

STD Surveillance Network Report

STD Surveillance Network Overview

Traditionally, sexually transmitted disease (STD) surveillance activities involve collecting basic information on the age, sex, race/ethnicity, and county of residence of cases. However, in order to improve the design of public health programs for the prevention and control of STDs such as gonorrhea, more detailed information is needed on a broad cross-section of patients.

In response to such surveillance needs, the Centers for Disease Control and Prevention (CDC) established the STD Surveillance Network (SSuN). SSuN is intended to be a dynamic, flexible STD surveillance network composed of local enhanced STD surveillance systems following common protocols. The purpose of SSuN is to fill critical gaps in national surveillance as well as improve the capacity of national, state, and local STD programs to detect, monitor, and respond rapidly to trends in STDs through enhanced collection, reporting, analysis, visualization, and interpretation of disease information.

In the first funding cycle of SSuN (10/2005-9/2008), 5 geographically diverse health departments participated in enhanced gonorrhea surveillance in order to better characterize the epidemiology of gonorrhea. In the sec-

ond cycle of SSuN (10/2008-9/2013), the scope of the project was expanded to include all STDs, and 12 sites across the United States now participate in these enhanced surveillance activities. The SSuN project areas currently encompass 42 STD clinics, 115 counties, and 6 laboratories. Data collected as part of SSuN now capture approximately 20% of the total gonorrhea cases diagnosed annually in the United States.

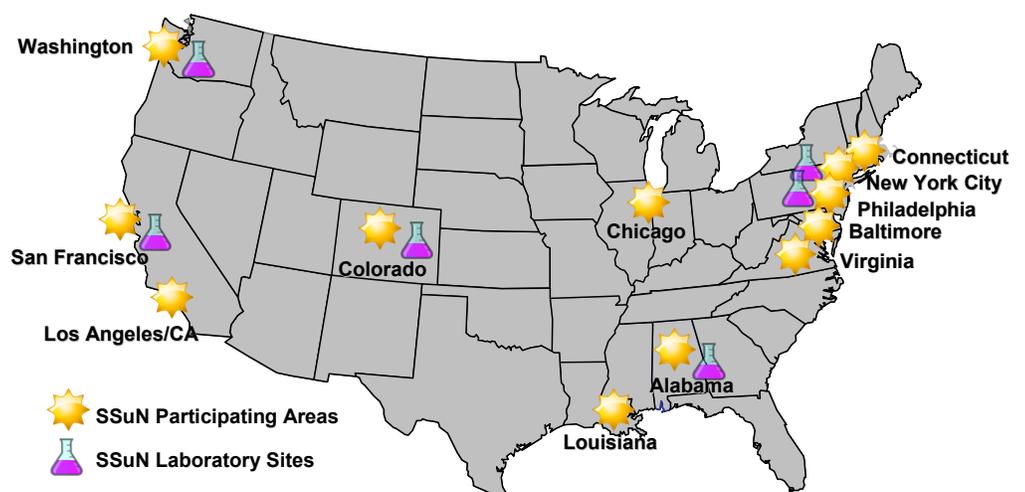
SSuN has two main components: STD clinic surveillance and *Neisseria gonorrhoeae* (NG) population surveillance. The former involves collecting enhanced information on patients presenting to STD clinics, while the latter involves interviewing a random sample of patients diagnosed with gonorrhea in the general population. The data captured as part of SSuN include information not only on STD diagnoses, but also on patient demographics and high-risk behaviors.

In 2012, three Virginia localities participated in the SSuN project: Richmond City, Chesterfield County, and Henrico County. Enhanced surveillance data is captured for approximately 6,000 STD clinic visits and over 1,000 cases of gonorrhea each year in these three localities.

Report Contents

STDs in Richmond	2
SSuN Management	3
STD Clinic Surveillance	4
Demographics	5
STD Diagnoses	8
Population Surveillance	11
Interviewed Cases	13
SSuN Update	15

Map 1. SSuN Cycle II Participating Project Areas and Labs, 2009-13



STDs in the Richmond Area

Chlamydia trachomatis infection is the most commonly reported notifiable disease in the United States. The national chlamydia rate in 2011 was 457.6 cases per 100,000. The chlamydia rate in Virginia was 431.6 per 100,000.

