San Francisco, representing a 26% decline since 2002 (Exhibit 24; Homeless Count Report 2007). The number of unsheltered homeless has also declined, with 38% fewer homeless people in 2007 compared with 2002. Unsheltered homeless people are disproportionately male and African American.

### EXHIBIT 24 Homeless Individuals in San Francisco, January 2007

PLACE LIVING CURRENTLY	TOTAL	
	NUMBER	PERCENT*
Unsheltered (on the street)	2,771	44%
Shelters	1,497	24%
Transitional housing and treatment centers	1,266	20%
Resource centers and stabilization	321	5%
Jail	400	6%
Hospitals	122	2%
<b>TOTAL</b>	<b>6,377</b>	<b>100%</b>

Source: 2007 Homeless Count Report, [http://www.sfgov.org/site/uploadedfiles/lhcb/homeless\\_count/SanFrancisco2007HomelessCount%20final.pdf](http://www.sfgov.org/site/uploadedfiles/lhcb/homeless_count/SanFrancisco2007HomelessCount%20final.pdf)

\*Percent does not total 100 due to rounding.

## IMMIGRATION AND LANGUAGE

### Why Are Immigration and Language Important Cofactors?

Immigration is a cofactor for HIV risk. The HPPC believes that economic instability and poverty, lack of access to health care and social services, lack of information, isolation, and language barriers all have the potential to make immigrants particularly vulnerable to HIV. Also, because of a legitimate fear of deportation, undocumented immigrants may delay treatment when sick or may not access HIV testing or health care at all, as HIV prevention providers' experience has shown. One study among API immigrants in New York found that undocumented individuals had a lower rate of receipt of primary care services and more barriers to access (Chin et al 2006). Further, because data on language is not routinely collected in many datasets, it is difficult to say how language affects HIV risk, and therefore challenging to design appropriate HIV prevention programs.

Low levels of HIV/AIDS knowledge have been documented among some immigrant groups, such as day laborers (Kral et al 2006). These low levels of knowledge may be attributed to lack of access to HIV information and prevention messages that are linguistically and culturally appropriate. In addition to Spanish, researchers and health care providers note a growing need for translators and services for immigrants who speak indigenous Asian and Central American languages (Snyder et al 2000).

Despite the theoretical links that have been drawn between immigration and HIV risk, the research is mixed on whether and how immigration and acculturation affect HIV risk, and it may be different depending on the specific group (e.g., Latinos vs. Asians, gay men vs. other men). The degree of HIV risk depends on a number of factors: (1) how their sexual and drug behaviors change after moving to the U.S.; (2) their access to appropriate health services, HIV education, and condoms; (3) social norms about safe sex and drug practices in their communities; (4) the nature of their relationships with sex partners in the U.S. and their home country; (5) their experience with racism, discrimination, and poverty in the U.S.; and (6) their English

speaking abilities and educational levels, which can impact access to services (CAPS 2003b). For more on specific immigrant populations, see the sections on Latinos (p. 98) and APIs (p. 96).

California public policy and public sentiment in the last two decades generally has not been supportive of health promotion or equal rights for immigrants (see Morin et al 2004 for a complete discussion). For example, Proposition 187 (<http://www.igc.org/cfj/about187.html>) was passed by California voters in 1994 but not implemented due to questions of constitutionality. It barred undocumented immigrants from receiving public health, social, and educational services. Further, until 1990 homosexuals were not permitted to immigrate to the U.S. (Shoop 1993).

San Francisco, in contrast, is a “sanctuary city,” meaning that City officials (with a few exceptions) cannot assist federal immigration enforcement and cannot require disclosure of immigration status. Recent local events have heightened the focus on immigration issues locally, including a controversy about whether San Francisco’s status as a sanctuary city is in fact resulting in the shielding of immigrant felons, the recent implementation of Healthy San Francisco which allows people to access health services regardless of immigration status, and the issuing of municipal ID cards to undocumented immigrants. Even if San Francisco policies are generally immigrant-friendly, people might perceive a threat of deportation or other consequence as a result of accessing services, which could create a barrier to receiving HIV testing, prevention, and health care.

## Who Are San Francisco’s Immigrants and What Languages Do They Speak?

San Francisco is home to a large immigrant population – over one-third of residents (35%) are foreign born (Exhibit 25), and 14% of that group are non-citizens. Estimates of the number of undocumented individuals living in San Francisco are outdated and therefore not reliable.

