2012 STD Surveillance Report: Chlamydia and Gonorrhea

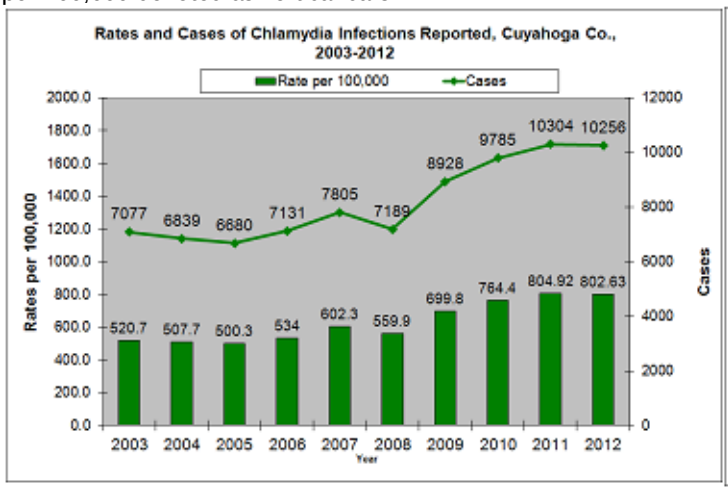
A Public Health Surveillance Report for Cuyahoga County and Cleveland, released Aug. 5, 2013

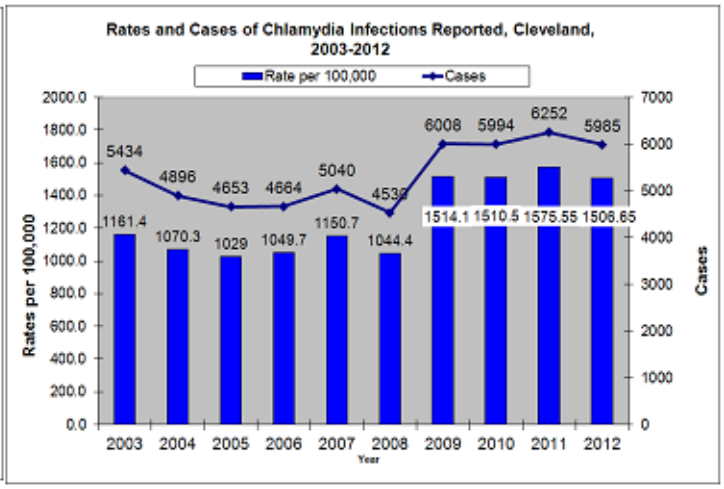
This report describes cases of Chlamydia and gonorrhea infections reported to public health officials. Results for municipalities may differ from those published by Ohio Department of Health. Surveillance data are re-analyzed to identify the residence (municipality or Cleveland neighborhood) of those affected. HIV/AIDS and Syphilis will be reported elsewhere.

2012 Chlamydia prevalence rates decreased for Cuyahoga County and Cleveland.

- Cuyahoga County: 10,256 case reports of Chlamydia cases, a rate of 802.63 per 100,000 residents
  - **0.3% rate decrease from 2011**. See Figure 1, left image.
- Cleveland: 5,985 case reports, a rate of 1,506.65 cases per 100,000 residents
  - **4.4% rate decrease from 2011**. See Figure 1, right image.

Figure 1. Chlamydia prevalence for Cuyahoga County (left) and Cleveland (right). Case counts denoted as lines, with rates per 100,000 denoted as vertical bars.

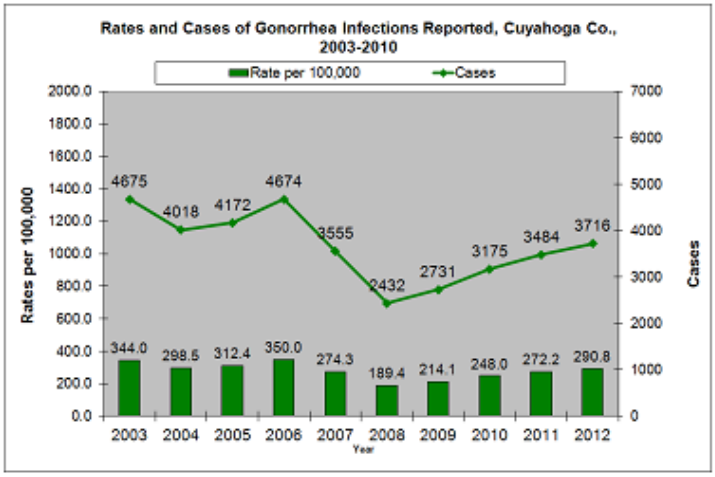


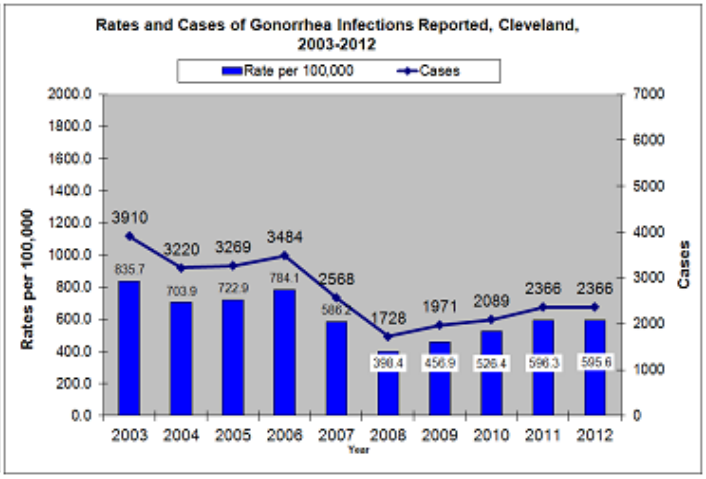


Gonorrhea prevalence rates increased 6.9% in the county but decreased slightly in Cleveland.

- Cuyahoga County: 3,716 case reports for a rate of 290.81 cases per 100,000
  - **6.9% rate increase from 2011**. See Figure 2, left image.
- Cleveland: 2,366 case reports, the same case count as in 2011, but a rate of 595.61 per 100,000
  - **0.1% rate decrease from 2011**. See Figure 2, right image.

Figure 2. Gonorrhea prevalence for Cuyahoga County (left) and Cleveland (right)





*Preliminary data from the Ohio Department of Health ODRS (Ohio Disease Reporting System) as of June 17, 2013. Surveillance was performed in cooperation with the Cuyahoga County Board of Health, Cleveland Department of Public Health, and the Shaker Heights Health Department. This report was prepared by Cleveland Department of Public Health Office of Biostatistics, 75 Erieview Plaza, 3rd Floor, Cleveland, OH 44114 216-664-4353 www.clevelandhealth.org

Chlamydia case demographics

Case demographics for Chlamydia cases reported for **Cuyahoga County** residents are shown in **Figure 3**.

Across the county, **39.4% of all Chlamydia cases were to teens age 15 to 19** years for a rate of 4,505.07 cases per 100,000, a 5.7% decrease in rates since 2011 levels. This is the first time since 2002 that this percentage dipped below 40%.

