

WISCONSIN AIDS/HIV PROGRAM NOTES

October 2014

Syphilis and HIV Co-infection in Wisconsin

Mari Gasirowicz, MA, Epidemiologist, AIDS/HIV Program; Brandon Kufalk, Syphilis Disease Intervention Specialist, STD Program; and Lauren Stockman, MPH, Epidemiologist, HCV Program, Wisconsin Department of Health Services

In 2013, 104 persons in Wisconsin were diagnosed with primary and secondary (P&S) syphilis, the stages when the disease is infectious; 30 (29%) of these persons were co-infected with HIV. This article provides background information about syphilis, the epidemiology of syphilis and syphilis/HIV co-infection, and a brief overview of syphilis prevention and control activities in Wisconsin.

Background

Syphilis is a complex, multi-stage disease, caused by the bacterium *Treponema pallidum*, and can result in long-term complications if not adequately treated.¹ It is one of five reportable sexually transmitted diseases (STDs) in Wisconsin.

Syphilis and HIV are both serious infections. Genital, rectal and oral sores and other breaks in the skin caused by primary and secondary (P&S) syphilis infection can facilitate sexual transmission and acquisition of HIV infection. An HIV-negative person is two to five times more likely to acquire HIV from a syphilis/HIV co-infected sex partner than from an HIV mono-infected partner. Acquisition of syphilis increases the HIV viral load of an HIV-positive person. This is concerning because data from several major cities indicate an average of 4 in 10 syphilis infected men who have sex with men (MSM) are also HIV-positive.²

Epidemiology of syphilis in the United States

Syphilis cases in the United States were on the verge of elimination in 2000 but rebounded in the last few years. Rates of P&S syphilis continued to increase overall during 2005–2013.³ Increases occurred primarily among men, particularly among MSM, the group that accounted for the majority of male P&S syphilis cases during 2009–2012. The estimated proportion of P&S syphilis cases attributable to MSM increased from 7% in 2000 to 64% in 2004.²

Nationally, the epidemiology of syphilis among men, including MSM, has shifted since 2009. The largest increase in cases occurred among Hispanic and White men and younger men, with the highest rates in the 20-29-years age group. However, rates of infection are highest among Black men, and disparities in P&S syphilis between Black men and men of other racial/ethnic groups remain large.⁴ In 2012, the national rate of reported P&S syphilis cases was 5.0 per 100,000 population, ranging from a rate of 9.5 in Georgia to 0.2 in Montana. Wisconsin ranked

¹ A detailed fact sheet on syphilis is available on the Centers for Disease Control and Prevention website at <http://www.cdc.gov/std/syphilis/STDFact-Syphilis-detailed.htm>.

² <http://blog.aids.gov/2012/12/syphilis-and-hiv-a-dangerous-duo-affecting-gay-and-bisexual-men.html>

³ 2012 Sexually Transmitted Disease Surveillance, Syphilis, <http://www.cdc.gov/std/stats12/syphilis.htm>

⁴ Primary and Secondary Syphilis — United States, 2005–2013, MMWR, May 9, 2014 / 63(18):402-406, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6318a4.htm?s_cid=mm6318a4_w

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39th of the 50 states, with a rate of 1.6 per 100,000.⁵ The Milwaukee Statistical Area (MSA) ranked 45th of the 50 largest MSAs (Milwaukee MSA rate, 2.8; U.S. cities overall rate, 7.2).⁶

Estimates of HIV prevalence in persons with P&S syphilis in the U.S. vary. In 2012, the proportion of MSM who were HIV-positive and presented to STD Surveillance Network clinics with P&S syphilis infection ranged from 18.5% in Los Angeles to 66.7% in Birmingham. The median site-specific proportion co-infected with HIV was 44.8%.⁷

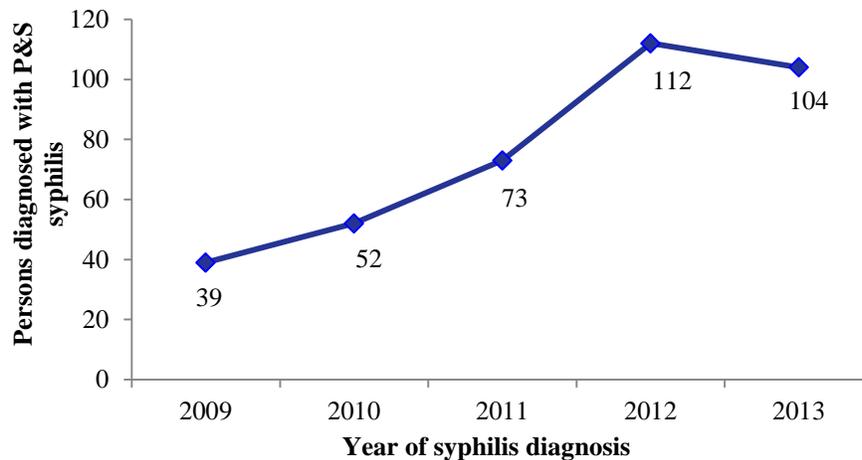
Epidemiology of primary and secondary syphilis and HIV/syphilis co-infection cases in Wisconsin

Trends in P&S syphilis cases

Persons diagnosed with primary and secondary (P&S) syphilis described below are those reported in the Wisconsin Electronic Disease Surveillance System (WEDSS) for the years 2009-2013. For the small number of persons diagnosed with syphilis more than once, the date of the first diagnosis was used.