The city is a primary destination for immigrants from Asia and Latin America. Nearly two-thirds (60%) of San Francisco’s immigrants were born in Asia, and an additional 20% are from Central or South America (see Chapter 1: Epidemiologic Profile for detailed data, p. 20). As such, most individuals who speak another language speak an Asian language or Spanish. Among San Francisco immigrants, the majority (61%) speak English less than very well (Exhibit 26).

### EXHIBIT 25 San Francisco Residents by Country of Birth, 2008

PLACE OF BIRTH	NUMBER	PERCENT
United States	525,683	65%
<b>TOTAL Foreign Born</b>	<b>283,293</b>	<b>35%</b>
<i>Foreign born, Naturalized Citizen</i>	<i>173,671</i>	<i>21%</i>
<i>Foreign born, Non-Citizen</i>	<i>109,622</i>	<i>14%</i>
<b>TOTAL San Francisco Population</b>	<b>808,976</b>	<b>100%</b>

Source: American Community Survey 1- year estimates, U.S. Census Bureau, 2008.

Note: Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

## English Speaking Ability Among San Francisco Immigrants Age 5 and Older, 2008

	NUMBER	PERCENT
Monolingual non-English*	172,165	61%
Bilingual English and other language	76,755	27%
Monolingual English	33,285	12%
TOTAL	282,205	100%

\*Speaks English "less than very well."

Source: American Community Survey 1-year estimates, U.S. Census Bureau, 2008.

Note: Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

### Why Are Exchange Sex and Sex Work Important Cofactors?

#### EXCHANGE SEX AND SEX WORK

Exchange sex is a broad term that is defined as the exchange of sex for money, drugs, food, a place to stay, or any other perceived benefit. Sex is usually traded in two different types of situations. The first situation is in the context of commercial sex work (CSW), where the individual identifies as someone who trades sex as their profession or means of making a living. Commercial sex workers may be street-based or off-street (i.e., based out of a home, apartment, hotel, massage parlor, or some other dwelling). The second situation is survival sex, where the individual might not identify as a sex worker but sometimes trades sex based on their needs at the time. The needs of these two populations and how they can be reached might be different. Other cofactors and drivers associated with CSW and survival sex include homelessness (see p. 138), poverty (see p. 142), substance use (see p. 126), multiple partners (see p. 123), childhood sexual abuse (see p. 130), low self-esteem (see p. 130), and mental health issues (see p. 130).

There are many ways in which CSW can theoretically increase HIV risk; however, if sex workers are at elevated risk for HIV infection, it might have as much or more to do with the other cofactors they experience than the actual sex work itself. Research shows that in San Francisco, for female sex workers, safer sex practices during exchange sex are higher and STI/HIV infection rates are believed to be lower than in other locales (see below for studies).

It appears that most unprotected sex among female sex workers occurs with primary or non-exchange partners. For example, the local arm of the National HIV Behavioral Surveillance study with high-risk heterosexuals found that, overall, safer sex practices were higher during exchange encounters compared with non-exchange encounters (e.g., fewer episodes of unprotected vaginal/anal sex, fewer episodes of sex while high or drunk; Chen et al 2009a). Another study found that all 107 API women massage parlor workers interviewed reported 100% condom use for vaginal sex with their customers, although condom breakage and slippage were reported as issues, and only 17% reported they always used condoms with their non-exchange partners (Nemoto et al 2000).

Even when reported risks are higher, these risks do not necessarily translate into increased HIV infection rates. In a Northern California study in which female sex workers reported higher levels of cofactors known to increase risk, such as higher numbers of partners and high-risk partners, they were no more likely to have HIV, chlamydia, or gonorrhea than non-sex workers (Cohan et al 2005). Across studies, the main issue that appears to influence safer sex practices is economic pressure; if the sex worker is offered more money for sex without condoms, the immediate need for money can overshadow the importance of longer-term health consequences.

In addition, in California, it is legal for the police to use possession of condoms as evidence of illegal sex work. In San Francisco, anecdotally, this issue has created substantial anxiety among indoor establishments as well as street-based workers, who may be afraid to carry condoms, have them on the premises, or negotiate safer sex for fear of arrest and prosecution. As of early 2009, local community-based efforts were underway to try to change these laws.

