

CENTRAL
DISTRICT
HEALTH
DEPARTMENT

HIV/AIDS REPORT

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Epidemiology of HIV/AIDS in Health District 4

Introduction

The purpose of this report is to summarize the epidemiological picture of HIV/AIDS in Health District 4. Results described in this report were based on data collected through case investigations done by local infectious disease epidemiologists with the intent to both monitor disease trends and prevent the spread of disease. Central District Health Department (CDHD) hopes to use this report to:

- Identify areas where prevention efforts need to be focused
- Identify risk behaviors or other risk indicators that need further examination
- Communicate and collaborate with partner agencies and policy makers

Demographic Description of Health District 4

Central District Health Department is the local health department for Health District 4, which encompasses Ada, Boise, Elmore and Valley counties. These four counties have a total population of roughly 430,000. The living environment of the population is very diverse, comprised of urban, rural and frontier areas. Ada County includes the city of Boise, which is the primary urban center of the State of Idaho and includes approximately 371,649 people (U.S. Census Bureau, n.d). The median age of Ada County residents is 34.5 years. An estimated 92.3% are White, 6.5% Hispanic or Latino and 1.1% Black. The second largest county by population is Elmore County. Elmore County is primarily rural with a total population of about 29,130 persons (U.S. Census Bureau, n.d). The median age of Elmore County residents is 29.1 years. Nearly 85.4% of residents are White, 12% Hispanic or Latino and 3.2% Black. Valley County is also a rural area and has about 7,651 residents (U.S. Census Bureau, n.d). The median age is 43.5 years. The majority of individuals are White (96.4%), 2% Hispanic or Latino and 0.1% Black. The least populated is Boise County, which consists of both rural and frontier communities. The population totals 6,670 and the median age is 40.4 years. The county is 97.2% White, 3.4% Hispanic or Latino and 0.2% Black.

Limitations

The data collected and analyzed for this report provides valuable insight into the risks associated with HIV/AIDS in the community. It also affords CDHD an opportunity to address risk factors associated with exposure to HIV/AIDS, but there are some limitations to the dataset. In order for cases to be investigated by CDHD, they must be reported. The department relies on local health care providers, laboratories, hospitals and others to report new cases of HIV/AIDS. We recognize that some cases go unreported. Another factor that may influence outcomes found in this analysis is reporting bias that occurs during the interview between the new case and the HIV epidemiologist. Some cases give partial or incomplete information while others refuse to be interviewed at all, this may ultimately influence the overall epidemiological picture of HIV/AIDS in Health District 4. To combat these effects, a literature review was conducted to identify research that examined variables that influence HIV/AIDS risk and health outcomes. We found that the analysis of HIV/AIDS in Health District 4 was consistent with the analyses of HIV/AIDS in other communities across the country.

Current Trends

The incidence of newly diagnosed cases of HIV/AIDS in Health District 4 has been sporadic over the past 10 years (Figure 1). There is no known cause for the variation in disease occurrence from one year to the next. Although the Centers for Disease Control and Prevention (CDC) recommend it (CDC, 2006), HIV/AIDS is not typically part of preventive medicine screening protocols. Newly diagnosed cases do not equate to newly infected cases since infected individuals can go for years without symptoms. The implications of not knowing one's HIV status can be harmful to the individual and their sexual contacts. The development of effective antiretroviral treatment for HIV/AIDS infection has been very successful in prolonging life and decreasing the risk of sexual contacts acquiring HIV. The sooner HIV infected individuals start these treatment regimens the better the outcome for both the patients and their sexual contacts. Despite this fact, access to these medications is not guaranteed, and within our community there is currently a waiting list for individuals to gain access to these drugs. Therefore, the more active CDHD can be in communicating the risk to the community and taking steps to educate those at greatest risk for exposure, the healthier our community will be.

