



**Public Health**  
Prevent. Promote. Protect.

# Syphilis Surveillance Report, 2012

## A Public Health Surveillance Report for Cleveland and Cuyahoga County

**Total syphilis** is defined as all new syphilis cases reported during the year in any of the following phases:

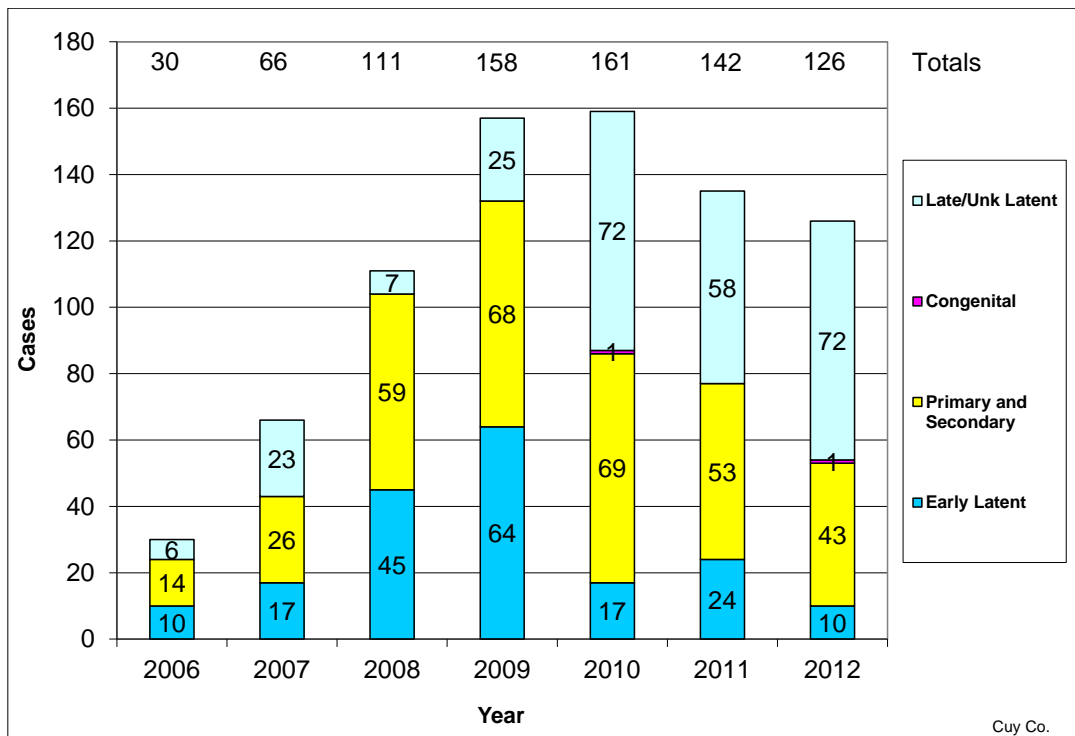
- Primary and secondary syphilis – the most acute and infective stages
- Latent syphilis
- Tertiary syphilis (often referred to as neurosyphilis)
- Congenital syphilis – syphilis transferred from mother to infant

This report describes diagnoses for all syphilis cases (total syphilis) and the most acute phases, primary and secondary, reported among Cuyahoga County and Cleveland residents.

An outbreak of syphilis began in mid-2007 in Cuyahoga County. For 2012, total syphilis incidence cases decreased to 126 cases for a rate of 9.92 cases per 100,000 population (2012 population), respectively. See **Figure 1**. This reflects a 7.0% decrease over 2011 rates.

Syphilis incidence continues to be a significant health risk to the public, especially due to the elevated prevalence rates of Chlamydia, gonorrhea and HIV/AIDS in our area. In addition, congenital syphilis cases, which are preventable, continue to be reported in our area.