A rate of 4,505.07 cases per 100,000 can be interpreted as follows, "4.5% of Cuyahoga County teens age 15 to 19 in 2012 were reported as having a Chlamydial infection, ignoring repeat infections." Another interpretation is that one in every 22 teens age 15 to 19 (i.e. 1/0.0450507) in Cuyahoga County were reported with Chlamydia, ignoring repeated infections.

Similar results are observed among **young adults age 20 to 24**. Another 36.3% of Chlamydia cases were reported among youth age 20 to 24 years, at a rate of 4,768.91 cases per 100,000 persons in this age group. This reflects 4.7% rate increase over 2011 levels for this age group (4,554.80 per 100,000 persons, not shown here).

Overall, 71.6% percent of reported cases were among **females**.

Race/ethnicity: Nearly two-thirds (63.5%) of reported cases in Cuyahoga County were **Black/African American** at a rate of 1,742.56 per 100,000. This rate is 5.2 greater than observed for **Hispanic cases** (331.96 per 100,000) and 10.2 times greater than observed for **White non-Hispanic cases** (169.88 per 100,000). Compared to 2010 and 2011, 63.5% and 67.2% of Chlamydia reported cases were Black/African American.

We ask readers to be cautious when comparing rates by race and ethnicity between 2011 and 2012 as shown in Figure 3, column "*% change in rates*". We observed a large increase in the number of persons self-identifying as multiracial. The percent change in rates may be a direct cause of this change in reporting and identification among cases. Self-identification with multiple races is becoming much more common among survey respondents, health care providers and other federal agencies. (See Census, 2012)

Case demographics for Chlamydia cases reported for **Cleveland** residents are shown in **Figure 4**. Well over half (58.3%) of all Chlamydia cases were attributed to Cleveland residents based on their residence at the time of diagnosis. Last year, 60.7% of Chlamydia cases were attributed to Cleveland. This proportion for 2012 levels is the lowest level reported in over twenty years.

In other words, we are observing an increasing trend of Chlamydia cases being reported in county municipalities other than Cleveland.

Also, these 5,985 cases we are reporting for Cleveland is much lower than the figure reported by the Ohio Department of Health (7,524 cases, see reference for ODH, 2013). We reexamined all addresses, cities, and zip codes provided in the patient reports provided to ODH to determine the municipality, Cleveland neighborhood (statistical planning area) and Cuyahoga County district. In effect, over 1,500 records incorrectly noted the city of residence as 'Cleveland'. Our data represents, we believe, as the most accurate accounting of Chlamydia and gonorrhea events reported for Cleveland and Cuyahoga County municipalities.

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Figure 3. Demographics of STD Cases for Cuyahoga County, 2012

	STD diagnoses: Cases, Percent, *Rate per 100,000, Change in rates from 2011							
	Chlamydia infection				Gonococcal infection			
By Age	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
0-9	10	0.1	6.72	*-76.3%*	3	0.1	2.02	--
10-14	201	2.0	236.01	*0.4%*	49	1.3	57.54	*-0.1%*
15-19	4,041	39.4	4,505.07	*-5.7%*	1,227	33.0	1,367.91	*-2.5%*
20-24	3,726	36.3	4,768.91	*4.7%*	1,327	35.7	1,698.43	*8.4%*
25-29	1,266	12.3	1,539.13	*-2.0%*	532	14.3	646.78	*10.5%*
30-34	513	5.0	674.18	*3.9%*	257	6.9	337.74	*16.7%*
35-39	232	2.3	305.64	*11.8%*	123	3.3	162.04	*36.9%*
40-44	126	1.2	152.85	*21.7%*	85	2.3	103.11	*37.7%*
45-54	105	1.0	53.60	*37.3%*	89	2.4	45.43	*42.2%*
55-64	28	0.3	16.98	*74.2%*	22	0.6	13.34	*36.8%*
65+	8	0.1	4.03	--	2	0.1	1.01	--
	Chlamydia infection				Gonococcal infection			
By Sex	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
Female	7,347	71.6	1,094.36	*-2.1%*	2,124	57.2	316.38	*1.2%*
Male	2,909	28.4	479.68	*4.8%*	1,592	42.8	262.52	*15.5%*
	Chlamydia infection				Gonococcal infection			
By Race/Ethnicity	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
Black/non-Hisp	6,508	63.5	1,742.56	*-5.6%*	2,741	73.8	733.92	*2.4%*
Hispanic, any race(s)	204	2.0	331.96	*-3.1%*	58	1.6	94.38	*13.4%*
Asian/Pac. Isl./non-Hisp	14	0.1	42.28	*-13.2%*	4	0.1	12.08	*296.7%*
Multirace(s)/non-Hisp	238	2.3	N/A	N/A	74	2.0	N/A	N/A
Unknown/non-Hisp	1,958	19.1	N/A	N/A	583	15.7	N/A	N/A
White/non-Hisp	1,334	13.0	169.88	*1.8%*	256	6.9	32.60	*17.0%*
All	**10,256**	**100**	**802.63**	***-0.3%***	**3,716**	**100**	**290.81**	***6.9%***

**** percent change in rates from 2011 levels, suppressed (--) when there are 5 or less cases in either year**

***Rates used 2012 American Community Survey 3-yr. estimates for population denominators. Rates are adjusted to the population size, so the 6,508 Chlamydia cases among Black/African Americans represent 1,742.56 cases in 100,000, or about 5 per 300 Black/African Americans. Rates can then be compared directly across groups and areas. Also, rates help us see how a disease affects some groups more than others. So, while there are 28 times more Chlamydia cases among Blacks than Hispanics, (6,508/204=27.6), the rate for Black residents is only 5.0 times higher than for Hispanic residents. This is because the population of Hispanics in Cuyahoga County is so much smaller.**

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Figure 4. Demographics of STD Cases for Cleveland, 2012