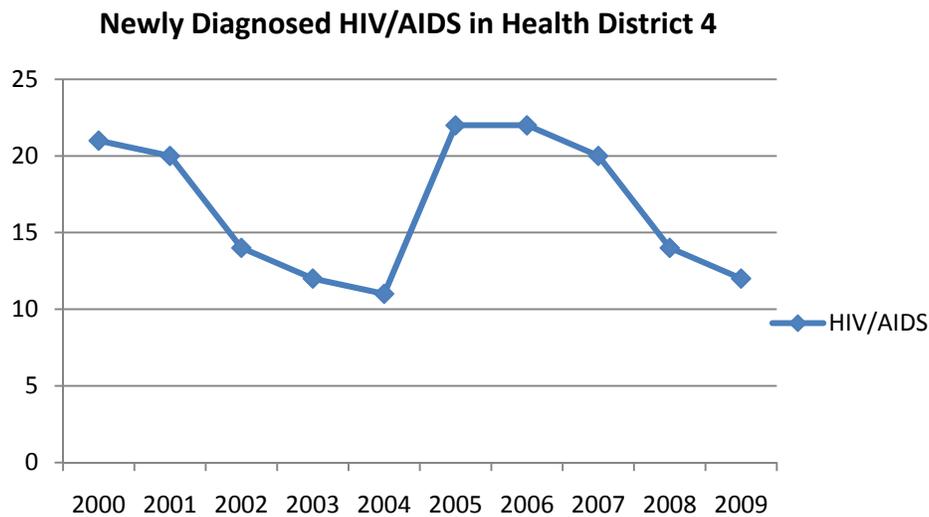


Figure 1: Distribution of Newly Diagnosed HIV/AIDS, 2000 – 2009

Demographics

Age at time of epidemiologic intervention

- Average age: 38
- Age range: 12 to 67 years
- Intervention occurs for most cases between their 20s and 50s. A limiting factor is that there is no way of knowing when they acquired their infection. However, the data does indicate that those at greatest risk for exposure to HIV occurs prior to and around middle age (Figure 2).

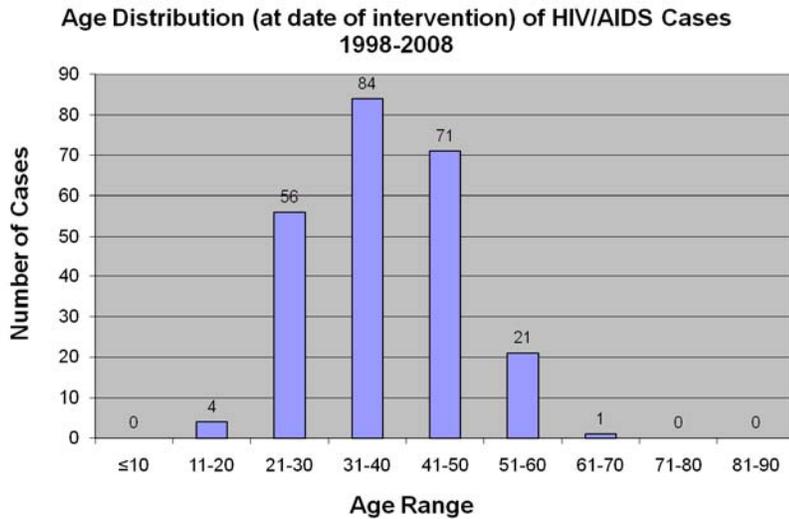


Figure 2: Age Distribution

Gender

- 85% male
- The majority of the HIV population is male, which is indicative of the high prevalence of HIV/AIDS in the homosexual population (Figure 3). Female acquisition of the infection is most commonly reported from exposure to men who have sex with men (MSM) or exposure in a foreign country where HIV is more prevalent in their heterosexual population. There is a growing concern among epidemiologists that if the female heterosexual burden of disease continues to increase in Health District 4, there may be an increasing risk to the heterosexual population. An increase in prevalence among the heterosexual population would likely increase the risk for HIV/AIDS exposure among all sexually active residents living in Health District 4, but particularly among adolescents and young adults. This population is particularly at risk because they are more likely than other age groups to have multiple sex partners during these formative years.

HIV/AIDS Incidence by Gender: 1998-2008

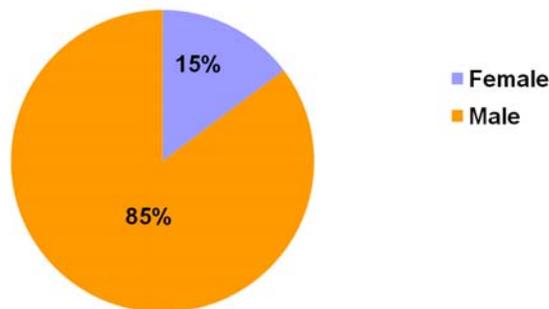


Figure 3: Distribution by Gender

Race

- 80% White
- While the majority of Health District 4 population is white (>90%), there is a disproportionate number of Blacks within the minority populations that have HIV/AIDS (Figure 4). However, many of these cases did not acquire HIV in Idaho. Nearly 8% of our HIV/AIDS cases are immigrants who were exposed to HIV prior to arriving in the United States.