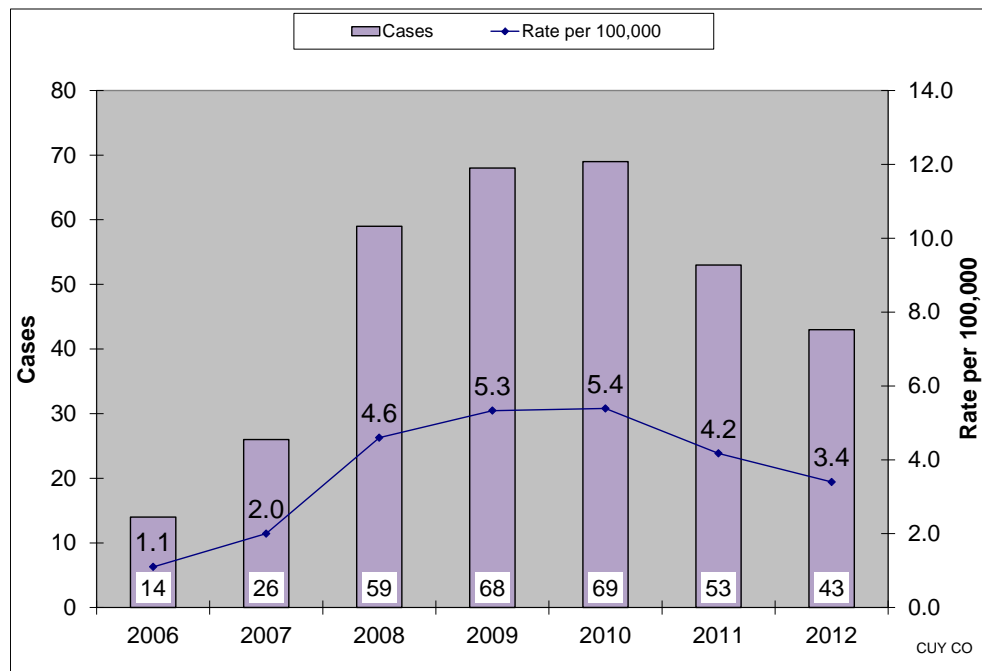
**Figure 1. Total syphilis cases for Cuyahoga County, 2006-2012, by stages**



Even more significant was a decrease in primary and secondary syphilis cases, dropping from 53 cases in 2011 to 43 cases in 2012. See **Figures 1 and 2**. The risk of transmitting syphilis is greatest among those with primary or secondary syphilis. These two stages occur within the first three to six months of the initial infection.

For Cuyahoga County, rates for primary and secondary syphilis decreased from 4.17 cases per 100,000 to 3.40 cases per 100,000 county population, a **18.6 percent decrease in rates**. See **Figures 2 and 5a**.

**Figure 2. Cases and rates of Primary and Secondary stage syphilis for Cuyahoga County, 2006-2012**



### Significant Issues with Primary/Secondary Syphilis Cases

**Co-infection with HIV** continues to be a major issue, where more than (58%) of all persons diagnosed with primary and secondary syphilis were HIV positive (i.e. 25 of 43), and most of these cases were males whose transmission risk is having had sex with other males (MSM). This pattern of co-infection has become more predominant in 2012 than in any other year, where HIV positivity among primary and secondary syphilis cases was reported in 48% in 2010 and 45% in 2011.

According to the CDC, a person with syphilis has 2 to 5 times greater risk of becoming infected with HIV from an HIV positive partner.

When reviewing the reports with respect to transmission risk, **seventy-one percent (71%) of MSM males with primary/secondary syphilis were HIV positive**. All other males and females with primary or secondary syphilis were HIV-negative.