There is less research conducted with MSM (including transmales who have sex with men)

and transfemale sex workers, but these groups might have different risks than female sex workers. For example, among street-recruited MSM-IDU in one study, 68% reported being paid by another man for sex, and having HIV was independently associated with a higher number of paying male partners (Bacon et al 2006). Transfemale sex workers are particularly vulnerable economically and socially, due to stigma, and the pressure to accept more money in exchange for unprotected sex can be intense. In addition, transfemales may experience greater risks for HIV infection than other groups because of the high prevalence of receptive anal sex (the highest risk behavior for acquiring HIV) with paying partners. A local qualitative needs assessment prioritized by the HPPC was conducted among MSM and transfemale sex workers in 2003. Interviews revealed that the most pressing needs for these populations included housing, health care for HIV-negative people, mental health support, job training and opportunities, and reduction of police harassment of transfemale sex workers (Harder+Company 2004b).

In summary, exchange sex must be addressed in at least two ways: (1) reaching commercial sex workers to provide them with information and services; and (2) addressing sex work as a cofactor among populations who engage in survival sex or who do not identify as sex workers. For both groups, linkages to other supportive services are critical, including housing, financial assistance, legal services, health care, and STI testing and treatment. HIV prevention with these populations should be nonjudgmental and should not coerce people into “getting off the streets.” The HPPC recommends a harm reduction client-centered approach, in which all options from continuing to exchange sex daily to stopping exchange sex altogether are available to clients depending on their individual circumstances.

A third approach is decriminalization of sex work, although opinions are mixed as to how such an intervention would impact HIV risk because it has not been tried or evaluated in San Francisco. A measure supporting decriminalization was on San Francisco’s November 2008 ballot, but it did not pass.

Regardless of the approach, services for sex workers must be culturally competent and take into account sex workers’ special needs, such as making services available at times of day that do not interfere with work hours. Involvement of sex workers in the planning and implementation of programs might also help to improve the acceptability of services among this priority population.

## Who Is Affected by Exchange Sex and Sex Work in San Francisco?

The experiences of community-based providers serving sex workers provides some insight into the demographics of this population. In overall numbers, the majority of sex workers are likely women, with men and trans people also involved. Most are estimated to be between 18 and 37 years old, although younger teenagers also engage in sex work. Transfemales have high rates of sex work in San Francisco – 80% have a history of sex work and/or survival sex in one study (Clements-Nolle et al 2001). Female Asian massage parlor workers and Latino male day laborers engaging in survival sex are two subpopulations of concern (see the sections on APIs, p. 96, and Latinos, p. 98).

## Why Are Income and Poverty Important Cofactors?

### INCOME AND POVERTY

Health and disease are not equally distributed in society. Low socioeconomic status is one of the most consistent determinants of poor health status (Robert et al 2009). Impoverished communities experience higher morbidity and mortality rates for most major chronic diseases and infections, including HIV infection. Lack of access to health services, social and physical environments unsupportive of healthy behavior, injection drug use and other substance use, commercial sex work, multiple sex partners, sex with partners who are high-risk, low perception of risk, and the prioritization of immediate needs such as maintaining food, housing, and income over issues such as HIV, are some factors associated with poverty that may contribute to increased HIV risk. The HPPC believes that these conditions provide a context for understanding why poor people are at increased risk for HIV infection. They should draw attention to the larger social and political responsibility of addressing the root causes of poverty.

In general, research has found associations between poverty and other behaviors/cofactors that are known to affect HIV risk, but not necessarily a direct link between poverty and HIV risk. For example, one study conducted among low-income female sex workers in Northern California revealed that this group had higher rates of risk behavior compared with non-sex workers but were no more likely to have HIV or STIs (Cohan et al 2005). In this study, risk behaviors were documented among a low-income group, but substantial HIV infection was not.

HIV prevention programs for low-income individuals can be housed in a variety of agencies – those that serve low-income individuals, those that are focused on HIV prevention, or other types of health care or social service agencies. Regardless, the HPPC believes that HIV prevention programs should have the capacity to address the needs of low-income individuals as the need arises. In essence, San Francisco's HIV prevention providers have learned that immediate survival needs must be addressed first in order for HIV prevention to be effective. This means linking individuals to services that can assist with housing, money, food, and clothing, as well as health care services, and addressing the root causes of poverty through advocacy and policy change. In some cases, the provision of such basic living assistance can in itself help reduce HIV risk, as was found with providing cash assistance to homeless people (Riley et al 2005).