Percent of HIV/AIDS Cases by Race: 1998 - 2008

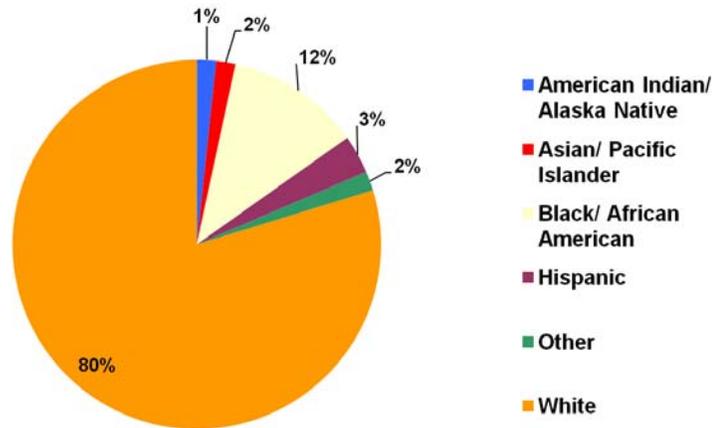


Figure 4: Distribution by Race

Percent of foreign-born

- 10.8% of cases are foreign-born (Figure 5)
- Of these, 20.8% of the cases were from the Democratic Republic of Congo and 12.5% were from Myanmar; the remainder were primarily from various countries in sub-Saharan Africa
- While the majority of HIV/AIDS cases over the past 11 years have been born in the U.S., there is an evident distinction in the demographics of the two populations. Of the U.S. born, MSM are the greatest at risk for exposure. Very little HIV/AIDS infection is found in the heterosexual population, which is reflected by the disproportionate prevalence of infection between males and females (Figure 6). However, the epidemiology of HIV/AIDS is very different in many other countries. Prevalence of HIV/AIDS among the foreign-born population is almost equal between males and females because the disease is most prominent in the heterosexual population (Figure 6). If HIV exposure and acquisition increases among the heterosexual population in U.S., we could see similar health outcomes (i.e., equal disease distribution between males and females).