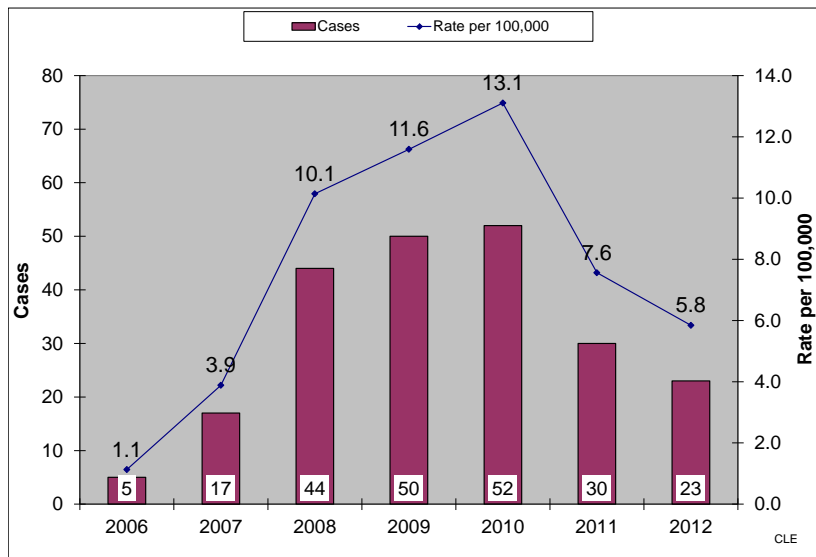
**Anonymous partners:** Also, nearly half (48%) of MSM males used the internet to find anonymous sexual partners compared 14% of those persons reporting heterosexual risk of syphilis transmission.

**Cleveland**

**Total Syphilis:** For 2012, there were 71 cases of total syphilis, a rate of 18.03 cases per 100,000, a **6.6% rate decrease** from the previous year. Seventy-one cases are markedly lower than the 97 cases (24.4 cases per 100,000) reported by the Ohio Department of Health. We re-examined the case addresses provided by medical and public health facilities for each case to determine the corrected municipality of residence. These changes are necessary for accurate city and neighborhood reporting.

**Primary/Secondary Syphilis:** The decrease in total syphilis and primary/secondary cases were more dramatic for Cleveland, where only 23 of 71 cases (32.3%) were primary/secondary cases, previously 40% for 2010-2011. Overall, 2012 primary/secondary syphilis **rates decreased 23.3%** to 5.84 cases per 100,000 (2011 Census population). See **Figures 3 and 5a**.

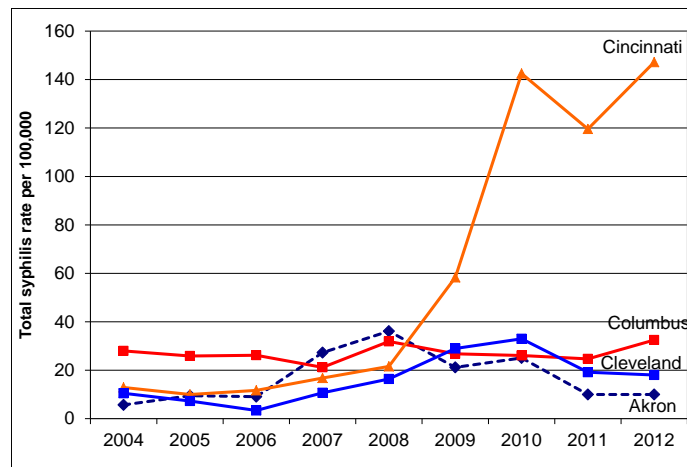
**Figure 3. Cases and rates of primary & secondary stage syphilis for Cleveland, 2006-2012**



**Cleveland compared to Ohio cities**

Total syphilis rates for Cleveland (see the solid blue line in **Figure 4**) have been steadily increasing since 2007 until decreasing in 2011 and 2012. Cleveland's adjusted rate for 2012, 18.0 cases per 100,000, exceeds only that for Akron (10.0 cases per 100,000 population).

**Figure 4. Total syphilis rates per 100,000 selected cities in Ohio, 2004-2012**



Cincinnati continues to have highest total syphilis rate across the state (147.2 cases per 100,000), nearly eight times greater than that of Cleveland, four times greater than the rate for Columbus (32.5 cases per 100,000) and almost fifteen times greater than the rate for Akron (10.0 cases per 100,000).