	STD diagnoses: Cases, Percent, *Rate per 100,000, Change in rates from 2011							
	Chlamydia infection				Gonococcal infection			
By Age	Cases	Percent	Rate*	% change in rates**	Cases	Percent	Rate*	% change in rates**
0-9	5	0.1	9.65	--	2	0.1	3.86	--
10-14	117	2.0	452.73	-6.3%	26	1.1	100.61	-14.7%
15-19	2,348	39.2	7,838.42	-8.7%	793	33.5	2,647.30	-6.2%
20-24	2,121	35.4	7,360.75	4.1%	847	35.8	2,939.44	6.7%
25-29	778	13	2,624.92	-3.1%	345	14.6	1,164.01	3.3%
30-34	317	5.3	1,273.09	7.1%	164	6.9	658.63	7.3%
35-39	135	2.3	552.98	5.6%	67	2.8	274.44	32.0%
40-44	77	1.3	311.65	39.4%	47	2.0	190.23	18.3%
45-54	65	1.1	108.64	41.1%	63	2.7	105.30	57.2%
55-64	14	0.2	29.29	19.0%	11	0.5	23.01	-6.5%
65+	8	0.1	16.16	--	1	<0.1	2.02	--
	Chlamydia infection				Gonococcal infection			
By Sex	Cases	Percent	Rate*	% change in rates**	Cases	Percent	Rate*	% change in rates**
Female	4,246	70.9	2,026.21	-8.1%	1,360	57.5	649.00	-7.1%
Male	1,739	29.1	926.55	3.8%	1,006	42.5	536.00	10.5%
	Chlamydia infection				Gonococcal infection			
By Race/Ethnicity	Cases	Percent	Rate*	% change in rates**	Cases	Percent	Rate*	% change in rates**
Black, non-Hisp	4,058	67.8	1,958.97	-10.0%	1,787	75.5	862.66	-4.8%
Hispanic, any race(s)	147	2.5	389.48	-3.2%	44	1.9	116.58	21.3%
Asian/Pac. Isl, non-Hisp	6	0.1	98.72	-54.8%	2	0.1	32.91	--
Multirace, non-Hisp	138	2.3	N/A	N/A	44	1.9	N/A	N/A
Unknown	1,118	18.7	N/A	N/A	365	15.4	N/A	N/A
White, non-Hisp	518	8.7	377.06	-12.2%	124	5.2	90.26	-5.7%
All	**5,985**	**100**	**1,506.65**	**-4.4%**	**2,366**	**100**	**595.61**	**-0.1%**

**** percent change in rates from 2011 levels, suppressed (--) when there are 5 or less cases in either year.**
***Rates used 2012 American Community Survey 3-yr. estimates for population denominators. Rates are adjusted to the population size.**

Figure 4 shows that there were 2,348 Chlamydia cases among Cleveland teens age 15 to 19 years of age reported to public health, for a rate of 7,838.42 cases per 100,000. Similarly, 2,121 Chlamydia cases were reported among Cleveland young adults age 20 to 24 years of age, for a rate of 7,360.75 cases per 100,000. **Also, 7.8%, or one in thirteen (1/0.0783842) Cleveland teens age 15 to 19 were reported to have Chlamydia in 2011, not adjusting for repeated infections.**

Likewise, one in fourteen Cleveland young adults age 20 to 24 had Chlamydia in 2012. The proportion of cases by age and sex is similar between Cuyahoga County and Cleveland, but the proportion and rate of Chlamydia among African Americans is higher in Cleveland than for the county. **Taken together, three in every four (74.6%) of all Chlamydia cases reported in Cleveland were to teens and young adults.**

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Co-infections

Of the 10,256 cases of Chlamydia reported in Cuyahoga County, 1,263 cases were co-infections with *Neiserria gonorrhoea*. This implies that 12.3%, or one in every eight cases of Chlamydia reported to public health was complicated by an existing gonorrhea infection. This can be seen at the bottom of **Figure 5**.

Figure 5. Chlamydia cases involving co-infection with gonorrhea (*N. gonorrhoea*) for Cuyahoga County, 2012

	Chlamydia infections as co-infections with Gonorrhea			
By Age	**Cases, Chlamydia infection only**	**Cases, co-infection (Chlam. with Gon. present)**	**Total Chlamydia cases**	**Percent as co-infections**
0-9	9	1	10	10.0%
10-14	175	26	201	12.9%
15-19	3,477	564	4,041	14.0%
20-24	3,289	437	3,726	11.7%
25-29	1,124	142	1,266	11.2%
30-34	465	48	513	9.4%
35-39	215	17	232	7.3%
40-44	115	11	126	8.7%
45-54	93	12	105	11.4%
55-64	24	4	28	14.3%
65+	7	1	8	12.5%

By Sex	**Cases, Chlamydia infection only**	**Cases, co-infection (Chlam. with Gon. present)**	**Total Chlamydia cases**	**Percent as co-infections**
Female	6,575	772	7,347	10.5%
Male	2,418	491	2,909	16.9%

By Race/Ethnicity	**Cases, Chlamydia infection only**	**Cases, co-infection (Chlam. with Gon. present)**	**Total Chlamydia cases**	**Percent as co-infections**
Black/non-Hisp	5,564	944	6,508	14.5%
Hispanic, any race(s)	184	20	204	9.8%
Asian/Pac. Isl./non-Hisp	13	1	14	7.1%
Multirace(s)/non-Hisp	209	29	238	12.2%
Unknown/non-Hisp	1,770	188	1,958	9.6%
White/non-Hisp	1,253	81	1,334	6.1%
All	**8,993**	**1,263**	**10,256**	**12.3%**

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Co-infection was most common among males, occurring in 16.9% of all Chlamydia cases reported; among Black/African Americans (14.5%), those reporting multiple races (12.2%), persons age 55 to 64 years (14.3%) and teens age 15 to 19 (14.0%).

We do not have information on treatment or transmission history for each patient. Therefore, we cannot determine if transmission was due to one or multiple partners. Also, the data obtained from the Ohio Department of Health did not include other potential co-infections, including HIV, Syphilis, genital herpes and human papilloma virus. Genital herpes (non-congenital) and HPV infections are not reported to public health. See http://www.odh.ohio.gov/pdf/idcm/intro1.pdf

Among Chlamydia cases in **Cleveland**, one in every five (21.1%) reported Chlamydia cases were co-infections with gonorrhea.

Geographic distribution

Figures (tables) 6 and 7 list Chlamydia and gonorrhea case counts and rates per 100,000 population of Cuyahoga County municipalities (Fig. 6) and Cleveland neighborhoods (Fig. 7). These Cleveland neighborhoods were newly recast in 2013 by the Cleveland City Planning Office in 2012.

Rates are illustrated as maps in **Figures (maps) 8 and 9**. Respectively, these maps display Chlamydia rates per 100,000 across Cuyahoga County municipalities and Cleveland neighborhoods (i.e. statistical planning areas). Darker shading reflected higher rates. For each STD, maps use the same color and rate scale.

East Cleveland has the highest Chlamydia prevalence for the second straight year with nearly 2% of its population reporting as having Chlamydia in 2012 (rate of 1,936.53 cases per 100,000).

Warrensville Heights had a similar prevalence (1.8%, or 1,811.33 cases per 100,000) after a 20.1% increase in prevalence from 2011 levels.

The municipalities of **Cleveland, Maple Heights, Newburgh Heights, Euclid, Bedford, Bedford Heights and Cleveland Heights** reported Chlamydia rates above 900 per 100,000 (0.9%) and double-digit percentage increases from 2011 levels. Among municipalities having at least 0.5% prevalence, rates decreased for **East Cleveland, the City of Cleveland, Garfield Heights, South Euclid and North Randall.**

Across Cleveland neighborhoods, 10 of 36 reported Chlamydia prevalence rates of 2.0% (2,000 cases per 100,000) or greater, with rates exceeding that of East Cleveland. **Figure (map) 9** shows a pattern of high prevalence across the City's eastern neighborhoods, similar to 2011 results, with high rates east of W. 117th St. on the West Side.

Figure 12 tabulates highest Chlamydia prevalence rates in **Cleveland wards** 5, 8, and 7, having rates of 2.0% or greater; this list is unchanged from 2011. Also similar to 2011 results, nine Cleveland wards have rates higher than the average rate for Cleveland (overall, 1,506 cases per 100,000).