## Who Is Affected by Poverty in San Francisco?

Between the 1990 and 2000 census, San Francisco underwent dramatic changes in income distribution among its residents, whereby the percentage of households making more than \$75,000 per year more than doubled. This trend of an increasing percentage of people in high income brackets continued between 2000 and 2008 (Exhibit 27). This shift is not likely an indication of San Franciscans moving up the economic ladder. Rather, it reflects the exodus of lower income individuals and families from San Francisco and an influx of higher income populations due to a steep rise in the cost of living, especially with regard to housing costs. At the time of this writing in 2009, the economy is on the verge of another dramatic shift, with unemployment rates and home foreclosures rising dramatically. It remains to be seen what the effects will be on San Francisco and how HIV and HIV prevention will be affected.

### EXHIBIT 27 Changes in Household Income, San Francisco, 2000–2008

INCOME LEVEL	PERCENT OF HOUSEHOLDS 2000 (N=329,850)*	PERCENT OF HOUSEHOLDS 2008 (N=321,947)**
<\$25,000	23%	21%
\$25,000–\$49,999	22%	15%
\$50,000–\$74,999	18%	14%
\$75,000 and over	37%	45%
TOTAL	100%	95%

\*Source: U.S. Census, U.S. Census Bureau, 2000.

\*\*Source: American Community Survey 1-year estimates, U.S. Census Bureau, 2008. Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

Based on the 2008 American Community Survey, about one-tenth (11%) of San Francisco residents live below the poverty level (see Chapter 1: Epidemiologic Profile for detailed data, p. 21). African Americans are severely affected, with over one-quarter (27%) living in poverty (Exhibit 28). Only a slightly higher percentage of women live in poverty compared with men (10.5% vs. 11.6%), but families headed by single mothers are disproportionately represented among those living in poverty (13%).

EXHIBIT 28 Percent Living in Poverty by Race/Ethnicity, San Francisco, 2008

RACE/ETHNICITY	PERCENT LIVING BELOW POVERTY (N=88,154)
<b>RACE</b>	
African American	27%
Asian and Pacific Islander	11%
Native American	NA*
White	9%
Multiracial	15%
Other	14%
<b>ETHNICITY</b>	
Latino (of any race above)	14%

\*Not available. Estimates not provided.

Source: American Community Survey 1- year estimates, U.S. Census Bureau, 2008.

Note: Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

**Why Is Access to Services An Important Cofactor?**

**ACCESS TO HEALTH AND SOCIAL SERVICES**

All people have a basic right to health and health care, but not everyone has the access to the resources needed to maintain optimal physical, emotional, and mental health. Access to services encompasses a wide range of concepts, including physical access to health care sites, access to services that are culturally and linguistically appropriate, access to health insurance that allows people to receive care that is paid for, and many other aspects.

Access to health and social services is important because people who are more connected to health-related resources and support are more likely to engage in health-promoting behaviors (e.g., safer sex). Access to services also allows people to obtain information and education that can help them learn how to protect themselves (e.g., harm reduction).

While there are many health services that all individuals should have access to, three of the most important are primary care, substance use treatment, and mental health services. Primary care for people living with HIV and those at risk provides a key opportunity for HIV prevention education and linking people with other services. Substance use and mental health services, especially when integrated, can address some of the key factors that lead to high-risk sex. In San Francisco, the substance use and mental health sections in the health department are now in one section called Community Behavioral Health Services (CBHS). CBHS has an integration policy that is designed to facilitate access for all individuals needing substance use and/or mental health services. It can be found at: <http://www.sfdph.org/dph/files/CBHSPolProcMnl/1.05-01-CBHSIntegration-02-2008.pdf>.

Despite San Francisco’s ideological commitment to access to services for the most vulnerable of San Francisco residents, unmet needs remain, and treatment on demand for substance use and mental health issues is not available for every individual who wants or needs it. Improved accessibility and availability of these services is critical for HIV prevention to have its greatest affect. Addressing barriers to access is an ongoing struggle that involves work at the structural and policy levels, particularly around access to primary care, substance abuse, and mental health services.

**Factors that Affect Access to Services**

**Lack of services.** If there are not enough substance use treatment slots or mental health beds, people suffer. Lack of services is a symptom of larger social policies that do not prioritize such services, possibly due to the stigma that society still attaches to people who experience problems with mental health or substance use.

**Lack of insurance.** Being uninsured or underinsured can prevent individuals from receiving needed services, especially primary care services, if they cannot afford to pay for care out of pocket. Further, lack of insurance can lead to inappropriate utilization of services such as emergency room care, which further drives up health care costs, exacerbating the insurance crisis.

As of 2007, according to the California Health Interview Survey, there are approximately 63,000 uninsured adults in San Francisco. As of 2009, San Francisco is attempting to address lack of health insurance through a new program called Healthy San Francisco. Although it is not insurance per se, Healthy San Francisco makes health care services accessible and affordable for uninsured residents, allowing them to have basic and ongoing medical care regardless of immigration status, employment status, or pre-existing medical conditions (<http://healthysanfrancisco.org/>).