### **Other Cuyahoga County municipalities**

Primary and secondary syphilis cases were reported in the following municipalities (with case counts): Broadview Heights (1), Brook Park (1), Cleveland (23), Cleveland Heights (3), East Cleveland (3), Euclid (2), Lakewood (3), Maple Heights (2), Middleburg Heights (1), North Randall (1), South Euclid (1), Strongsville (1) and Westlake (1).

### **Congenital Syphilis**

Regrettably, there was one case of congenital syphilis in 2012. Since the outbreak began in 2007, there have been congenital syphilis cases reported only in 2010 and 2012.

Congenital syphilis can cause blindness, brain disorders and death in infants. Congenital syphilis is preventable through routine prenatal screening, and additional third trimester screening warranted by maternal risk factors.

### **Females - Cuyahoga County**

A total of 35 women were diagnosed with total syphilis in 2012 for Cuyahoga County; 19 were Cleveland residents. One was a congenital syphilis case, five were primary/secondary and two were diagnosed as early latent, usually within 12 to 18 months of infection.

The remaining 77% (n=27) were diagnosed at the late latent stage, most of whom were single and never married (87%), Black/African American (93%) and of an average age of 32 years. Five (18.5%) were pregnant when diagnosed with syphilis. In comparison, only 49% of males were diagnosed at the late latent stage.

More than half (55%) of the females diagnosed with late latent syphilis were under age 35 years, and three of the nine were pregnant when diagnosed.

This means that females are not recognizing the symptoms and are being diagnosed with syphilis well after the initial infection occurred. Testing for syphilis during pregnancy appears to be detecting most of the cases among females. However, repeated testing for syphilis is warranted due to the failure to prevent a congenital syphilis case. Please refer to the section, **Notes for the Medical Community**. The medical community should increase their index of suspicion for syphilis among females, inquire about symptoms during the medical visit, and consider syphilis testing in the first and third trimester.

None of the females diagnosed with syphilis was HIV positive.

## Primary and Secondary Syphilis

Primary and secondary (P&S) syphilis are the most important indicators of the outbreak since these are the most acute and infective stages of syphilis. **Figure 5a** shows the number of P&S cases decreasing 23.3% from 2011 to 2012 for Cuyahoga County and 18.6% for Cleveland.

**Fig. 5a: Primary and secondary syphilis case counts and rates per 100,000 population**

	Cuyahoga County			Cleveland		
	Cases, N	Rate per 100,000**	Percent change in rate from previous year	Cases N, (% of county cases)	Rate per 100,000**	Percent change in rate from previous year
2009	68	5.33	↑15.9%(from 2008)	50 (73.5%)	11.59	↑ 14.8%
2010	69	5.39	↑ 1.1%	52 (75.4%)	13.10	↑ 13.1%
2011	53	4.17	↓ 22.6%	30 (56.6%)	7.62	↓ 41.9%
2012	43	3.40	↓ 18.6%	23 (53.5%)	5.84	↓ 23.3%

\* Race only, not including Hispanic ethnicity. \*\*rate per 100,000 population. Updates in census denominators may alter rates slightly from previous reports.

**Fig. 5b: Primary and secondary syphilis by sex, race and ethnicity**

	Cuyahoga County					
	Cases, N	Male	Race*			Ethnicity
			Black	White	Other	Hispanic
2009	68	79.4%	61.7%	36.8%	1.5%	4.4%
2010	69	91.3%	73.9%	26.1%	0%	4.4%
2011	53	94.3%	67.9%	28.3%	3.8%	1.9%
2012	43	88.4%	65.1%	32.6%	2.3%	7.0%

**Fig. 5c: Primary and secondary syphilis by age at diagnosis and transmission risk**

	Cuyahoga County							
	Age at diagnosis (years)					Transmission risk		
	13-24	25-34	35-44	45-54	55+	MSM/Bi males	Hetero. Males	Hetero. females
2009	28.3%	25.0%	30.0%	13.3%	3.3%	60.9%	17.2%	21.9%
2010	32.3%	43.1%	16.9%	3.1%	4.6%	71.0%	20.3%	8.7%
2011	45.3%	20.7%	26.4%	7.6%	0%	71.7%	22.6%	5.7%
2012	25.6%	34.9%	13.9%	18.6%	7.0%	<b>81.4%</b>	7.0%	11.6%

MSM/Bi males are those males who reported having had sex with a man or reported sex with both males and females in the past 12 months. High risk heterosexual risk behavior is characterized as those persons reporting sex only with members of the opposite sex in the past twelve months. Risk behavior does not reflect sexual orientation, but rather risk behavior associated with syphilis transmission.

