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Editorial

Commentary of Drugs of Abuse and HIV Infection in South Florida, USA

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Editorial

Alcohols as well as illicit drugs such as methamphetamine (METH), cocaine, heroin, morphine are powerful psycho stimulants that are widely abused in the USA. According to the National Household Survey on Drug Abuse, in 2010 about 22.6 million Americans (aged 12 or older) were illicit drug abusers. Approximately 4.8 million Americans age 12 and older had abused cocaine in any form and 1.0 million had abused crack/cocaine at least once in a year. In alcohol users almost one-half of Americans aged 12 or older (51.8%) reported being current drinkers, translating to an estimated 131.3 million people. In 2010, a revised report from the National Survey on Drug Use and Health estimated 13 million people age 12 or older (4.3% of the population) has tried METH [1,2]. Studies have shown that illicit drugs are risk factors for triggering immune and neuronal functions [3,4].

HIV/AIDS continues to be a dreaded disease and by the end of 2009, it was estimated that 1,148,200 persons aged 13 and older were living with HIV infection in the United States, including 207,600 (18.1%) persons whose infections had not been diagnosed [5]. Incidence is the number of new HIV infections that occur during a given year. CDC estimates that approximately 50,000 people in the United States are newly infected with HIV each year. In 2010 (the most recent year that data are available), there were an estimated 47,500 new HIV infections [6]. Nearly two thirds of these new infections occurred in gay and bisexual men. African American men and women were also highly affected and were estimated to have an HIV incidence rate that was almost 8 times as high as the incidence rate among whites.

Injection drug use is the second most common mode of HIV transmission in the United States. In addition, non-injection illicit drug use may facilitate sexual transmission of HIV. Injection and non-injection illicit drugs play an important role in the etiology of viral infection and disease progression include heroin, cocaine, marijuana, and club drugs like methamphetamine, ketamine, gamma-hydroxybutyrate [GHB], and amyl nitrate (poppers) are risk factors for contracting HIV-1 infection and have been shown to be independently associated with progression to clinical AIDS [7,8,9].

The Centers for Disease Control and Prevention (CDC) reports that injection drug users represent an estimated 12 percent of new HIV cases each year in the United States, men who have sex with men account for 53 % of new cases, men who have sex with men and use injection drugs account for 4 %, and heterosexual contact accounts for 31 % [10]. Alcohol and drug use can impair judgment and decision-making, leading to risky sexual behavior that is often associated with HIV infection and transmission [11].

Florida has been heavily impacted by the HIV/AIDS epidemic. The state continues to rank third in the nation in the cumulative number of AIDS cases (126,581 in 2012) and second in the nation in the cumulative number of HIV cases (49,058 in 2012). The Florida Department of Health estimates that approximately 130,000 individuals are living with HIV disease in Florida. Of those persons living with HIV disease, 49% are black, 29% are white and 20% are Hispanic. Men represent 70% of the cases. Persons over the age of 45 years represent 60%.

HIV/AIDS kept rising in South Florida, which has had the nation's worst outbreak despite stepped-up efforts to control the spread of the virus. Miami is a high-incidence community for HIV. In 2009, it had the highest rate of new HIV infections in the nation. New HIV infections rose by 25% in Broward County, 30% in Palm Beach County and 21% statewide, while new cases of AIDS rose by 6% to 8% in those areas, according to 2012-end figures from the Florida Department of Health.

The most commonly used illicit drugs associated with HIV infection are heroin and stimulants such as cocaine and amphetamines, however, the use of club drugs has increased substantially in the past several years and is common among individuals who have HIV infection or who are at risk of HIV infection. The association between club drugs and high-risk sexual behavior in men who have sex with men (MSM) is strongest for methamphetamine and amyl nitrate and is less consistent with the other club drugs [12].

According to the South Florida most recent indicator in June 2013, marijuana consumption is high and increasing steadily, cocaine's 5-year decline is reversing.

Cocaine: While cocaine-related deaths declined by 9 percent statewide between 2011 and 2012 (from n=1,444 deaths to n=1,318), they increased by 8 percent in Miami-Dade County (from n=184 deaths to n=198) and by 12 percent in Broward County (from n=115 deaths to n=129) during that same period. Cocaine was considered the cause of death in 57 percent of the 129 Broward County deaths in which the drug was detected during 2012 and in 38 percent of the

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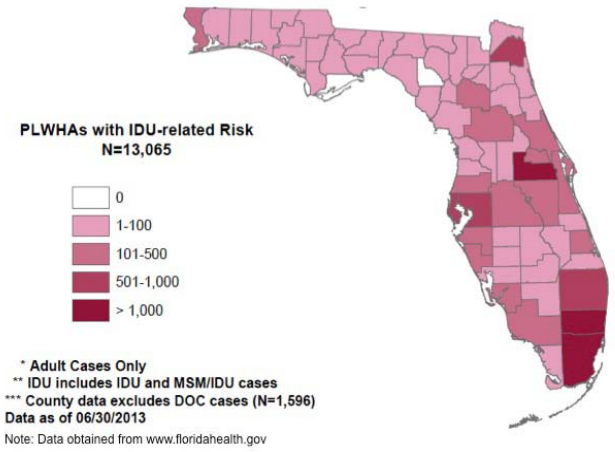

Figure 1: Persons Living with HIV/AIDS (PLWHAs),* with an Injection Drug Use-Associated Risk, ** by County of Residence,*** Reported through 2012, Florida.