Immigrants Arriving with HIV Infection

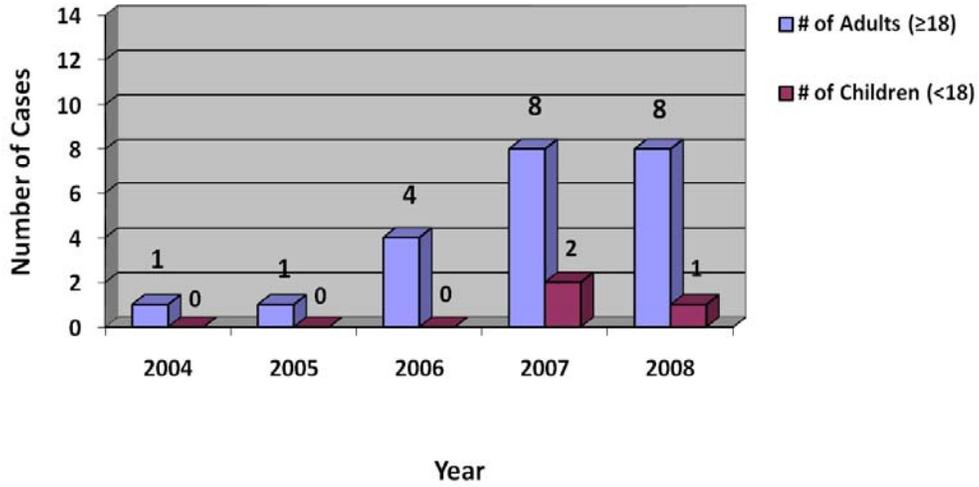


Figure 5: Reported HIV at Time of Immigration to Idaho

Percent of HIV/AIDS Cases by Birthplace and Gender: 1998-2008

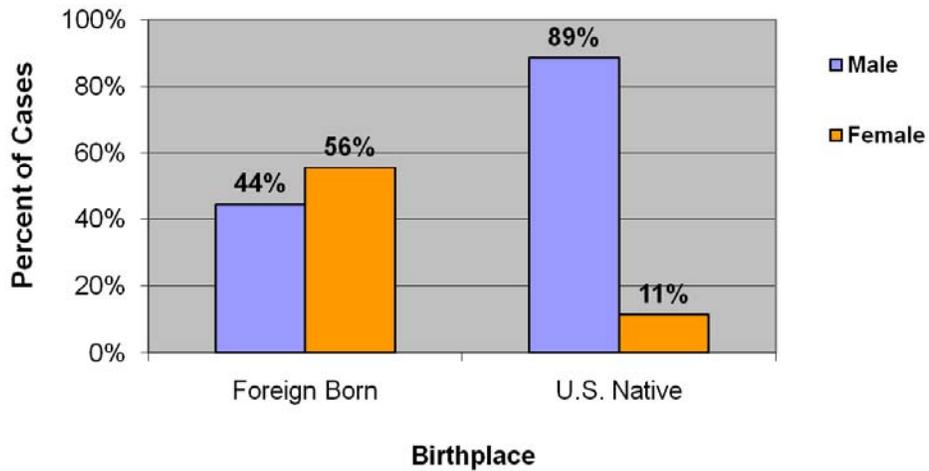


Figure 6: Distribution by Place of Birth

Other Demographic Characteristics

Risk factors for exposure

- 13% history of incarceration
- 66% history of substance abuse

Sexual orientation

- 62% of cases are MSM (includes men who have sex with both men and women)
- Men who have sex with both males and females increase the risk for increasing the burden of HIV/AIDS in the heterosexual population

History of co-infection at time of HIV/AIDS diagnosis

- 3.8% history of co-infection
 - 2.5% chlamydia, gonorrhea, herpes, or syphilis
 - 1.3% tuberculosis
- Co-infection data are likely under represented since the HIV epidemiologist only collects co-infection data at the time of intervention prior to medical evaluation. Also, this data has not been consistently collected.

Epidemiological Description of HIV/AIDS among MSM

Introduction

The purpose of this section was to evaluate the risk behaviors associated with the population most affected by HIV, men who have sex with men (MSM), in Health District 4. Findings from this section will be used to communicate risks to the community, develop prevention programs and provide evidence to grantors supporting related research. For the purpose of this paper, MSM will also include men who have sex with men only and men who have sex with both men and women.

Research Questions

1. In what venues are MSM meeting sex partners?
2. What is the prevalence of methamphetamine use among MSM?
3. What percentage of MSM report using more than one illicit drug?
4. Where are MSM getting tested?

Findings

Research Question #1

In Health District 4, MSM diagnosed with HIV/AIDS reported meeting sex partners in a number of different venues (Table 1). Meeting partners online was by far the most commonly reported way that sex partners were “hooking up”. Over 18% of MSM reported meeting their sex partners online. Many of these encounters were likely anonymous, but these data have only been collected for the past 4 years and have not been consistently collected. Men who have sex with men also reported meeting sex partners through friends (2.2%), at parties (2.2%) and bars (2.9%).

Table 1: Venues Where MSM Are Meeting Sex Partners

Reported as Primary Venue	Percent
Adult Book Stores	0.7%
Bars	2.9%
Bath House	0.7%
Friends	2.2%
None	1.5%
Online	18.4%
Other	0.7%
Parties	2.2%
Prostitute	0.00%
Unknown	70.6%

Research in this area has shown increasingly widespread use of internet sexual networking sites to initiate sexual relationships, especially among the MSM population (Blackwell, 2008; Davis, Hart, Bolding, Sherr & Elford, 2006; Engler, Frigault, Leobon & Levy, 2005; Halkitis & Parsons, 2003; Liao, Millett & Marks, 2006; Shernoff, 2006; Wolitiski, 2005). This is consistent with the finding in Health District 4. Furthermore, MSM who use the internet to initiate sexual relationships are more likely to engage in unsafe sexual practices such as unprotected anal intercourse and substance use (Benotsch et al., 2002; Hospers, Harterink, Van Den Hoek, & Veenstra, 2002; Liao et. al, 2006). In a study conducted by Mimiaga et al. (2008), 65% of participants reported meeting sexual partners online since being diagnosed with HIV. Other partner-meeting locales included bars, the gym, the street, and a “party line” telephone line.

The types of venues MSM are meeting sexual partners is of particular concern to public health and healthcare professionals, as MSM continue to represent the largest proportion of new HIV diagnoses (CDC, 2009). Understanding the link between venues for meeting sex partners and sexual risk behavior is critical to developing and implementing effective sexual health education and HIV prevention services.