**Fig. 5d: Primary and secondary syphilis by race and age at diagnosis**

	Age at diagnosis (years), when available for Cuyahoga County cases											
	Black/African American						White					
	N	13-24	25-34	35-44	45-54	55+	N	13-24	25-34	35-44	45-54	55+
2009	42	40%	22%	27%	8%	3%	25	9%	27%	36%	23%	5%
2010	51	42%	45%	13%	0%	0%	18	5%	39%	28%	11%	17%
2011	36	56%	19%	14%	11%	0%	15	27%	27%	46%	0%	0%
2012	28	29%	46%	7%	11%	7%	14	22%	14%	21%	36%	7%

Primary/secondary syphilis cases continue to be primarily male, black/African American, and under the age of 35 years (Figure 5b). Three in four (75%) of black/African Americans with P&S syphilis were under 35 years of age; for white/Caucasians, only a third (36%) were under 35.

As noted previously, the most startling increase among primary/secondary syphilis cases is among MSM/bisexual males. For 2012, 81.4% of P&S cases were males reporting MSM/Bisexual risk behavior leading to syphilis transmission. See **Figure 5c**.

### **Other Risky Behaviors Associated with Syphilis Transmission**

Among primary and secondary cases reported in 2012,

- **Having an anonymous sex partner** was associated with syphilis transmission. More than half (59%) of all primary/secondary syphilis cases had sex (vaginal, anal, or oral) with an anonymous partner in the past 12 months. This was reported by about 28% of high risk heterosexual (HRH) males and females and 70% of MSM/bisexual males.
- **A past history of STDs** was reported in 40% of all P&S cases. Nearly all (94%) of MSM/bisexual males reported a past history of STDs.
- **Internet trolling for anonymous partners** was very common among MSM/Bisexual males, reported by 46% of MSM/Bi sexual males but only 5.9% of high risk heterosexual males and females.
- **Strong evidence of serosorting among HIV positive males:** Forty-four percent (44%) of HIV-positive MSM-Bisexual males with primary/secondary syphilis had sex with another known HIV-positive partner in the past 12 months. None of the HRH males and females with primary/secondary syphilis diagnosed in 2012 had sex with someone who he/she knew was HIV-positive.
- **Alcohol intoxication (>5 drinks at one time)** in the past 12 months, alcohol intoxication was reported by 42% of MSM/Bi sexual males and 28% of HRH males and females, similar to 2011 reports.
- **Marijuana use** was more common among high risk heterosexual males and females than among MSM/Bisexual males. (28% HRH males and females, 20%, MSM/Bi males). Other illicit drug use was rare. Only one male reported a past history of injection drug use. Other drug use reported were for crack cocaine (1), cocaine (any form: 2), methamphetamine (2); amyl nitrate “poppers” , heroin use and use of erectile dysfunction medications were not reported by those interviewed by investigators.

### **Condom use**

**Figure 6** shows condom use among the two at-risk groups, for 2009-2012.

Inconsistent use of condoms for anal sex among MSM/Bi males is a warning sign that safe sex prevention messages to this population are not being followed. Condom use for oral sex among these males was rare. Condom use by bisexual males for vaginal sex is inconsistent or ignored entirely.

Among high risk heterosexual males and females, condom use is worse than a coin flip, where at least half never use condoms for any kind of sex, and the other half only sometimes use them.