Gonorrhea (*Neisseria gonorrhoeae* infection) is the second most commonly reported notifiable disease in the United States. In Virginia, the 2011 gonorrhea rate was 81.5 per 100,000 population, compared to a national gonorrhea rate of 104.2 per 100,000.

Rates of chlamydia cases have been increasing over the past decade, while gonorrhea rates have remained mostly stable with only a slight downward trend (Figure 1).

There are approximately 5,000-6,000 cases of chlamydia and 1,000 cases of gonorrhea diagnosed in the Richmond area each year (including the localities of Richmond City, Henrico County, and Chesterfield County).

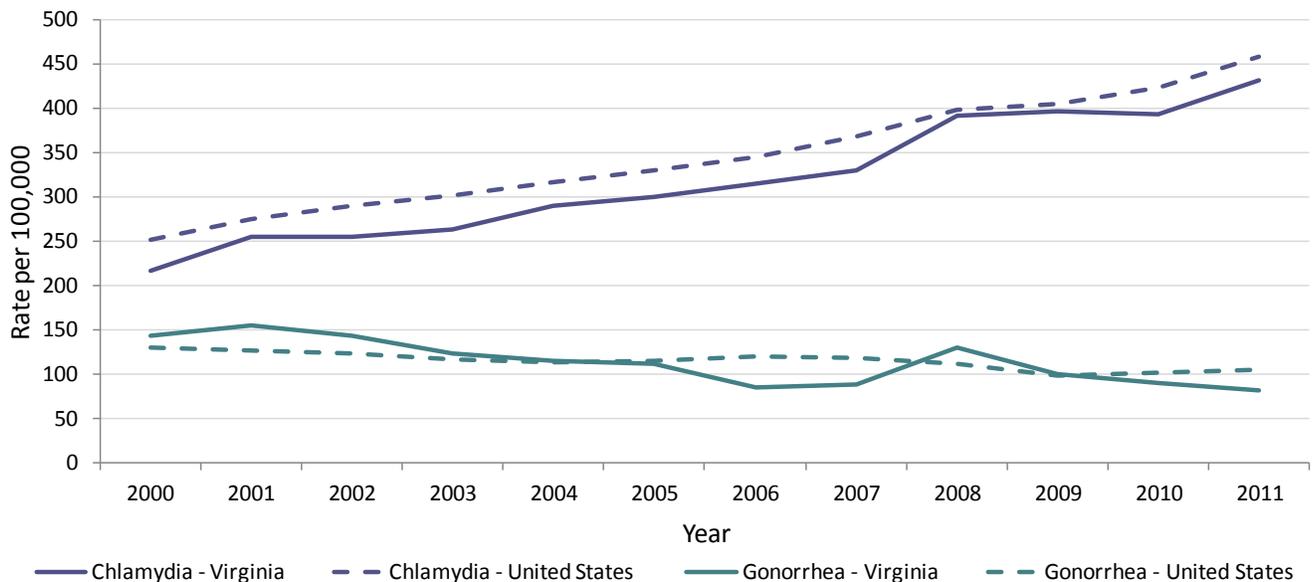
Richmond City has historically experienced one of the highest gonorrhea rates of any city in the United States. There are also large disparities in STD rates

between Richmond City and the surrounding localities. In 2011 the gonorrhea rate for Richmond City was 308.5 per 100,000, significantly higher than the 68.4 and 62.9 per 100,000 observed in Henrico and Chesterfield counties, respectively. That is, Richmond City's gonorrhea rate in 2011 was 4.5 times that of neighboring Henrico County and 5.0 times that of Chesterfield County.