Figure 13 tabulates highest Chlamydia prevalence rates in **Cuyahoga County Council Districts** 8, 7, 9, 10, and 3 as having Chlamydia rates higher than the county average, 802.63 cases per 100,000 population.

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Figure 6 (sorted by Chlamydia rates). Table of 2012 Chlamydia and gonorrhea case counts and rates per 100,000, for municipalities in Cuyahoga County. The percent of all cases reported for Cuyahoga County is provided for both infections.

	STD diagnoses: Cases, Percent, *Rate per 100,000, **Change in rates from 2011							
	Chlamydia infection				Gonococcal infection			
	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
East Cleveland	346	3.4	1,936.53	*-6.2%*	212	5.7	1,186.55	*47.2%*
Warrensville Heights	245	2.4	1,811.33	*20.1%*	85	2.3	628.42	*37.1%*
Cleveland	5985	58.4	1,506.65	*-4.4%*	2,366	63.7	595.61	*-0.1%*
Maple Heights	348	3.4	1,503.76	*24.7%*	120	3.2	518.54	*11.1%*
Newburgh Heights	27	0.3	1,245.96	*22.7%*	5	0.1	-1.00	--
Euclid	538	5.2	1,099.40	*12.6%*	202	5.4	412.78	*3.1%*
Bedford Heights	104	1	967.26	*3.0%*	33	0.9	306.92	*6.5%*
Bedford	123	1.2	940.51	*51.9%*	39	1	298.21	*50.0%*
Woodmere	8	0.1	927.00	*14.3%*	4	0.1	-1.00	--
Garfield Heights	266	2.6	922.23	*-16.1%*	88	2.4	305.10	*17.3%*
Cleveland Heights	424	4.1	919.46	*11.9%*	152	4.1	329.62	*34.5%*
Richmond Heights	88	0.9	835.63	*14.3%*	30	0.8	284.87	*42.9%*
South Euclid	172	1.7	773.14	*-8.0%*	53	1.4	238.23	*1.9%*
Shaker Heights	196	1.9	689.73	*2.6%*	57	1.5	200.58	*-1.7%*
North Randall	7	0.1	682.93	*-75.9%*	0	0	-1.00	--
Oakwood	23	0.2	627.22	*21.1%*	5	0.1	-1.00	--
Brooklyn	50	0.5	447.67	*22.0%*	11	0.3	98.49	*83.3%*
Lakewood	220	2.1	422.01	*1.4%*	64	1.7	122.77	*16.4%*
University Heights	50	0.5	367.86	*-7.4%*	13	0.3	95.64	*62.5%*
Brook Park	62	0.6	322.71	*26.5%*	12	0.3	62.46	*140.0%*
Mayfield Heights	60	0.6	313.27	*-14.3%*	12	0.3	62.65	*-29.4%*
Parma	226	2.2	276.87	*-1.3%*	31	0.8	37.98	*-13.9%*
Solon	63	0.6	270.03	*34.0%*	10	0.3	42.86	*100.0%*
Berea	46	0.4	257.83	*-11.5%*	9	0.2	50.45	*50.0%*
Parma Heights	49	0.5	236.68	*53.1%*	6	0.2	28.98	*0.0%*
Broadview Heights	43	0.4	221.65	*30.3%*	2	0.1	-1.00	--
Seven Hills	24	0.2	203.49	*50.0%*	1	0	-1.00	--
Pepper Pike	10	0.1	166.67	*233.3%*	1	0	-1.00	--
Fairview Park	28	0.3	166.36	*12.0%*	3	0.1	-1.00	--
Lyndhurst	23	0.2	163.85	*-14.8%*	1	0	-1.00	--
Olmsted	21	0.2	155.41	*16.7%*	4	0.1	-1.00	--
Olmsted Falls	14	0.1	155.14	*40.2%*	0	0	-1.00	--
North Olmsted	49	0.5	150.17	*-30.0%*	10	0.3	30.65	*150.0%*
North Royalton	44	0.4	144.53	*-26.7%*	5	0.1	-1.00	--
Strongsville	63	0.6	140.78	*37.0%*	14	0.4	31.28	*133.3%*

****Rate data are suppressed when case counts are 5 or less. In these cases, rate comparisons are suppressed (--).**

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Figure 6 (sorted, cont'd.)

	STD diagnoses: Cases, Percent, *Rate per 100,000, **Change in rates from 2011							
	Chlamydia infection				Gonococcal infection			
	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
Middleburg Heights	21	0.2	131.64	*-19.2%*	4	0.1	-1.00	--
Westlake	35	0.3	106.94	*6.1%*	7	0.2	21.39	*133.3%*
Rocky River	18	0.2	89.07	*-5.3%*	2	0.1	-1.00	--
Brecksville	11	0.1	80.55	*-26.7%*	1	0	-1.00	--
Bay Village	12	0.1	76.67	*0.0%*	4	0.1	-1.00	--
Beachwood	9	0.1	75.40	*-75.7%*	4	0.1	-1.00	--
Bentleyville	1	0	-1.00	--	0	0	-1.00	--
Bratenahl	3	0	-1.00	--	4	0.1	-1.00	--
Brooklyn Heights	2	0	-1.00	--	1	0	-1.00	--
Chagrin Falls	3	0	-1.00	--	0	0	-1.00	--
Cuyahoga Heights	1	0	-1.00	--	0	0	-1.00	--
Gates Mills	1	0	-1.00	--	0	0	-1.00	--
Glenwillow	5	0	-1.00	--	2	0.1	-1.00	--
Highland Heights	5	0	-1.00	--	1	0	-1.00	--
Highland Hills	4	0	-1.00	--	1	0	-1.00	--
Hunting Valley	0	0	-1.00	--	0	0	-1.00	--
Independence	5	0	-1.00	--	1	0	-1.00	--
Linndale	0	0	-1.00	--	0	0	-1.00	--
Mayfield	3	0	-1.00	--	1	0	-1.00	--
Moreland Hills	2	0	-1.00	--	1	0	-1.00	--
Orange	5	0	-1.00	--	5	0.1	-1.00	--
Valley View	4	0	-1.00	--	0	0	-1.00	--
Walton Hills	2	0	-1.00	--	0	0	-1.00	--
Unable to locate	59	0.6	N/A	*N/A*	17	0.5	N/A	*N/A*
All	**10256**	**100**	**802.63**	*-0.3%*	**3716**	**100**	**290.81**	*6.9%*

****Rate data are suppressed when case counts are 5 or less . Percent change are suppressed in these cases.**
Denominators for Cleveland neighborhoods (SPA) are from NEOCANDO Interactive Data System, Mandel School for Social Sciences, Case Western Reserve University and are based on the 2010 Census, except for Cleveland and Cuyahoga County that use the 2011 American Community Survey 3-year estimates.
Note: For 2011, Olmsted had 18 Chlamydia cases (rate, 133.21 per 100,000) and 3 gonorrhea cases (rate, 22.20per 100,000) and Olmsted Falls had 10 Chlamydia cases (rate, 110.66 per 100,000) and no gonorrhea cases. The 2011 STD Surveillance Report combined results and reported them as Olmsted Falls.