**Figure 6. Condom use (%) among Cuyahoga County residents diagnosed with primary or secondary syphilis in 200 through 2012, by transmission risk**

Behavior associated with risk transmission	MSM/Bisexual males				Males/Females: Heterosexual			
	2009	2010	2011	2012	2009	2010	2011	2012
Condom use for anal sex					(of 8)	(of 4)	(of 4)	(of 2)
- always	39.5	27.3	17.1	21.9	12.5	0	0	0
- sometimes	50.0	61.4	71.4	68.7	25.0	75	75	50
- never	10.5	11.4	11.5	9.4	62.5	25	25	50
Condom use for vaginal sex*	N/A	N/A	(of 7)	(of 2)				
- always			0	0	4.3	5.3	0	0
- sometimes			57.1	50	60.9	78.9	78.6	57.1
- never			42.9	50	34.8	15.8	21.4	42.9
Condom use for oral sex								(of 6)
- always	10.8	0	3.0	0	0	0	0	0
- sometimes	51.4	43.2	51.5	56.2	21.7	50	64.3	50
- never	37.8	56.8	45.5	43.8	78.3	50	35.7	50

\*reported for seven bisexual males, 2011 reports; for two bisexual males in 2012

### **Clinical presentation at primary/secondary syphilis diagnosis**

Regardless of risk behavior, 81% of all cases primary and secondary syphilis cases presented with a rash.

MSM/Bisexual males reporting symptoms presented with the following:

- 54% presented with a rash on the extremities (arms, hands, legs or feet)
- 23% with a rash on the torso
- 6% with rash on penis or scrotum
- 11% with lesions on the penis or scrotum
- 6% with lesions in mouth/oral cavity

Similar to MSM/Bi males presenting with a rash, 57% of high risk heterosexual (HRH) males and females reported a rash on the extremities, but none reported the rash limited to the torso. Primary sores among HRH males and females were on the genitals and vagina but not in the oral cavity.

### **Early Latent and Late Stages of Syphilis**

Figure 1 revealed that the number of persons diagnosed with early latent syphilis continues to be small. Early latent syphilis follows untreated primary and secondary stages and occurs usually within the first year of the infection. Infection remains in the body yet the person does not exhibit symptoms typical of primary or secondary syphilis. Moreover, it is a concern to public health providers because it represents an undiagnosed reservoir of syphilis. When screening does catch an early latent syphilis case, it is promising to the infected person since it was caught before further disease occurs and diagnostic testing was necessary for confirmation.

In the late stages of syphilis, damage can occur to the vital organs (brain and nerves, eyes, heart and liver) and to the joints. While this can happen 20-30 years later, such damage can give way to signs and symptoms that can limit the quality of life. These include problems with muscle coordination and numbness, dementia and blindness. Even if syphilis is diagnosed and treated at this later stage, the damage may be serious enough where the damage cannot be fully resolved or repaired. This damage can lead to premature death.

\*Preliminary data from the Ohio Department of Health ODRS (Ohio Disease Reporting System) as of Sept 18, 2013. Page 7

## **Syphilis is Preventable and Treatable. - - Get smart. Get checked. Get treated.**

Since syphilis symptoms can easily be mistaken for other illnesses, the only way to be sure you don't have syphilis is to get tested.

Got a new partner? Got more than one partner? Then get checked for STDs at least every six months. And use condoms consistently for oral, anal and vaginal sex.

### **First Signs of Syphilis**

- Look for an open sore in the genital area (penis/testicles or vagina, and anus) or in the mouth that is painless. It can last for 1 to 3 weeks and go away without medicine.
- The sore may be in the vagina or rectum and won't be noticeable.

### **Second Signs of Syphilis**

- Look for a rash that does not itch on the palms of the hands, the bottoms of your feet, or on your stomach or chest. The rash may spread across your body.
- Flat patches, small bumps or warts on your genitals. Sometimes these patches are reddish brown or red.
- Swollen glands in your neck, groin, or next to your armpits.
- Fever, sore throat, head and muscle aches, fatigue similar to a bad cold or flu.
- Hair may begin to fall out of your head.
- Even if these symptoms go away, you are still infective to others.

