Syphilis Outbreak Report, 2010

Public Health Surveillance Report for Cleveland and Cuyahoga County: August 30, 2011

An outbreak of syphilis began in mid-2007 in Cuyahoga County and continues today.

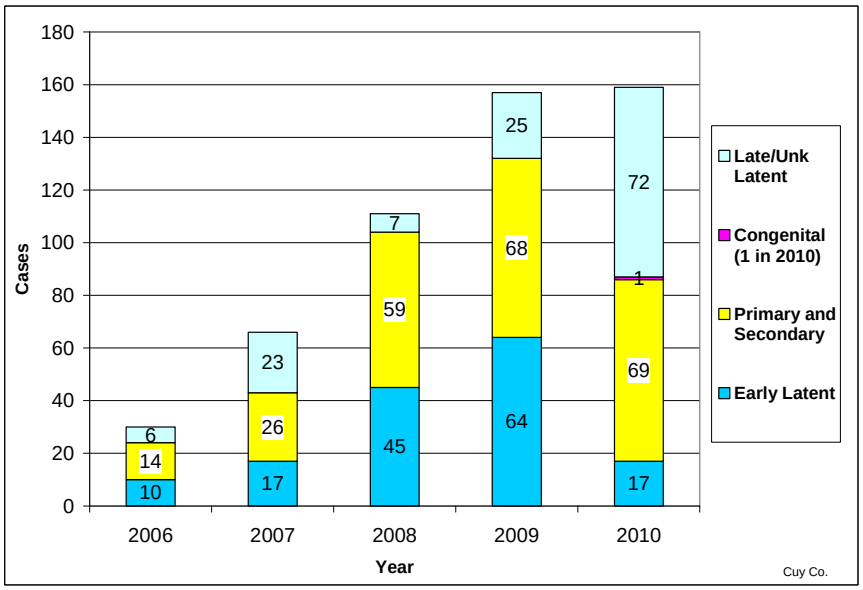
Total syphilis is defined as all new syphilis cases reported during the year in any of the following phases:

- 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.

Total syphilis levels remain nearly unchanged from 2009 to 2010 for Cuyahoga County, where respectively, 158 and 159 residents, were diagnosed. See Figure 1. Levels increased slightly among Cleveland residents, from 125 to 131 cases, respectively. Co-infection with HIV continues to be a major issue, where almost half of all persons diagnosed with primary and secondary syphilis were HIV positive. In addition, there was a 253% increase in primary and secondary syphilis reported among Black males age 13-34 years. HIV/AIDS incidence has been increasing among these young men since 2008.

Figure 1. Total syphilis cases for Cuyahoga County, 2006-2010, by stages



*Preliminary data from the Ohio Department of Health ODRS (Ohio Disease Reporting System) as of Aug. 17, 2011.

Surveillance performed in cooperation with the Cuyahoga County Board of Health, Parma, Ohio.
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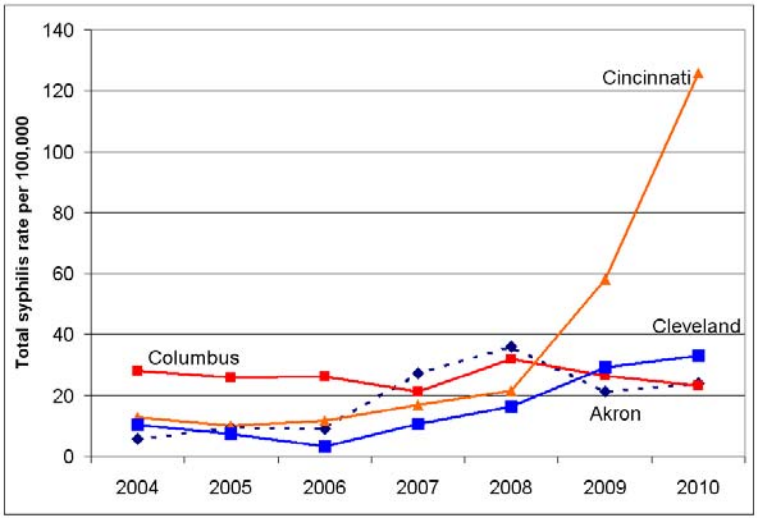
Rates increased slightly from 12.38 to 12.42 cases per 100,000 county population. The total number and proportion of acute syphilis (primary and secondary stages) are relatively unchanged over the two years: from 68 to 69 cases for the county (Fig. 1), and from 52 to 53 cases for Cleveland.

Cleveland compared to Ohio cities

See Figure 2. Total syphilis rates for Cleveland have been steadily increasing since 2007, exceeding that for Akron and Columbus for the past two years. Cleveland's rate for 2010, 33.0 cases per 100,000, is now at least 36% greater than that for Akron and Columbus.

However, syphilis increased exponentially in Cincinnati, having the highest total syphilis rate across the state (125.8 cases per 100,000), four times greater than that of Cleveland and five times greater than that for Columbus (23.1 cases per 100,000) and Akron (24.1 cases per 100,000).