Nearly 400 (n=380) persons were diagnosed with primary and secondary (P&S) syphilis in Wisconsin during 2009-2013. The number of diagnosed persons tripled between 2009 and 2012 (from 39 to 112) and then declined modestly in 2013 to 104 (Figure 1).

Figure 1: Persons diagnosed with primary and secondary syphilis, Wisconsin, 2009-2013



Mirroring national patterns, the rate per 100,000 population diagnosed with P&S syphilis increased five-fold among Whites and Hispanics in Wisconsin between 2009 and 2013 while fluctuating among Blacks. However, the rate in Blacks (74.2) in 2013 remained more than 30

⁵ Primary and Secondary Syphilis - Reported Cases and Rates by State, Ranked by Rates, United States, 2012 <http://www.cdc.gov/std/stats12/tables/26.htm>

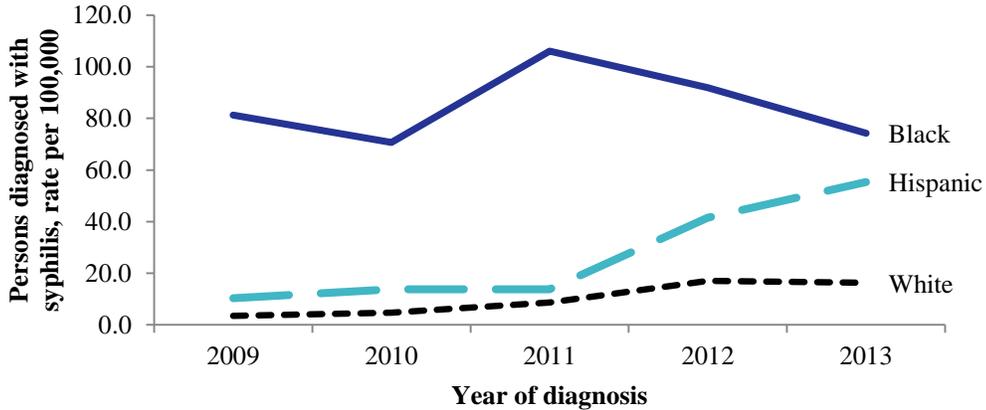
⁶ Primary and Secondary Syphilis - Reported Cases and Rates in Selected Metropolitan Statistical Areas United States, 2012, <http://www.cdc.gov/std/stats12/tables/30.htm>

⁷ STDs in Men Who Have sex with Men: <http://www.cdc.gov/std/stats12/msm.htm>

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percent higher than the rate in Hispanics (55.3) and more than 350 percent higher than the rate in Whites (16.3) (Figure 2).

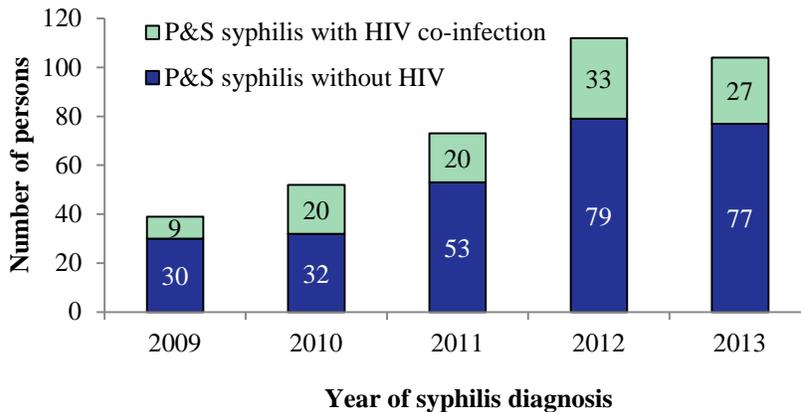
Figure 2: Primary and secondary syphilis rates per 100,000 population by race/ethnicity, Wisconsin, 2009-2013 (n=380)



Co-infection with HIV

Persons diagnosed with P&S syphilis in Wisconsin during 2009-2013 (n=380) were matched with HIV cases ever reported in Wisconsin, 1981-2013, through the Wisconsin HIV surveillance system (eHARS, n=12,509). During 2009-2013, 118 of 380 (29%, range 23%-38%) persons diagnosed with syphilis in Wisconsin were co-infected with HIV prior to or within six months after their syphilis diagnosis (Figure 3).

Figure 3: Persons diagnosed with primary and secondary syphilis with and without HIV co-infection,* Wisconsin, 2009-2013



* HIV diagnosis prior to or within six months after syphilis diagnosis

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Demographic characteristics of P&S syphilis mono-infected (n=262), of HIV-co-infected (n=118), and of all persons diagnosed with P&S syphilis (n=380), 2009-2013, are provided in Table 1.