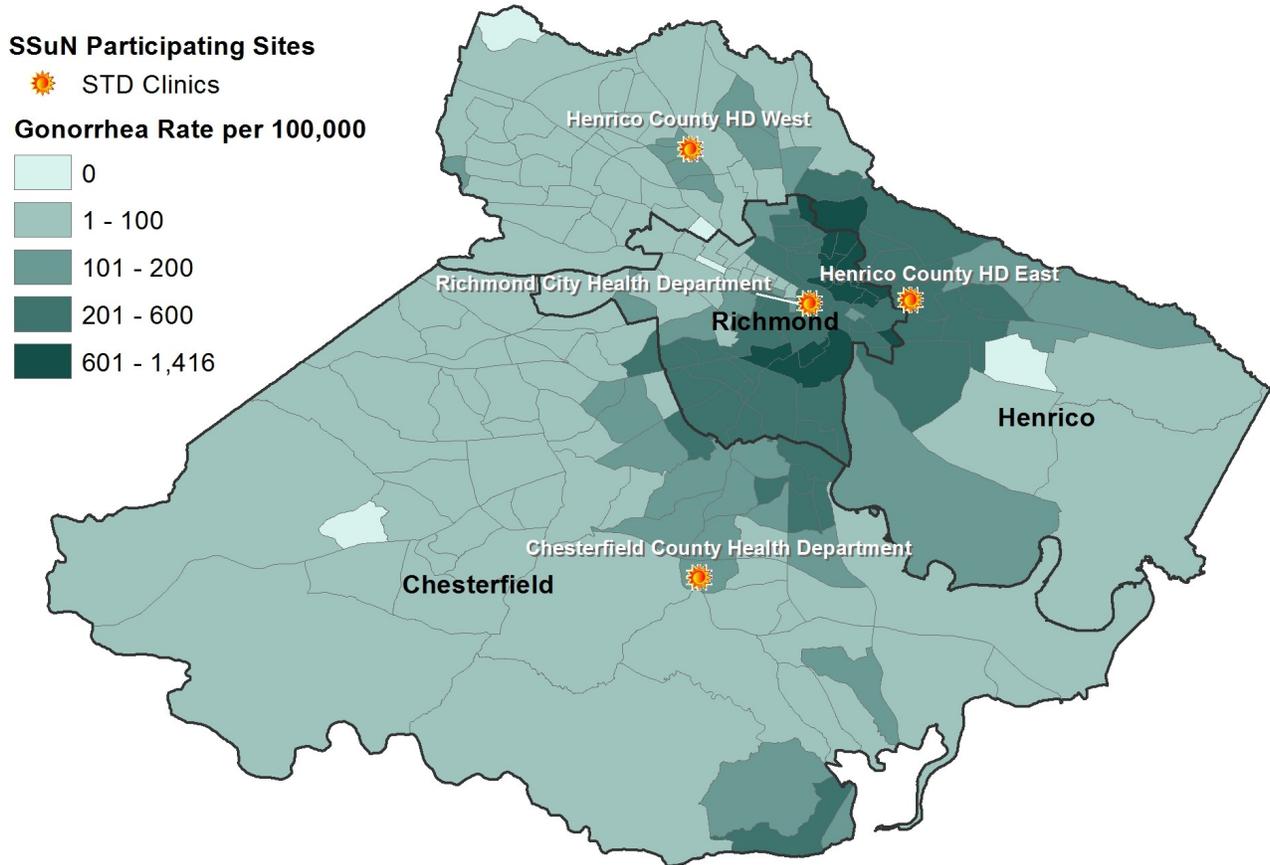
Distinct patterns can be observed in the spatial or geographic distribution of both chlamydia and gonorrhea rates in the Richmond area. High rates of these infections are consistently clustered in the eastern and central areas of the city and radiate outwards (Map 1). These high rates tend to be concentrated in areas with high levels of poverty and economic disadvantage, which are often disproportionately inhabited by minority populations.

For more information on national STD data, see the CDC's report, *Sexually Transmitted Disease Surveillance, 2011*: <http://www.cdc.gov/std/stats11/>

Figure 1. Annual Chlamydia and Gonorrhea Rates, 2000-2011



Map 1. 5-Year Average Gonorrhea Rates by Census Tract, 2007-2011



Managing SSuN Activities in Virginia

SSuN project activities in Virginia are coordinated by Health Informatics and Integrated Surveillance Systems (HISS) staff within the Division of Disease Prevention (DDP) at the Virginia Department of Health's Central Office.