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Figure 7 (sorted by Chlamydia rates). Table of 2012 Chlamydia and gonorrhea case counts and rates for Cleveland neighborhoods (i.e. statistical planning areas).

	STD diagnoses: Cases, Percent, *Rate per 100,000					
	Chlamydia infection			Gonococcal infection		
	Cases	Percent	Rate*	Cases	Percent	Rate*
Central	357	6	2,901.02	142	6	1,153.91
Buckeye-Woodhill	175	2.9	2,628.85	68	2.9	1,021.49
Kinsman	176	2.9	2,518.93	84	3.6	1,202.22
Glenville	664	11.1	2,435.11	303	12.8	1,111.20
St.Clair-Superior	156	2.6	2,268.76	69	2.9	1,003.49
Fairfax	140	2.3	2,243.95	45	1.9	721.27
Collinwood-Nottingham	248	4.1	2,148.67	107	4.5	927.05
Union-Miles	401	6.7	2,110.08	150	6.3	789.31
Mount Pleasant	348	5.8	2,009.24	138	5.8	796.77
Hough	230	3.8	2,004.33	132	5.6	1,150.31
Lee-Seville	76	1.3	1,690.39	26	1.1	578.29
Clark-Fulton	138	2.3	1,614.44	54	2.3	631.74
Euclid-Green	89	1.5	1,608.53	36	1.5	650.64
Broadway-Slavic Village	334	5.6	1,488.97	160	6.8	713.28
Stockyards	151	2.5	1,455.82	38	1.6	366.37
Lee-Harvard	150	2.5	1,452.64	58	2.5	561.69
Brooklyn Centre	127	2.1	1,418.35	36	1.5	402.05
Cudell	129	2.2	1,388.89	58	2.5	624.46
Buckeye-Shaker Square	173	2.9	1,387.33	89	3.8	713.71
Detroit Shoreway	156	2.6	1,348.66	71	3	613.81
West Boulevard	242	4	1,281.24	67	2.8	354.72
North Shore Collinwood	183	3.1	1,160.58	77	3.3	488.33
Goodrich-Kirtland Pk	49	0.8	1,156.21	19	0.8	448.32
Ohio City	91	1.5	1,041.67	51	2.2	583.79
Cuyahoga Valley	10	0.2	1,032.31	1	0	--
Tremont	74	1.2	931.09	31	1.3	390.05
Bellaire-Puritas	112	1.9	838.01	17	0.7	127.20
Downtown	75	1.3	792.48	29	1.2	306.42
Jefferson	126	2.1	761.42	38	1.6	229.64
Edgewater	39	0.7	666.67	27	1.1	461.54
Old Brooklyn	191	3.2	596.71	52	2.2	162.45
Kamm's	136	2.3	540.32	17	0.7	67.54
University	42	0.7	530.30	17	0.7	214.65
Hopkins	0	0	0.00	1	0	--
Unable to locate	197	3.3	N/A	58	2.5	N/A
Cleveland (TOTAL)	5985	100	1,506.65	2366	100	595.61

****Rate data are suppressed when case counts are 5 or less(--).**

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Figure 8. Map of Chlamydia prevalence rates among municipalities for 2012. Darker shading reflects higher rates.

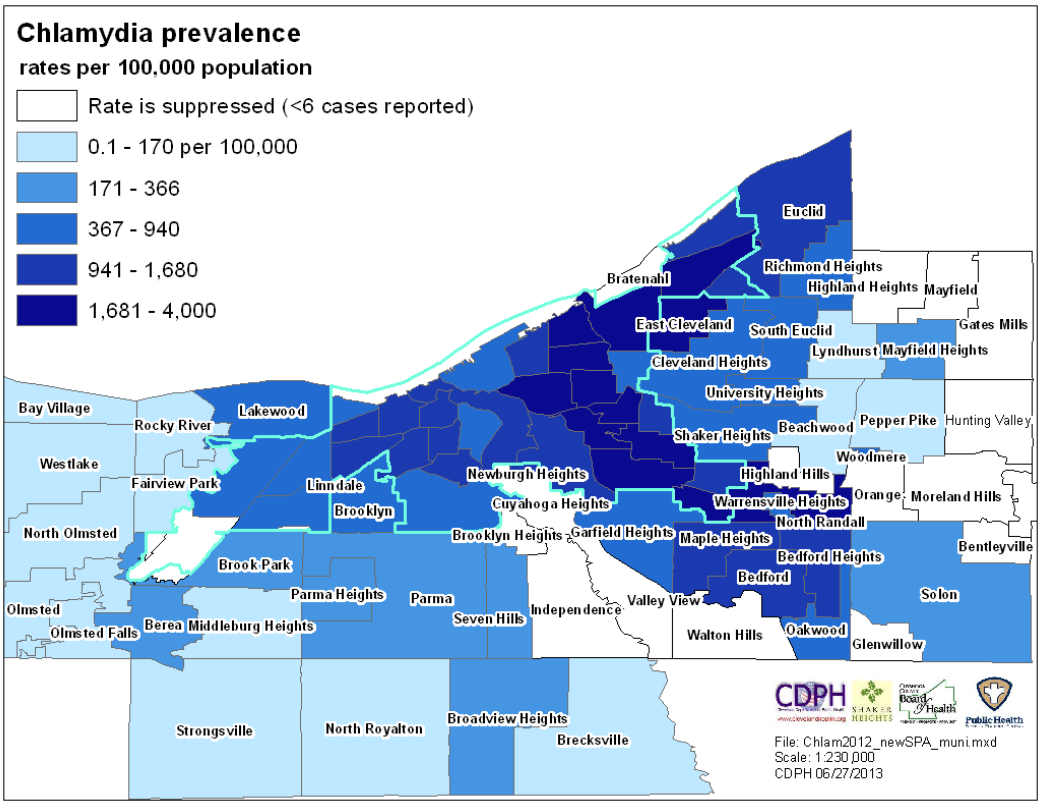
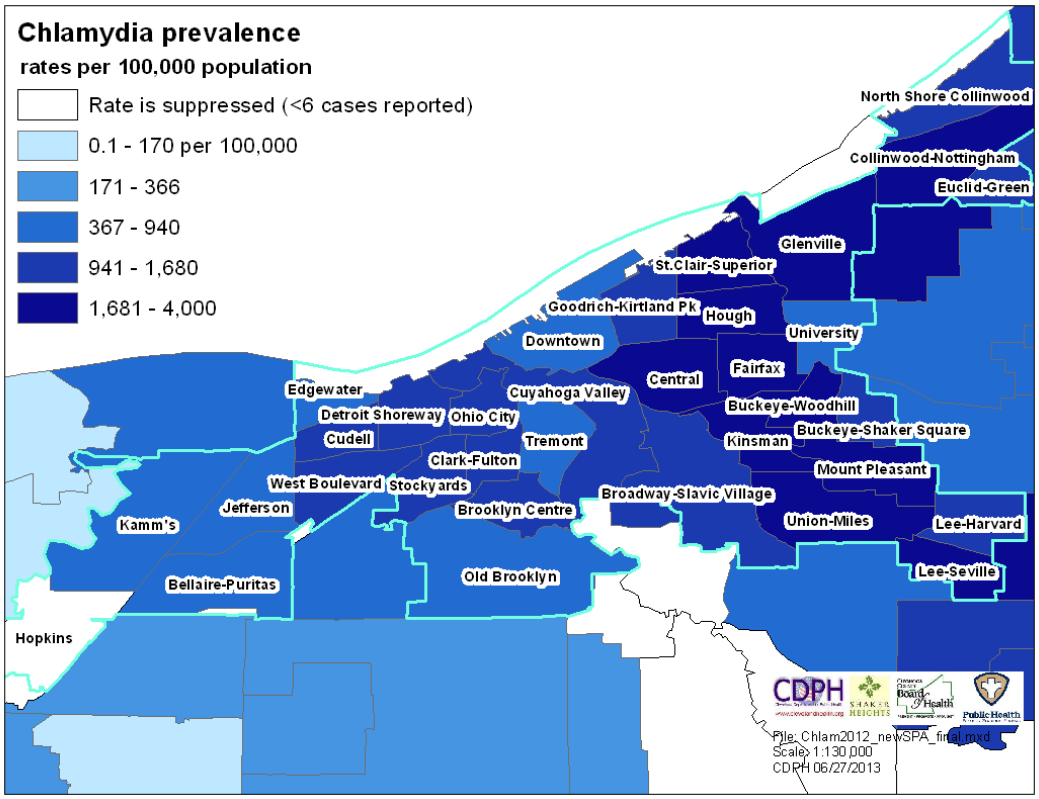