Research Question #2

Reported use of methamphetamine among MSM is a growing concern. In a recent case control study conducted among Seattle area MSM, researchers found HIV acquisition to be associated with methamphetamine use, unprotected anal intercourse, meeting partners at bathhouses or sex clubs, bars or dance clubs and online (Thiede et al., 2009). Methamphetamine is an insidiously damaging drug, with consequences such as HIV acquisition, permanent mental impairment, incarceration, social isolation, job loss and homelessness (Mimiaga et al., 2008). Results of our analysis of Health District 4 data suggest that roughly 12% of cases reported methamphetamine use between 1998 and 2008 (Figure 7).

Number & Percent Reporting Meth Use, 1998-2008

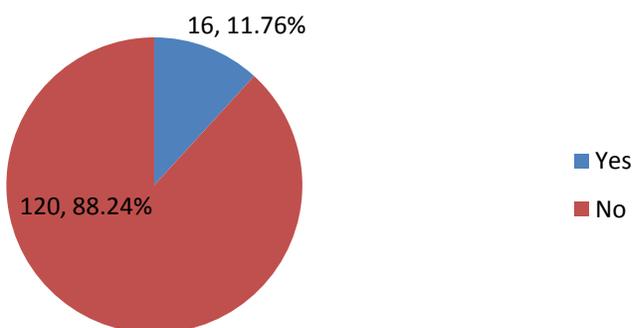


Figure 7: Frequency of Reported Methamphetamine Use

Other studies have found that 28.8% ($p<0.001$), 34.4% ($p<0.01$) and 59.3% ($p=0.05$) of their HIV-positive population reported methamphetamine use (Carey et al., 2009; Drumright, Gorbach, Little & Strathdee, 2009; Thiede et al., 2009). Methamphetamine use is of particular

public health concern because these individuals often also report unprotected insertive anal intercourse more so than non-users (Drumright et al., 2009; Schwarcz et al., 2007). Even after HIV diagnosis, many individuals continue to use the illicit substance (Mimiaga et al., 2008).

Research has found that HIV infected methamphetamine users rarely reported condom use because condoms were viewed as an obstacle to sexual pleasure and a reminder of the burden of being HIV-positive (McCready & Halkitis, 2008; Mimiaga et al., 2008). McCready and Halkitis also learned that methamphetamine decreased the likelihood that individuals would inquire about a partner's HIV status. In a separate study, methamphetamine use was independently predictive of high-transmission-risk sexual intercourse among the men who were HIV infected (OR=1.9; 95% CI=1.1, 3.3) (Schwarcz et al., 2007). Methamphetamine users also tend to look for sex in more types of venues than non-users and engage in more esoteric sex than non-users (Rawstone, Digiusto, Worth & Zablotska, 2007).

Mimiaga et al. (2008) found that the prevalence of methamphetamine use among MSM was 20 times that of the general population, and that it is linked to increased sexual risk taking. In addition, there is a high prevalence of sexual marathons among HIV-positive methamphetamine users, which increases the risk for exposure to non-infected sex partners (Semple, Zians, Strathdee & Patterson, 2009). Although prevalence of methamphetamine use in Health District 4 is relatively low when compared to other cities, the risk of exposure and acquisition of HIV is unproportionately higher among the MSM population when compared to other populations. Risk likely increases further when other drugs such as erectile dysfunction medications (EDM) are also taken in conjunction with methamphetamine (Drumright et al., 2009). Future data collection is necessary to fully evaluate the magnitude of this behavioral risk factor in Health District 4.

Research Question #3

Over 30% of HIV infected MSM report using more than one illicit drug in Health District 4 (Figure 8). Methamphetamine and nitrites used in combination have shown to be strongly associated with recent HIV infection (Drumright et al., 2009).