Although no specific links between being uninsured or underinsured and HIV risk were found in the literature reviewed for this section, many people affected by HIV have issues related to poverty, employment, and immigration status that affect insurance status, which in turn can affect access to the health care system. In HIV prevention, the availability of free confidential and anonymous HIV testing is critical for making sure that lack of insurance is not a barrier to HIV testing.

**Limited knowledge of services.** A lack of knowledge about prevention services and their availability is clearly a barrier to obtaining accurate information about HIV. Some populations might require very specific efforts in order to become more aware of the prevention services available, and the services themselves need to be carefully designed to reach the population. In addition, language, culture (or acculturation), and literacy are often important factors that limit knowledge of services, but other factors, both personal and institutional, may play a critical role.

**Low perception of risk.** Low perception of risk has been correlated with involvement in high-risk behaviors. Perceptions about who HIV affects, lack of knowledge about sexual partners' risks, and other factors can contribute to low perceptions of risk.

**Discrimination.** Discrimination refers to social patterns of prejudice, rejection, and stigmatization and includes racism, homophobia, biphobia, transphobia/gender identity-based discrimination, sexism, ageism, ableism, and discrimination against substance users or people with mental health issues. Discrimination can manifest in many ways, including laws and policies, attitudes or public opinions, violence, or in health and social service provision. Several studies have found that discrimination can affect HIV risk (see Section I: Populations, p. 62, where discrimination and stigma are discussed as relevant). Barriers to service can result from discrimination, lack of availability of culturally appropriate services or lack of funding for certain types of services (e.g., stigma surrounding injection drug use contributes to the lack of federal funding for syringe access programs).

**Language barriers and low literacy.** People whose first language is not English face barriers when prevention is delivered only in English. Some people speak but do not read or write English, and some people do not read or write in any language. Issues related to language and literacy that affect how HIV prevention messages are received include the cultural context in which messages are understood, the perceptions of the target population about the relevance of the message, the priority population's perception of the intent of the message sender, the value and associations that the priority population places on particular risk behaviors, the use of common terms rather than medical or technical vocabulary, and layout and visual aspects of printed materials. Prevention education and services must be available in the language of the recipient. Language and literacy issues affect both immigrants and U.S.-born individuals and are particularly salient for visually and hearing impaired people.

## HAVING HIV-POSITIVE OR HIGH-RISK SEXUAL PARTNERS

### Why Is Having HIV-Positive or High-Risk Sexual Partners An Important Cofactor?

Prevention efforts need to focus on HIV-negative people who have HIV-positive or high-risk partners because this is the primary group at risk for HIV. Clearly, unprotected anal or vaginal sex between an HIV-negative person and a person living with HIV is high risk for HIV transmission, with risk varying depending on whether the person living with HIV is the receptive or the insertive partner and the type of sex (anal vs. vaginal).

It should be noted that people do not always know their own or their partners' HIV status or risks, and data suggests that assumptions are often made by both parties, about their own and each other's HIV statuses. These assumptions might be correct or not, and sexual decisions are often based on them. For example, one study found that an increased number of assumed *HIV-negative* partners among MSM was associated with HIV seroconversion, indicating that at least some partners reporting HIV-negative status were not actually HIV-negative (Buchbinder et al 2005). In another example, a study of heterosexual men and women found that, in general, female participants perceived their male partners' risks to be much lower than they actually were; many male partners reported a history of sex with men and sexual partners outside of the primary relationship, although they had not disclosed this to their female partners (Chen et al 2009b). Issues around disclosure and communication about HIV status are also relevant and are described in more detail in the section on People Living with HIV (p. 63).

Further, people may have condom use patterns that differ depending on the type of partner; often, there is little or no condom use with primary partners and higher (but not necessarily frequent or consistent) condom use with casual or sex work partners. Whether a partner is primary, casual, or a sex work partner is simply not a reliable indicator of the partner's HIV status or risk.