SSuN STD Clinic data collection activities involve collaboration with the health department STD clinics in the three participating Virginia health districts. Clinical staff at these local STD clinics distribute self-administered interview forms during the registration process to all patients visiting the clinic.

These completed interview forms are then sent to the central office for data entry into the SSuN data system. Data quality assurance and management activities also occur at the central office, including the integration of patient interview data with information on

STD diagnoses and treatment from other STD and HIV/AIDS surveillance data systems.

For SSuN NG population surveillance activities, HISS staff attempt to contact gonorrhea patients via phone to conduct interviews. These interviews include questions similar to those on the paper-based interview forms collected from STD clinics. Up to 10 attempts are made to contact each patient, and interviews are conducted within 60 days of the gonorrhea diagnosis.

The SSuN grant funds a full-time STD epidemiologist to coordinate SSuN activities in Virginia. In addition, masters of public health (MPH) students are often hired to assist with additional data collection activities such as conducting phone interviews with patients diagnosed with gonorrhea. These students also assist with data analyses and reports.

STD Clinic Surveillance Data Summary

Interviews were captured for 26,266 patient visits to the three participating STD clinics during the 4 year period between January 1, 2009 and December 31, 2012 (out of 35,414 total clinic visits).

All patients presenting to these STD clinics were asked to complete a SSuN interview form during the registration process. This interview form captures information on patient demographics, risk behaviors, and STD history. Data from these interviews were later merged with patient diagnoses and treatment information from other STD reporting systems.

On average, 126 interviews were collected per week from 2009-2012, representing 74% of all clinic visits. The Richmond City STD clinic had the largest volume of patient visits, followed by Chesterfield and Henrico County clinics (Figure 2).

The majority of patients who were interviewed in 2012 attended STD clinics within their own localities of residence, however there was considerable cross-over between neighboring areas (Table 1). For example, approximately 38% of Richmond City STD Clinic patients were residents of another locality.

Figure 2. Summary of STD Clinic Visits by Quarter and Facility, 2009-2012

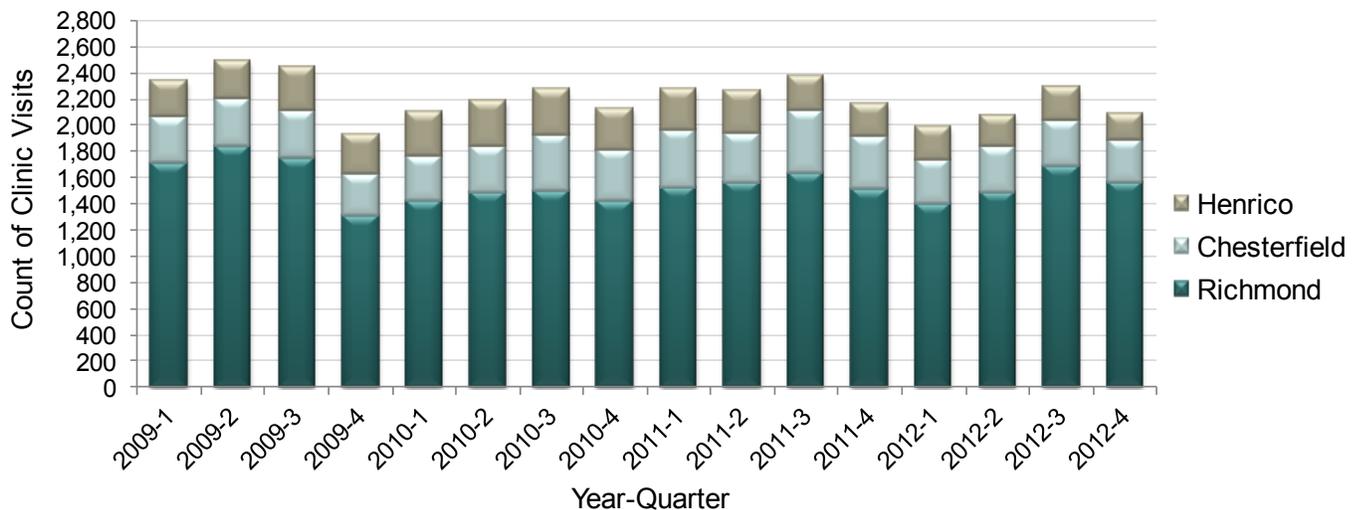


Table 1. Patient Locality of Residence by STD Clinic, 2012 (Interviewed Patients Only)