Reported Use of More Than One Illicit Drug

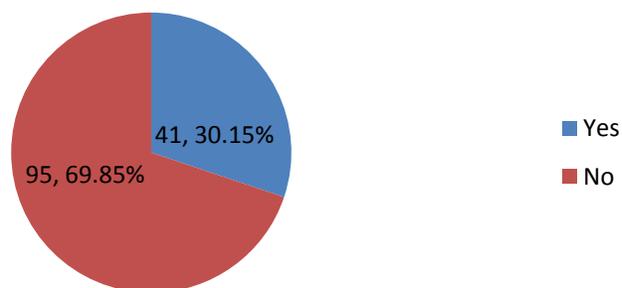


Figure 8: Frequency of Reported Use of More Than One Illicit Drug

In a study of HIV-positive MSM, almost every participant reported use of other drugs with methamphetamine (Mimiaga et al.). Those most frequently used in conjunction with methamphetamine were ecstasy, ketamine, GHB, marijuana and sometimes cocaine. Methamphetamine users were more likely than non-users to have used other recreational drugs and Viagra®; 63-76% of the HIV+ and 41-44% of HIV- methamphetamine users used Viagra®, and more than 97% of methamphetamine users in both HIV-status groups had used other illicit drugs (Rawstorne et al., 2007). Viagra® was often used with methamphetamine to prevent erectile dysfunction due to the use of methamphetamine and to enable marathon sex parties. This finding was further supported by Schwarcz et al. who found that 55% of the study participants that used methamphetamine in the past year also used Viagra®, whereas only 24% of those who did not use methamphetamine had used Viagra® (χ^2 test for associations, $p < 0.001$). In a study related to sexual marathons among HIV-positive MSM, researchers found that over the course of two months, 285 participants reported using an average of 3.5 different illicit drugs ($p < 0.01$) (Semple et al., 2009).

Research Question #4

Over 50% of individuals were tested by the Wellness Center, which is the only HIV clinic in southern Idaho that receives Ryan White funding. Roughly 28% of individuals were tested by either a physician or hospital, the remainder of individuals were identified through correctional facilities (5%), the public health department (9%), and the U.S. Department of State (3%) (Table 2).

Table 2: Locations Where MSM Get Tested

Health District 4, 1998-2008			Counseling and Testing System, 2007	
Location	Number	Percent	Hispanic (%)	Non-Hispanic White (%)
Wellness Center/STD Clinic	74	54.8%	20.2%	30.0%
Hospital/Physician	38	28.1%	1.8%	1.2%
Correctional Facility	7	5.2%	6.8%	7.4%
Public Health	12	8.9%	7.8%	7.9%
Tuberculosis Clinic	0	0%	0.7%	0.5%
Drug Treatment Center	0	0%	5.5%	7.0%
Overseas Exam: pre-immigration	4	3.0%	-	-

Little research has been published that examined where individuals are getting tested for HIV. Duran et al. (2010) examined whether Hispanic-White HIV testing disparities exist and to identify characteristics associated with newly diagnosed HIV among Hispanics. This research looked at 2007 data collected from the national HIV Counseling and Testing System (CTS). The dataset included persons from all sexual orientations. Of those reported in CTS, 9.6% were Hispanic MSM and 14.9% were non-Hispanic White MSM. Results from this study were similar to what was found in Health District 4 (Table 2). However, we could not separate MSM from

other sexual orientations in the paper published by Duran et al. so there may be some difference in where MSM are getting tested, but we cannot identify them. In a separate study to report the HIV testing rates among white, African, and Hispanic Americans, testing frequency, and testing locations, Rountree, Chen, Brown and Pomeroy (2009) found a similar distribution of testing among all HIV infected individuals. Their study used data collected from the Behavioral Risk Factor Surveillance System. Private doctor offices (41.3%), STD/HIV clinics (23.7%) and hospitals (18.7%) were most frequently utilized for HIV testing.

This indicates the lack of provider support for encouraging patients to know their status, despite what their risk may be. Current CDC guidelines recommend that all adults know their HIV status. Those with risk factors for acquiring HIV should be tested more frequently.

Future Research

- Explore how use of EDM, methamphetamine or other combinations of drugs affect the risk of HIV infection among MSM
- Explore reasons for EDM use and variation in HIV risk among MSM by different patterns of usage
- Explore possible connections between motivations for methamphetamine use and risky marathon sex
- Identify models that understand and predict high-risk behavior that may help in developing effective prevention programs
- Identify the percentage of HIV+ being treated with EDM
- Delineate where people in Health District 4 are getting tested
- Examine the long-term effects of increasing numbers of foreign born entering Health District 4 with an existing HIV/AIDS infection
- Conduct high-quality studies of HIV incidence, prevalence, attitudes, and detailed sexual and drug use behaviors, to keep prevention efforts relevant
- Identify opportunities to address the mental health issues underlying risk behavior, such as mood disorders, HIV-specific anxiety, and avoidant coping, which may play a role in their decisions to seek out high-risk encounters

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