Figure 9. Map of Chlamydia prevalence rates among Cleveland neighborhoods (statistical planning areas) for 2012. Figure 9 is a close-up of the previous figure for Cuyahoga County. Darker shading reflects higher rates.



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Groups at highest risk

Teens and young adults under 30 years of age continue to be the most common group reported having Chlamydia and/or gonorrhea. Since 2002, over 40% and 30% of all Chlamydia and gonorrhea cases, respectively, occurred to teens age 15 to 19 years. Overall, 3 in 4 Chlamydia reports were among young adults under 25 years of age.

Among Black/African American teen females, Chlamydia is endemic with as many as 10% to 13% reporting infections for the county. For Black teen females in 2012, Chlamydia prevalence was 11.6%. This trend has not improved in the past decade of surveillance.

In addition, 250 cases of Chlamydia or gonorrhea were reported among children age 10 to 14 for Cuyahoga County in 2012, a trend unchanged from since 2008.

Gonorrhea, in detail

In Cuyahoga County, gonorrhea prevalence rates have increased over the past four years. For 2012, we report a 6.9% rate increase over 2011 levels. 3,716 cases of gonorrhea were reported, a rate of 290.81 cases per 100,000.

In Cleveland, case counts were the same for both 2011 and 2012; but due to a slight increase in population, the rates decreased slightly by 0.1%. Overall, 2,366 case reports were received, reflecting 63.7% of all cases reported in the county. This is the lowest percentage of cases since 2003, when these reports began. In 2003, 83.6% of gonorrhea cases in the county were from Cleveland residents. In 2008, this dropped to 71.1%. From this, we infer that **more gonorrhea cases are being reported from other municipalities than Cleveland than in any other time.**

As reported earlier in Figure 3, one-third (33.0%) of gonorrhea cases for Cuyahoga County were reported among **teens age 15 to 19** years, at a rate of 1,367.91 cases per 100,000 teens. While rates among teens dropped 2.5% compared to the previous year, **rates for young adults age 20 to 24 increased 8.4% with the highest rate among all age groups at 1.7% prevalence** (1,698.43 cases per 100,000). Similar to last year, gonorrhea cases among young adults comprised 35.7% of all cases reported for Cuyahoga County (35.2% last year).

Nearly six in every 10 cases (57.5%) of gonorrhea reported to public health are among females, consistent with previous reports. African Americans shoulder the burden of gonorrhea in Cuyahoga County, with 2,741 cases, 73.8% overall, for a rate of 733.92 per 100,000. This rate is about eight and twenty-two greater than reported among Hispanics and White/non-Hispanics, respectively.

Figures 10 and 11 map the geographic distribution of reported gonorrhea cases. Similar to Chlamydia, rates are highest most of the Cleveland neighborhoods on the East Side. For all of Cuyahoga County, the municipalities with the five highest rates were

- **East Cleveland**: 1,186.55 cases per 100,000, a 47.2% rate increase over 2011 rates; 212 cases in 2012.
- **Warrensville Heights**: 628.42 cases per 100,000, 37.1% rate increase; 85 cases in 2012.
- **Cleveland**: 595.61 cases per 100,000, 0.1% rate decrease; 2,366 cases in 2012.
- **Maple Heights**: 518.54 cases per 100,000, 11.1% rate increase; 120 cases in 2012.
- **Euclid**: 412.78 cases per 100,000, 3.1% rate increase; 202 cases in 2012.

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Cleveland neighborhoods with the highest rates can be seen in areas with the darkest shading (Figure 11.) In 2012, both the statistical planning area and ward borders changed. Comparisons between 2011 and 2012 results for these areas are not recommended.

Those Cleveland neighborhoods with the largest rates are

- **Kinsman**: 1,202.22 cases per 100,000; 84 cases in 2012, 23 of whom were teens age 15-19 years.
- **Central**: 1,153.92 cases per 100,000; 142 cases, 51 were teens.
- **Hough:** 1,150.31 cases per 100,000; 132 cases, 47 were teens.
- **Glenville**: 1,111.20 cases per 100,000; 303 cases, 97 were teens.
- **Buckeye-Woodhill**: 1,021.49 cases per 100,000; 68 cases, 25 were teens.
- **St. Clair-Superior**: 1,003.49 cases per 100,000; 69 cases, 31 were teens.

More than half (57.9%) of all gonorrhea cases reported in Goodrich-Kirtland Park were teens age 15 to 19 years, the highest percentage among all Cleveland neighborhoods.

Figure 10. Map of gonorrhea prevalence rates among municipalities for 2012. Darker shading reflects higher rates.