Locality of Residence	Overall		Richmond		Henrico		Chesterfield	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Richmond City	3,102	49.2%	2,886	61.6%	93	13.9%	123	12.8%
Henrico County	1,594	25.3%	1,053	22.5%	524	78.4%	17	1.8%
Chesterfield County	1,178	18.7%	428	9.1%	19	2.8%	731	76.2%
Hanover County	72	1.1%	57	1.2%	13	1.9%	2	0.2%
Petersburg City	57	0.9%	32	0.7%	0	0.0%	25	2.6%
Hopewell City	32	0.5%	18	0.4%	1	0.1%	13	1.4%
Colonial Heights City	16	0.3%	5	0.1%	0	0.0%	11	1.1%
Other Locality	204	3.2%	158	3.4%	16	2.4%	30	3.1%
Out of State	41	0.6%	33	0.7%	2	0.3%	6	0.6%
Unknown	14	0.2%	13	0.3%	0	0.0%	1	0.1%
Totals	6,310		4,683		668		959	

STD Clinic - Demographics by Facility

The demographic characteristics of interviewed patients attending SSuN-participating STD clinics are presented in Table 2.

STD clinic patients were fairly evenly distributed between males and females. However, the Richmond City STD clinic patients were more likely to be male than either the Henrico or Chesterfield County clinic patients (52% compared to 42-43% respectively).

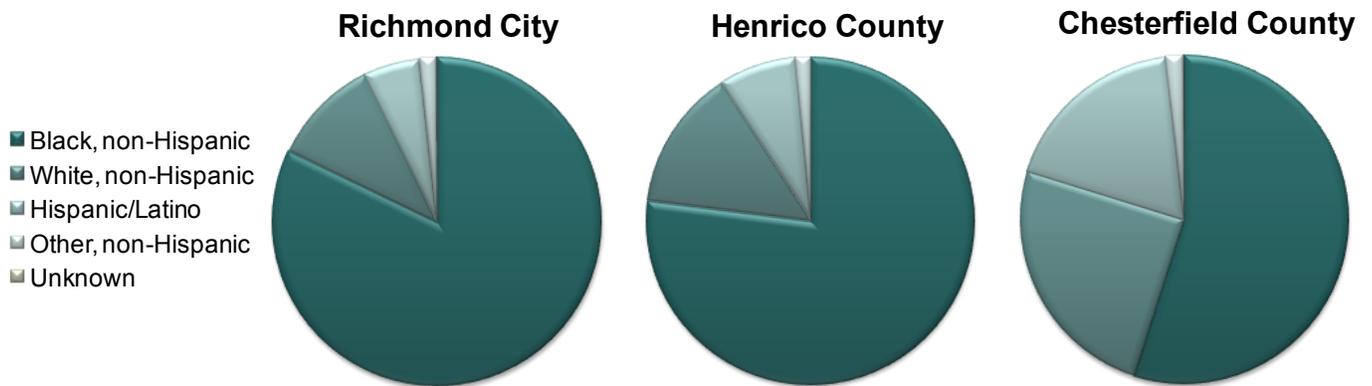
The majority of STD clinic patients were black, non-Hispanic (78%), but there were significant differences between clinics (Figure 3). Richmond City had the highest proportion of black patients; 82% of Richmond City patients were black compared to 77% of Henrico County patients. The Chesterfield County clinic had the lowest proportion of black patients

(55%) and the highest proportion of both white (25%) and Hispanic/Latino patients (18%).