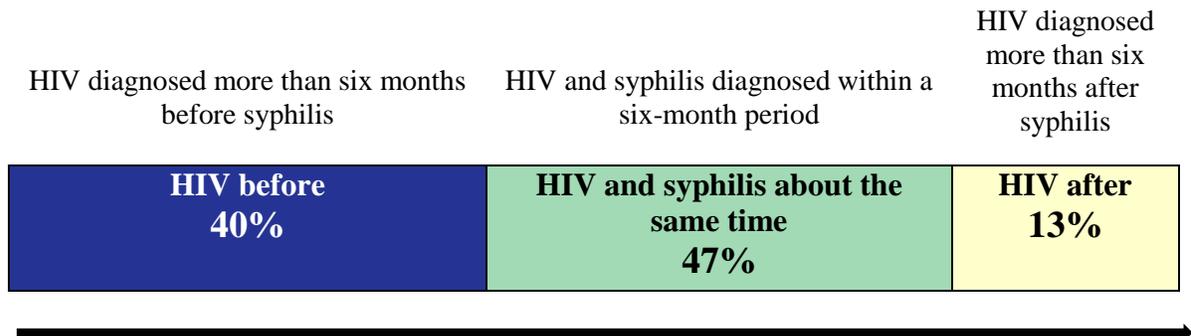
Table 1: Demographic characteristics of persons diagnosed with primary and secondary syphilis with and without HIV co-infection,* Wisconsin, 2009-2013

	P&S syphilis only (n=262)	P&S syphilis/HIV co- infection (n=118)	All P&S syphilis (n=380)
Sex			
Male	79%	100%	86%
Female	21%	0%	14%
Race/Ethnicity			
White race	54%	53%	53%
Black race	31%	34%	32%
Other race	15%	13%	15%
Hispanic Ethnicity	11%	8%	10%
Age			
15-29 years	44%	58%	48%
County (% of state's population)			
Milwaukee (17%)	37%	46%	33%
Dane (9%)	8%	13%	16%
Other (74%)	55%	41%	51%

* HIV diagnosis prior to or within six months after syphilis diagnosis.

Among persons diagnosed with both HIV and P&S syphilis during 2009-2013, nearly half (47%) were diagnosed with both infections within a six-month period. Of the remaining cases, three times as many were diagnosed with HIV prior to syphilis as were initially diagnosed with syphilis (Figure 4).

Figure 4: Order of HIV diagnosis relative to syphilis diagnosis among persons diagnosed with both infections 2009-2013, Wisconsin (n=53)



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Efforts to reduce syphilis infection and syphilis/HIV co-infection

Partner services

The Wisconsin Department of Health Services (DHS) STD Control Section and the City of Milwaukee Health Department (MHD) conduct confidential partner services activities for cases of syphilis, including those co-infected with HIV. Communicable Disease Specialists (CDS) located at MHD provide services to the southeastern region of the state (Milwaukee, Racine, Kenosha, Waukesha, Walworth, Ozaukee and Washington counties). A DHS STD Program Disease Intervention Specialist located in Madison conducts partner services activities with co-infected cases in the rest of the state.

Partner services activities include a face-to-face interview that addresses:

- Syphilis testing;
- Disease information and condom education;
- Confidentiality;
- Medical treatment and/or referral;
- Partner elicitation for follow-up with named partners for testing and referrals; and
- Prevention counseling, including behavioral modification, to prevent re-infection with syphilis or further transmission of syphilis, other STDs and HIV infection.

Education for medical providers

The Wisconsin STD Control Section educates infectious disease physicians about Centers for Disease Control and Prevention (CDC) recommendations regarding syphilis screening, including annual syphilis screening for people living with HIV.⁸ Early identification of syphilis allows for less invasive treatment.

Awareness and prevention activities

Because Milwaukee has the largest burden of syphilis infections in Wisconsin, a number of syphilis prevention activities are located there. Information about STD testing in Milwaukee is available here: <http://city.milwaukee.gov/Community-Resources.htm>.

The City of Milwaukee Health Department leads the Community Partnership Team (CPT), which meets quarterly and whose mission is to strengthen the capacity of health professionals and organizations to reduce the spread of STDs and HIV. The CPT facilitates coordination of services and greater community awareness. Currently the following organizations participate:

- City of Milwaukee Health Department
- Boys and Girls Club of Milwaukee
- AIDS Resource Center of Wisconsin
- Black Health Coalition of Wisconsin

⁸ 2010 STD Treatment Guidelines, <http://www.cdc.gov/std/treatment/2010/default.htm>

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- Planned Parenthood of Wisconsin
- Sixteenth Street Community Health Center
- UMOS
- Wisconsin Division of Public Health

The Wisconsin DHS STD and AIDS/HIV Programs, the City of Milwaukee, and other local health departments partner with community-based, faith-based and health care organizations to reduce the incidence of syphilis and HIV co-infection. For questions about syphilis, please call Brandon Kufalk at 608- 261-6390 or email Brandon.Kufalk@wisconsin.gov.



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