County	Total PLWHA Cases	Total IDU*	Percent IDU	Total Sex w/IDU**	Percent Sex w/IDU
Miami-Dade	25,544	3,274	13%	1290	5
Broward	16,593	2103	13	851	5
Palm Beach	7,769	1484	19	829	11
Orange	7,149	1291	18	504	7
Hillsborough	5,898	1144	19	518	9
Duval	5,372	1009	19	439	8
Pinellas	3,564	723	20	338	9
Lee	1,677	305	18	126	8
St. Lucie	1,508	302	20	136	9
Volusia	1,358	324	24	116	9
Brevard	1,256	268	21	99	8
STATE TOTAL ***	98,291	17289	18	7841	8

*TotalIDU=IDUCases+MenwhohavesexwithMen(MSM)IDU + heterosexualsexwithIDU+ChildofIDUmom
**Sexw/IDU=MenwhohavesexwithMen(MSM)/IDU &heterosexualsexwithIDU
*** County data excludes Department of Corrections (DOC) cases and State total includes data from all 67 counties, and includes DOC cases
§ Persons Living with HIV/AIDS (PLWHA)
Note: Data obtained from http://www.floridahealth.gov

Table 1: Adults Living with HIV/AIDS (PLWHA) with an Injection Drug Use-Associated Risk, for Selected Counties, Reported through 2012, Florida.

198 deaths in which cocaine was detected in Miami-Dade County in that year. At least one other drug was also found to be present in all cocaine-related deaths in both counties.

Heroin: Heroin indicators, which historically have been at relatively low levels compared with other drugs of abuse in South Florida, rose sharply since the last reporting period. Heroin deaths increased by 89 percent across Florida between 2011 and 2012 (from n=62 deaths to n=117), while they rose by 120 percent in Miami-Dade County (from n=15 deaths in 2011 to n=33 in 2012). Heroin deaths in Broward County, while relatively few in number, tripled from 3 to 9 in the same 2-year period. Although methamphetamine consumption is low, but increased returning is a key issue for gay males and heavy club druggers.

Prescription opioids/opiates other than heroin: In Florida, in 2012, 4,944 persons died with 1 or more prescription drugs detected in those decedents; this represented a 10-percent decrease from the previous year. In Miami-Dade County, the number of prescription opioid drug-related deaths increased by 13 percent (from n=312 to n=353 deaths), while they declined by 19 percent in Broward County (from n=431 deaths to n=351). A total of 187 occurrences of 4 different prescription opioids were detected among decedents in Miami-Dade County during 2012, representing a 7-percent increase from 2011. The 258 such occurrences in Broward County in 2012 constituted a 21-percent decline from the previous year.

Benzodiazepines: The 5,184 reports of the presence of a benzodiazepine in deceased persons across Florida in 2012 represented a 13-percent decrease, compared with 2011.

Methamphetamine: Numbers of primary methamphetamine treatment admissions in 2013 remained very low and stable in both South Florida counties. However, statewide in Florida, deaths caused by methamphetamine totaled 68 in 2012; this represented a 39-percent increase over the previous year.

Marijuana/cannabis and synthetic cannabinoids (Cannabimimetics): Primary marijuana treatment admissions declined in both South Florida counties, from 39 percent of Miami-Dade County clients in CY 2012 to 28 percent in the first half of 2013, and from 30 percent of Broward County clients in CY 2012 to 19 percent in 2012.

CDC's National HIV Behavioral Surveillance System (NHBS) conducts interviews and HIV testing in selected metropolitan statistical areas (MSAs) (20 cities in USA). This report summaries data from 10,073 IDUs (persons who injected drugs within the past 12 months) interviewed and tested in 20 MSAs in 2009. Of the IDUs tested, 9% had a positive HIV test result, and 45% of those testing positive were unaware of their infection. Figure-1 and table-1 shows the number of PLWHAs with an injection drug uses associated risk in Florida (by County of residence). Miami consistently ranks as one of the major illicit drug centers in the U.S., and South Florida is also noted for its high prevalence of prescription drug abuse and diversion.

The main focus of both antiretroviral therapy and prevention are the same all over the world, however, various factors, like economical, geographical and political factors greatly affect the treatment and prevention of HIV in each area. The knowledge about HIV can help prevent this dreaded disease with increased access to antiretroviral interventions, new dimensions, and new opportunities for the treatment and prevention. The major challenge that still persists in the pathogenesis of HIV1 infection and its acceleration by psycho-stimulants or illicit drugs such as methamphetamine (METH), cocaine, heroin, morphine, is to develop viral replication-targeted therapy using novel anti-HIV compounds with new mode of action, accepted toxicity and less resistance profile. Against this backdrop, the World Health Organization (WHO) suggested the need to evaluate ethno-medicines for the management of HIV/AIDS. Accordingly, there is a need to evaluate traditional medicine, particularly medicinal plants and other natural products that may yield effective and affordable therapeutic agents. HIV/AIDS being

an exceptional epidemic, demands an exceptional response. Despite several challenges, both scientific and programmatic, tremendous progress has been accomplished, however, much more is required to be done for both treatment and preventive measures of HIV/AIDS.

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