Consistent across the three clinics, most patients were between 20-24 (28%) or 25-34 (45%) years of age. Fourteen percent had less than a high school education, while 27% were either full- or part-time students. Thirty-four percent of clinic patients were unemployed at the time of their visit.

Most clinic patients had been previously tested for HIV, including 80% of patients at the Richmond City and Henrico County clinics and 69% at the Chesterfield County clinic (Table 3). Approximately 11% of all female patients reported being fully vaccinated for HPV, and another 7% had been partially vaccinated.

Figure 3. Comparison of STD Clinic Patient Race/Ethnicity by Clinic, 2009-2012



Summary of STD Clinic Patient Characteristics by Facility

- 57-58% of patients attending the Chesterfield and Henrico STD clinics were female, while only 48% of Richmond City clinic patients were female.
- 73% of all STD clinic patients were between 20-34 years of age.
- Richmond City had the highest proportion of black patients (82%) compared to Henrico County (77%) and Chesterfield County (55%).
- Chesterfield County had the highest proportion of Hispanic patients (18%) compared to Richmond City (6%) and Henrico County (8%).
- Approximately 18% of females reported being fully or partially vaccinated against Human Papillomavirus (HPV).

Table 2. Characteristics of Patients Attending Richmond Area STD Clinics, 2009-2012

Characteristic	Overall		Richmond		Henrico		Chesterfield	
	N	%	N	%	N	%	N	%
Gender								
Male	12,995	49.5	10,059	52.0	1,344	41.7	1,592	43.2
Female	13,234	50.4	9,263	47.9	1,877	58.2	2,094	56.8
Transgender	37	0.1	33	0.2	3	0.1	1	0.0
Race/Ethnicity								
Black, non-Hispanic	20,397	77.7	15,895	82.1	2,477	76.8	2,025	54.9
White, non-Hispanic	3,424	13.0	2,060	10.6	447	13.9	917	24.9
Hispanic/Latino	1,998	7.6	1,067	5.5	245	7.6	679	18.4
Other, non-Hispanic	429	1.6	318	1.6	48	1.5	63	1.7
Unknown	18	0.1	15	0.1	0	0.0	3	0.1
Age								
Less than 15 years	2	0.0	0	0.0	1	0.0	1	0.0
15-19 years	493	1.9	308	1.6	75	2.3	110	3.0
20-24 years	7,343	28.0	5,357	27.7	889	27.6	1,097	29.8
25-29 years	7,586	28.9	5,613	29.0	886	27.5	1,087	29.5
30-34 years	4,132	15.7	2,936	15.2	519	16.1	677	18.4
35-44 years	3,823	14.6	2,776	14.3	569	17.6	478	13.0
45+ years	2,887	11.0	2,365	12.2	285	8.8	237	6.4
Education								
Less than HS/GED	3,667	14.0	2,643	13.7	456	14.1	568	15.4
High school/GED	10,029	38.2	7,360	38.0	1,310	40.6	1,359	36.9
Some college	9,057	34.5	6,627	34.2	1,124	34.9	1,306	35.4
4+ years college	2,716	10.3	2,105	10.9	305	9.5	306	8.3
Unknown	797	3.0	620	3.2	29	0.9	148	4.0
Employment								
Employed	13,671	52.0	9,857	50.9	1,860	57.7	1,954	53.0
Unemployed	8,942	34.0	6,683	34.5	1,084	33.6	1,175	31.9
Other*	1,920	7.3	1,471	7.6	179	5.6	270	7.3
Unknown	1,733	6.6	1,344	6.9	101	3.1	288	7.8
Student Status								
Full-time student	4,755	18.1	3,505	18.1	561	17.4	689	18.7
Part-time student	2,245	8.5	1,656	8.6	280	8.7	309	8.4
Not a student	18,014	68.6	13,241	68.4	2,292	71.1	2,481	67.3
Unknown	1,252	4.8	953	4.9	91	2.8	208	5.6
Totals	26,266		19,355		3,224		3,687	

* Includes retired, homemaker, and unable to work

Technical Note: The data shown above represent patient visits to participating STD clinics, but do not necessarily represent unique patients. That is, individual patients may have attended participating STD clinics multiple times during the study period.