### Factors that Affect Whether a Person Has HIV-Positive or High-Risk Partners

All of the drivers and cofactors discussed in this chapter could affect whether a person is likely to encounter high-risk or partner living with HIV in their sexual networks. Individuals from two distinct communities could engage in exactly the same risk behaviors, but one might have a much greater risk of contracting or transmitting HIV than the other, due to his or her sexual networks, which can have a great influence on the potential for HIV exposure (CAPS 2003a). In addition, those who have sex with people in high-prevalence populations (e.g., gay men, IDUs) have a greater chance of exposure. The clearest example of how having high-risk partners or people living with HIV can affect HIV transmission, even when there is no increase in high-risk behavior, is with African American MSM. This group has equal or lower rates of risk behavior compared with other MSM but higher HIV incidence and prevalence, which is believed to be due, at least in part, to sexual network factors (e.g., African American MSM are more likely to partner with other African American MSM) (Berry et al 2007). (For a more in-depth discussion of this issue, see the section on African American People, p. 91.)

### Why Is Use of Public and Commercial Sex Venues An Important Cofactor?

## USE OF PUBLIC AND COMMERCIAL SEX VENUES

Public sex environments include places where people "cruise" for sexual partners, such as parks. Commercial sex environments are places where an admission is paid for entrance, such as bathhouses and sex clubs. Unprotected sex between partners of opposite serostatus may occur in these environments, and safer sex negotiation may be inhibited by a number of factors, including the public environment, anonymity of partners, covertness of the sex, and drug use.

Despite these factors, research seems to support that certain commercial sex environments might actually contribute to reduced risk behavior. Two studies conducted with MSM attending bathhouses in urban environments found that most bathhouse patrons engaged in lower risk behaviors during bathhouse encounters, such as oral sex, and among those who did engage in anal sex, most (nearly 90%) used condoms (Van Beneden et al 2002, Woods et al 2007). In fact, participants in the second study were more likely to report having had high-risk sex at home



or in a hotel compared with a bathhouse (Woods et al 2007). In the first study, those who did report unprotected anal sex were more likely to be HIV-positive and report a greater number of partners overall, suggesting that this group might be an important one to target within a bathhouse setting.

Another study conducted in urban areas other than San Francisco found that there was a condom use norm in bathhouses, but there was also a norm of silence that precludes verbal negotiation of condom use (Elwood et al 2003). According to a Los Angeles study, interventions in bathhouse environments should pay attention to the distinct characteristics of the particular bathhouse, including its clientele, the sexual practices and condom use norms, norms regarding communication about sex and HIV status, bathhouse rules, and substance use (Mutchler et al 2003).

Less is known about the specific risks involved in meeting or having sex with someone in a public sex environment. A recent study found that, in San Francisco, MSM with unrecognized infection frequent adult bookstores (Raymond et al 2008). These and other similar locations might be an ideal setting for locating this group and linking them to HIV testing and care (Raymond et al 2008).

More information is needed about populations that use commercial and public sex venues in San Francisco, in terms of their risk for HIV and their service needs. In both public and commercial venues where sex occurs, condoms, information, HIV testing, and education should be available through outreach programs. In addition, interventions aimed at promoting policies that support safer sex, such as “safe sex only” spaces in bathhouses, might be appropriate.

### Who Goes to Public and Commercial Sex Venues?

MSM, both those who identify as gay/bisexual and those who identify as heterosexual, are the primary populations at risk due to sex in these locales. Marginalized populations, such as homeless persons, immigrants, sex workers, and others who may not have anywhere else to have sex except in public environments, are also at risk.

## APPENDIX I Resource Inventory

### EXHIBIT A1 Distribution of Funds by Resource Allocation Tier Compared with HPPC Recommendations from the 2004 HIV Prevention Plan\*

RESOURCE ALLOCATION TIER	BRPs	ESTIMATED PERCENT OF NEW INFECTIONS, 2004	HPPC RESOURCE ALLOCATION GUIDELINES	ACTUAL DISTRIBUTION OF FUNDING**
Tier 1	1. MSM, MSM/F 2. TSM, TSM/F, TSF, TST, TSM/T, TSF/T	79%	73–81%	75%
Tier 2	3. MSM-IDU, MSM/F-IDU 4. FSM-IDU, FSM/F-IDU, FSF-IDU 5. MSF-IDU 6. TSM-IDU, TSM/F-IDU, TSF-IDU, TST-IDU, TSM/T-IDU, TSF/T-IDU	20%	18–22%	21%
Tier 3	7. FSM, FSM/F, FSF	1%	1–5%	3%
Tier 4	8. MSF	<1%	<1%	<1%

\*For more information on the 2004 resource allocation tiers and BRPs, see Chapter 3: Priority Setting, pp. 150-168.

\*\*The funding distribution presented is as of February 2009. This takes into account budget reductions that were made due to the San Francisco budget deficit.