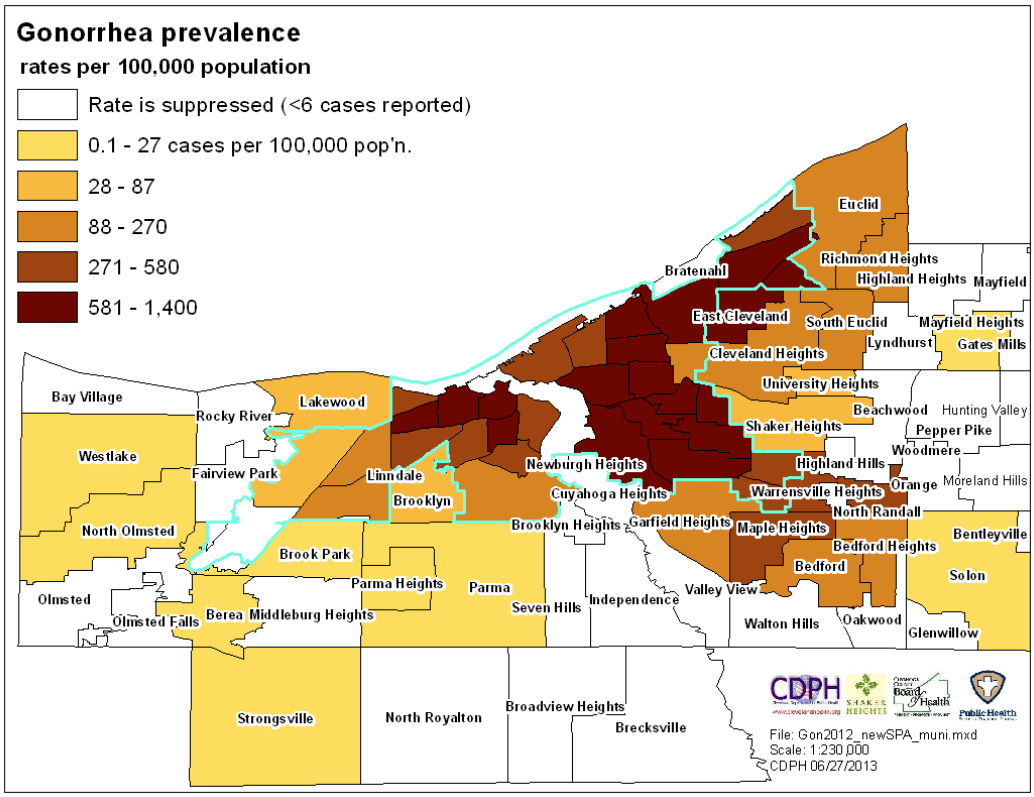
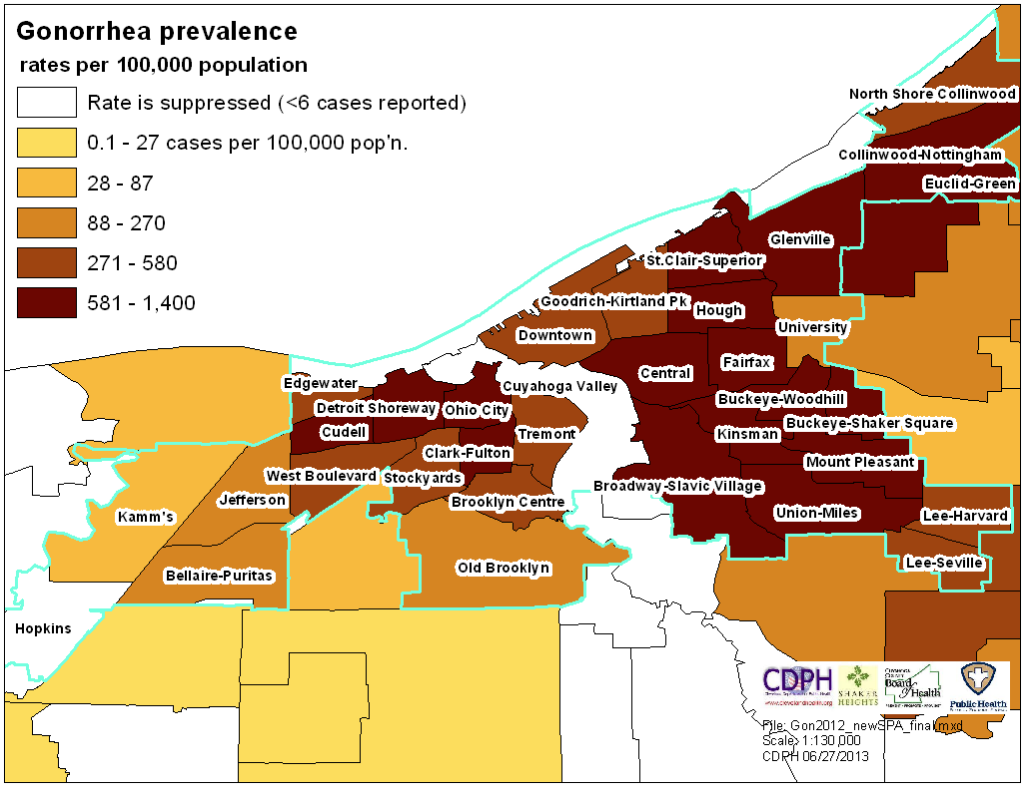


Figure 11. Map of gonorrhea prevalence rates among Cleveland neighborhoods (statistical planning areas) for 2012. Darker shading reflects higher rates.



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Additional tables illustrate highest gonorrhea prevalence rates in **Cleveland wards** 7, 5, 8, 4, 6, 10, 2, 9, 12 and 11 (Figure 12). These ten wards have rates higher than 596.51 cases per 100,000 population, the average rate for Cleveland overall. Figure 13 shows **Cuyahoga County Council Districts** 8, 7, 9, 10 and 3 as having Gonorrhea prevalence rates higher than the county average, 290.81 cases per 100,000 population. These are the same five wards listed with the highest Chlamydia rates in 2011, only in different order.

Figure 12 (sorted by Chlamydia rate). Table of 2012 Chlamydia and gonorrhea case counts and rates for Cleveland Wards. Data are sorted by decreasing Chlamydia rates.

	STD diagnoses: Cases, Percent, *Rate per 100,000, Change in rates from 2011							
	Chlamydia infection				Gonococcal infection			
Cleveland City Council Ward	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
5	577	9.6	2,765.79	*-11.6%*	221	9.3	1,059.34	*-10.2%*
8	415	6.9	2,267.51	*1.5%*	178	7.5	972.57	*4.7%*
7	367	6.1	2,015.49	*-6.9%*	194	8.2	1,065.41	*-1.5%*
6	391	6.5	1,933.63	*1.6%*	165	7	815.98	*8.6%*
2	392	6.5	1,932.37	*-11.7%*	158	6.7	778.86	*-12.2%*
4	379	6.3	1,897.18	*-7.8%*	169	7.1	845.97	*-1.7%*
10	341	5.7	1,834.02	*-16.2%*	149	6.3	801.38	*-19.0%*
9	271	4.5	1,628.51	*-7.8%*	117	4.9	703.08	*-15.2%*
1	339	5.7	1,527.10	*-2.6%*	130	5.5	585.61	*-0.8%*
14	328	5.5	1,468.15	*-0.9%*	112	4.7	501.32	*14.3%*
15	292	4.9	1,396.80	*-1.4%*	111	4.7	530.97	*26.1%*
11	279	4.7	1,392.84	*-5.4%*	121	5.1	604.06	*-6.2%*
12	266	4.4	1,335.61	*-18.9%*	124	5.2	622.61	*11.7%*
16	278	4.6	1,221.28	*-10.9%*	104	4.4	456.88	*-1.0%*
17	209	3.5	991.56	*-12.9%*	64	2.7	303.63	*-19.0%*
3	252	4.2	977.46	*-8.0%*	106	4.5	411.16	*19.1%*
18	181	3	818.26	*6.5%*	40	1.7	180.83	*0.0%*
13	138	2.3	569.40	*-20.2%*	35	1.5	144.41	*-16.7%*
19	95	1.6	424.69	*26.7%*	9	0.4	40.23	*-25.0%*
Not located	195	3.3	N/A	*N/A*	59	2.5	N/A	*N/A*
All	5,985	100	1,506.65	*-4.4%*	2,366	100	595.61	*-0.1%*

Not located: Those STD reports identified by zip code and address fragment as Cleveland residents.