### **Late and Latent Stages**

- After the symptoms from primary and secondary stages occur, symptoms may not appear for years, but syphilis remains in the body. This stage may occur within the first 12 months after the initial infection (early latent syphilis) or may begin more than a year after.
- Major body systems, such as the brain and nervous system, heart and cardiovascular system, liver and hepatic system, and muscle systems can be severely damaged by syphilis.
- In as early as ten years, untreated syphilis can lead to neurosyphilis, a condition where dementia, loss of muscle coordination, numbness, blindness and even death can occur. In persons with HIV, neurosyphilis can occur as early as three years after the initial infection.

(Information adapted from the Centers for Disease Control and Prevention STD Fact Sheet, Chicago Department of Public Health – "Syphilis is Back" postcard, and the Columbus Public Health Department.)

### **Testing Centers**

Anyone seeking HIV and other STD testing only needs to go to <http://www.hivtest.org/>  
Local testing centers include the two Cleveland Department of Public Health clinics (\*J. Glen Smith (216)249-4100, \*McCafferty Center (216)651-5005), Cuyahoga County Board of Health \*clinic (216)201-2001 x1330, Care Alliance (Downtown: (216)781-6724, Woodland Ave: (216)923-5000, W. 25<sup>th</sup> St: (216)619-5571), Free Clinic of Greater Cleveland (216)721-4010, Northeast Ohio Neighborhood Health Services - NEON clinics (216-539-2861) other clinics, local emergency rooms and hospitals. The three public health clinics (\*) offer Title X family planning/reproductive health care that also does STD/HIV testing. Eligible persons may receive free screening. Call ahead for times.

Your risk of getting HIV from an infected partner is much higher if you already have a STD. HIV positive persons put their partner at risk when safe sex practices aren't followed.

**Get smart. Get checked. Get treated.**



## Notes for the Medical Community

In this report, we present evidence that the syphilis outbreak that began in 2007 continues to occur predominantly among 1) males who have sex with other males and bisexual males, and 2) among males and females reporting heterosexual sex, 80% of whom were African American. Anonymous sex partners, a history of past STDs, use of the internet to find partners, and inconsistent condom use are all associated with this outbreak. Symptoms reported at presentation (page 7 of report) and inconsistent condom use most cases regardless of sexual behavior or orientation.

In 2012, 60% of all primary and secondary cases were under age 35 years. Over half of all males presenting with primary or secondary syphilis were HIV positive. Serosorting was reported among HIV-positive men who have sex with men, and bisexual men.

Females are being diagnosed much later than men, and **congenital syphilis cases continue to occur in our community**. Females may be missing the symptoms and not seeking medical treatment. Anal lesions were reported among males and females. While it is more likely that men who have sex with other men may be infected rectally, female cases are reporting rectal sex and may not present until in the secondary or late stages of syphilis. Three pregnant females were diagnosed and treated within the first trimester. However, data used in this report was not detailed to determine whether their partner(s) was (were) treated.

**The three area public health departments urge medical providers to screen all sexually active patients for syphilis and to adhere to the Centers for Disease Control and Prevention STD Treatment Guidelines:**

- **Any patient presenting with a sexually transmitted disease (STD) should be screened for syphilis by obtaining a serum RPR.**
- **All HIV positive patients should have an annual screening RPR. More frequent screening (every 3 to 6 months) is also recommended for those with high-risk behaviors such as having multiple sex partners, engaging in any unprotected intercourse and/or illicit drug use.**
- **All pregnant women should have a screening RPR obtained at first prenatal visit and again at 28 weeks gestation, and during the third trimester if the patient has any high-risk behaviors. Any woman who delivers without prenatal care needs to have an RPR drawn at delivery.**

We require your support in order to help make Cuyahoga County a healthier community. Please contact CDPH's Partner Notification and Referral Services at **(216)664-7080** for further information on syphilis or to make a communicable disease referral.

Any concerns should be addressed with the community's public health medical directors, Dr. Ann Avery at (216) 778-7828 or Dr. Scott Frank at (216) 368-3725. Each physician has an academic appointment with Case Western Reserve University School of Medicine.