Figure 2. Total syphilis rates per 100,000 selected cities in Ohio, 2004-2010



Congenital Syphilis

Regretfully, there was one case of congenital syphilis in 2010, the first case since this outbreak began. 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

Forty percent of all 58 females diagnosed with syphilis during 2009 and 2010 presented with primary or secondary stages of syphilis. One female was HIV positive. Eight were pregnant when diagnosed. Median term of pregnancy was 16 weeks, diagnosed as early as seven weeks and late as 36 weeks into the pregnancy.

The female who delivered an infant with congenital syphilis was diagnosed with early latent syphilis. She did not have any prenatal care.

For clinicians involved in prenatal care, obstetrics, gynecology and midwifery, this case highlights the need for prenatal care along with syphilis screening for mothers.

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Populations At Highest Risk

The outbreak is dominated by two populations define on risk activity (not sexual orientation):

1) men who have sex with men (MSM) and bisexual men, and
2) men and women having high-risk heterosexual (HRH) sex.

In the past two years, MSM/Bisexual males represented half (49.7%) of all syphilis reports. Males and females reporting high-risk heterosexual sex represented 21.8% and 18.4%, respectively (40.2%). The remaining cases reported were males whose risk was unknown (9.8%) and one congenital case reported in 2010 (0.3%).

Co-infection with HIV

Nearly half (47.8%, 33/69) of persons with primary or secondary syphilis were HIV positive. And for primary and secondary diagnoses in 2009-2010, almost two-thirds (61.4%) of MSM/Bisexual males were HIV positive. 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.

Public health workers strongly encourage HIV testing for all HIV-negative persons diagnosed with primary or secondary syphilis, and their sexual partners who may have been exposed (unless already HIV positive).

Thirty-five of the sixty-nine persons diagnosed in 2010 with primary and secondary syphilis were tested for HIV. Seven of the thirty-five (20%) were newly diagnosed with HIV; three had never been tested HIV, and another three tested negative in past HIV screening. Currently, 1.0 percent of persons screened for HIV at the two Cleveland Department of Public Health clinics were found to be 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 1 showed that the number of P&S cases remain nearly unchanged at 68 and 69 cases, respectively, for 2009 and 2010 for Cuyahoga County. Rates were 5.33 to 5.39 cases per 100,000, respectively (Table 2.)

Table 2. Primary and Secondary Syphilis for Cuyahoga County for 2009 and 2010, as a percent of cases, unless noted. Data for Cleveland cases are in the shaded columns.

	Cases (n)	County rate**	Cleveland residents	Cleveland rate**	Male	Race*			Ethnicity
						Black	White	Other	Hispanic
2009	**68**	5.33	73.5%	11.59	79.4%	61.7%	36.8%	1.5%	4.4%
2010	**69**	5.39	75.4%	13.10	91.3%	73.9%	26.1%	0%	4.4%

*** Race only, not including Hispanic ethnicity. **rate per 100,000 population**

	Age at diagnosis (years)					Risk behavior		
	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%

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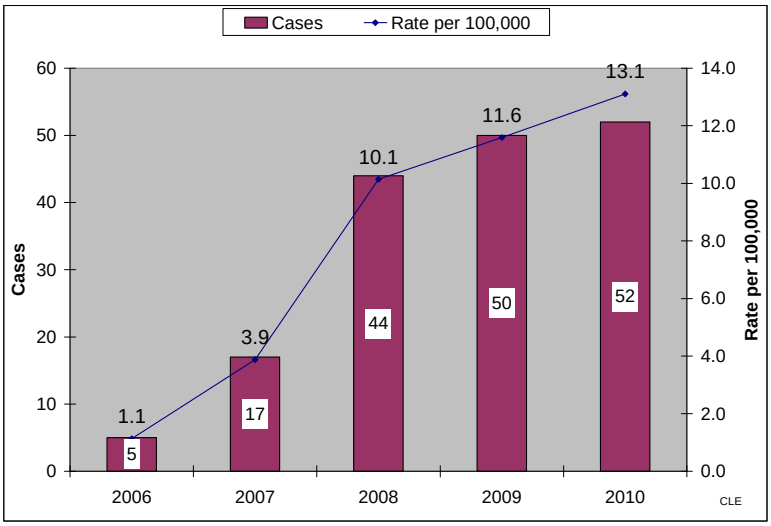
Figure 3 illustrates that case counts for Cleveland increased by only two cases from 2009 to 2010. However, the loss of population changes the denominator when calculating rates. This caused P&S rates to increase by 13.0% from 11.6 to 13.1 per 100,000 city population. Rates are illustrated in Figure 3 in the bold line.

Figure 3. Primary and secondary syphilis cases (bars) and rates per 100,000 (line) for Cleveland, 2006-2010



Demographics and Trends for Primary and Secondary Syphilis

In general, more of the primary and secondary (P&S) syphilis diagnoses in 2010 for Cuyahoga County were younger, male and Black/African American than in any year of this outbreak.