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Figure 13. Table of 2012 Chlamydia and gonorrhea case counts and rates for Cuyahoga County Council Districts. Data are sorted by decreasing Chlamydia rates.

County District	STD diagnoses: Cases, Percent, *Rate per 100,000, **Change in rates from 2011							
	Chlamydia infection				Gonococcal infection			
	Cases	Percent	Rate*	*% change in rates***	Cases	Percent	Rate*	*% change in rates***
8	1976	19.3	1,742.57	*-4.9%*	751	20.2	662.28	-1.4%
7	1576	15.4	1,367.90	*-20.5%*	720	19.4	624.93	-12.5%
9	1413	13.8	1,251.59	*2.4%*	525	14.1	465.03	7.8%
10	1396	13.6	1,189.87	*-15.1%*	643	17.3	548.05	-0.5%
3	1246	12.1	1,069.57	*-12.4%*	426	11.5	365.68	-1.2%
11	884	8.6	761.67	*7.4%*	303	8.2	261.07	10.3%
2	558	5.4	481.73	*9.0%*	124	3.3	107.05	9.7%
4	349	3.4	295.10	*16.1%*	50	1.3	42.28	10.5%
6	271	2.6	226.44	*11.4%*	43	1.2	35.93	-13.6%
5	192	1.9	164.35	*-6.4%*	34	0.9	29.10	75.6%
1	159	1.6	134.59	*10.2%*	28	0.8	23.70	54.3%
Not located	236	2.3	N/A	N/A	69	1.9	N/A	N/A
All	10256	100	802.63	*-0.3%*	3716	100	290.81	6.9%

Not located: Those STD reports identified by zip code and address fragment as Cuyahoga County residents.

Multiple infection records

Chlamydia is often asymptomatic, leading to frequent re-infections. One in ten individuals (10.5%) was reported having Chlamydial infections multiple times during 2012 (and 10.2% in 2011). One in fourteen individuals (7.9%) was reported having gonorrheal infections multiple times during (and 7.2% in 2011).

It can be assumed that in many of these individuals, re-infection occurred due to infected partner who was not tested and treated at the same time as the individual case; alternatively, the individual did not complete treatment adequately to clear the infection.

Such data strongly suggest that the use of methods that allow partners to obtain prophylaxis without screening could reduce the prevalence of these infections in the population. Moreover, with teens and young adults, many of whom who do not have medical homes or access to medical care beyond the emergency room may benefit from partner prophylaxis regimens. Please refer to the Recommendation section.

Co-infection

Of the 10,256 cases of Chlamydia reported, 1,263 cases were co-infections with *Neiserria gonorrhoea*. This implies that 12.3%, or one in every eight cases of Chlamydia reported to public health was complicated by an existing gonorrhea infection. It cannot be determined whether a person had one and got the other, or if both infections were obtained at the same sexual encounter. Regardless of route, co-infection with STDs also increases a person's risk of being infected with HIV or yet another STD from an infected partner.

Co-infection and multiple infection trends have not improved appreciably since 2007. Co-infection increases the risk of pelvic inflammatory disease which increases the likelihood of long term sequela (outcomes)

including ectopic pregnancy, chronic pain and infertility among females. Regrettably, public health officials do not have access to medical record data to quantitatively illustrate the pain, disease, problems with fertility and miscarriages related to these infections. With sustained high rates of infection, we suspect that many others remain infected, asymptomatic and unaware. An estimated 10% of females with untreated Chlamydia are impacted with chronic pain and infertility issues.

Recommendations

To stop this cycle of reinfection, treating physicians and nurse practitioners should encourage patients to get all partners screened and treated. We support Expedited Partner Therapy (EPT), a clinical practice allowing doctors to provide treatment to patients at the time of care, and to their partners without a face-to-face encounter or patient-provider relationship. Currently, Ohio is only one of seven states that prohibit EPT (see the CDC site, http://www.cdc.gov/std/ept/legal/default.htm) We support efforts by the Ohio Department of Health to encourage Statehouse legislators to approve EPT so that Ohio can join 43 other states that allow EPT in some form.

Chlamydia and gonorrhea can be prevented through screening and treatment of patients and their partners, safer sex practices routinely using barrier protection (condoms, dental dams), and avoiding casual or anonymous sex partners whose sexual history and current STD/HIV status is not known. Infections do not occur just in the genitals. Gonorrhea and Chlamydia can be passed orally. The throat and mouth have mucous membranes that can become infected with either or both infections. Already having one STD, including herpes, makes a person more susceptible to become infected with another STD from an infected partner.

So, anyone who has been treated for Chlamydia and/or gonorrhea should tell their partner(s) to get tested and treated before resuming sexual activities.

Teens and youth are at highest risk for Chlamydia and gonorrhea. Moreover, increasing access to STD testing and treatment for teens is needed where infection rates are highest. STD testing and treatment for teens is supported by the Centers for Disease Control and Prevention (CDC, 2012. Cohen et al, 1999); school-based screenings have been done elsewhere (e.g. Washington, DC; Philadelphia, PA; Muskegon, MI; Manchester, NH) and should be considered in high schools in municipalities with Chlamydia or gonorrhea rates greater than the county average: **East Cleveland, Warrensville Heights, Cleveland, Maple Heights, Newburgh Heights, Euclid, Bedford Heights, Bedford, Woodmere, Garfield Heights, Cleveland Heights, Richmond Heights, and South Euclid.**

These same municipalities appeared in the list of municipalities recommended for in-school intervention in last year's 2011 STD Surveillance Report.

New Opportunities

In 2013, the Cleveland Metropolitan School District (CMSD) was awarded a grant to develop a school- and community-based planning committee to develop authentic strategies to increase and apply STD prevention strategies that will work with children and adolescents. CMSD will partner with the Cleveland Department of Public Health and many community-based agencies to expand linkages to services and care centers. Additional approaches will be to foster safer and more supportive school environments. Expanded surveillance of behavioral measures will expand the existing partnership between CMSD and the Prevention Research Center for Healthy Neighborhoods at Case Western Reserve University. The PRC has been coordinating the Youth Risk Behavioral Survey (YRBS) in the area since 2004. Expanded surveillance will involve including new survey questions in the annual surveys to determine changes in behavior and uptake of the expanded health curricula. A combination approach such as this will help uncover gaps in prevention and, in time, attempt to reduce the persistently high prevalence of STDs among adolescents and young adults in our community.

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