Table 2 showed that males represented 91.3% of P&S syphilis diagnoses in 2010, a statistically significant increase from 79.4% in 2009. Cases among younger adults age 13-34 years jumped from 53.3% in 2009 to 75.4% in 2010. For 2010, the youngest person diagnosed with primary or secondary syphilis was fifteen years of age.

Primary and secondary syphilis cases among Black/African American males age 13-34 years jumped from 15 in 2009 to 38 in 2010, a 253% increase. In both years, at least 40% of these young men were HIV-positive.

Across both years, half (50.4%) of all males with primary and secondary syphilis were HIV-positive.

Other Risky Behaviors Associated with Syphilis Transmission

Among primary and secondary cases reported in 2010,

- Nearly twice as many MSM/Bisexual males had a history of STD infections than males and females reporting high risk heterosexual (HRH) sex (36.7% vs. 20.0%)
- Twice as many (73% of) MSM/Bisexual males had insertive sex with an anonymous partner in the past 12 months compared to 37% of HRH males and females.
- Internet trolling for anonymous partners in the past 12 months associated with risky sexual activity was reported by 34.9% of MSM/Bi sexual males and by 10.5% of HRH males and females.

- Alcohol intoxication (>5 drinks at one time) in the past 12 months associated with risky sexual activity was reported by 33.3% of MSM/Bi sexual males and 10.5% of HRH males and females.
- Marijuana use was nearly the same for at-risk groups (16.3%, MSM/Bi males, 15% HRH males and females).
- Illicit drug use was rare. Crack cocaine use was reported by only one person in each at-risk group. Methamphetamine use was reported by only one MSM/Bisexual male. None reported heroin, amyl nitrate use.

Condom use

Table 3 shows condom use among the two at-risk groups, for 2009 and 2010.

Despite moderate adherence to using condoms for anal sex among MSM/Bi males, adherence with condoms for oral sex was poor but higher than among those diagnosed as heterosexual males and females.

Among this latter group, condom use improved slightly between years. In 2010, 84.2% reported sometimes or always using condoms for vaginal sex in 2010 compared to 65.2% in 2009 (not a statistically significant change).

Table 3. Condom use (%) among Cuyahoga County residents diagnosed with primary or secondary syphilis in 2009 and 2010, by risk behavior group (not sexual orientation)

Behavior associated with risk transmission	MSM/Bisexual males		Males/Females: Heterosexual	
	2009	2010	2009	2010
Condom use for anal sex			(of only 8)	(of only 4)
- always	39.5	27.3	12.5	0
- sometimes	50.0	61.4	25.0	75
- never	10.5	11.4	62.5	25
Condom use for vaginal sex	N/A	N/A		
- always			4.3	5.3
- sometimes			60.9	78.9
- never			34.8	15.8
Condom use for oral sex				
- always	10.8	0	0	0
- sometimes	51.4	43.2	21.7	50
- never	37.8	56.8	78.3	50

Presentation at diagnosis of Primary/Secondary Syphilis

Of those reporting symptoms, one third of MSM/Bisexual males presented with chancre sores primarily on the penis. The remainder presented with primary sores on the anus or mouth/oral cavity.

Two-thirds presented with a generalized rash on their extremities (60%), torso (30%) or scrotum (10%).

Regardless of risk behavior, nearly 6 in every 10 cases presented with a generalized rash, and the remainder with a primary sore(s). Similar to MSM/Bi males presenting with a rash, 69% of HRH males

and females reported a rash on the extremities, 31% on the torso. All primary sores among HRH males and females were on the genitals and not in the oral cavity.

Early Latent Syphilis

Figure 1 revealed a large decrease in the number of persons diagnosed with early latent syphilis, a stage of syphilis that 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.

The large increase in cases for 2010 may be due to a change in case definitions between early and late latent syphilis by the CDC and followed by the Ohio Department of Health. These cases are being reviewed by public health officials.

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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 the first (primary) and second(ary) 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, 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. 25th St: (216)619-5571), Free Clinic of Greater Cleveland (216)721-4010, 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.

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Notes for the Medical Community

This syphilis outbreak has gone unabated in our area since 2007. Last year saw its first congenital syphilis case due to a female with early latent syphilis (estimated duration < 1 year) who had neither prenatal care nor syphilis testing prior to birthing her infected infant.

In this report, we present evidence that syphilis is occurring predominantly among 1) males who have sex with other males and bisexual males, and 2) among males and females reporting heterosexual sex, nearly 90% 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 5 of report) and inconsistent condom use among men who have sex with other men suggest that some men are being infected rectally and are not presenting until in the secondary or later stages of syphilis. Half of all males presenting with primary or secondary syphilis were HIV positive.

In addition, a 253% increase in syphilis cases among young black/African American males age 13-34 years was noted, with HIV co-infection not uncommon. STD prevalence is already highest among black/African American youth and young adults age 13-34; over 70% of all routinely reported Chlamydia and gonorrhea cases in Cuyahoga County occur among this group.

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, Dr. Anna Mandalakas at (216) 201-2001, or Dr. Scott Frank at (216) 368-3725. Each physician has an academic appointment with Case Western Reserve University School of Medicine.

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