Table 3. Testing and Vaccination History of STD Clinic Patients, 2009-2012

	Overall		Richmond		Henrico		Chesterfield	
	N	%	N	%	N	%	N	%
Ever tested for HIV								
Yes	20,567	78.3	15,463	79.9	2,576	79.9	2,528	68.6
No	4,859	18.5	3,272	16.9	614	19.0	973	26.4
Unknown/Missing	840	3.2	620	3.2	34	1.1	186	5.0
HPV Vaccination Status (females only)								
Not vaccinated	8,500	64.2	5,898	63.7	1,314	70.0	1,288	61.5
Partially vaccinated	886	6.7	635	6.9	98	5.2	153	7.3
Fully vaccinated	1,417	10.7	988	10.7	192	10.2	237	11.3
Unsure	1,543	11.7	1,170	12.6	109	5.8	264	12.6
Missing	888	6.7	572	6.2	164	8.7	152	7.3

Patient Gender and Sex of Partners

Overall, the majority of STD clinic patients (83% of men and 86% of women) reported either being heterosexual or having sex exclusively with partners of the opposite sex in the 3 months prior to their clinic visit. Among men, 8% reported being homosexual or having sex with other men (MSM) in the previous 3 months, while an additional 3.3% reported being bisexual or having sex with both men and women. Men

attending the Richmond City STD clinic were more likely to be MSM or bisexual than attendees of the Henrico or Chesterfield county clinics.

Approximately 8% of women reported bisexual orientation or having sex with both men and women in the previous 3 months, while 2% reported having sex exclusively with other women.

Table 4. Gender of Sex Partners among STD Clinic Patients, 2009-2012

Gender and Sex of Partners*	Overall		Richmond		Henrico		Chesterfield	
	N	%	N	%	N	%	N	%
Men who have sex with...								
men	995	7.7	848	8.4	91	6.8	56	3.5
women	10,819	83.3	8,195	81.5	1,218	90.6	1,406	88.3
both men and women	428	3.3	373	3.7	29	2.2	26	1.6
unknown sex of partners	753	5.8	643	6.4	6	0.4	104	6.5
Total Men	12,995		10,059		1,344		1,592	
Women who have sex with...								
men	11,421	86.3	7,890	85.2	1,731	92.2	1,800	86.0
women	262	2.0	203	2.2	26	1.4	33	1.6
both men and women	1,019	7.7	784	8.5	109	5.8	126	6.0
unknown sex of partners	532	4.0	386	4.2	11	0.6	135	6.4
Total Women	13,234		9,263		1,877		2,094	

* Transgender individuals not shown (N = 37).

STD Clinic - Diagnosis Rates

Chlamydia was the most frequently diagnosed STD in the clinics, with a positivity rate of 14% (3,562 cases) between Jan. 1, 2009 and Dec. 31, 2012. The gonorrhea positivity rate during this period was 4% (1,062 cases). There were slight variations in positivity rates between clinics (Table 5). For example, the chlamydia rate was highest in Chesterfield County, while the gonorrhea rate was highest in Richmond City. In addition, 46% of patients reported a previous STD infection sometime prior to their clinic visit.

STD positivity rates were highest among patients who were male, black, younger ages, and had less education (Table 6). For example, 5% of male clinic patients were diagnosed with gonorrhea compared to 3% of females.

Younger patients were significantly more likely to be diagnosed with both chlamydia and gonorrhea. Positivity rates were highest among 15-24 year olds, and decreased steadily with increasing age (Figure 4). Fifteen percent of non-Hispanic black patients were diagnosed with chlamydia compared to 9% of non-Hispanic white patients and 11% of Hispanic patients (Figure 5).

STD positivity rates also increased with increased engagement in high-risk behaviors (Table 6), such as not using a condom at last sex and marijuana use. Having multiple sex partners was also associated with an increased STD positivity rate, with chlamydia positivity increasing from 5% to 18% for patients reporting 0 compared to 3 or more recent sex partners.

Table 5. Patient Diagnoses by STD Clinic, 2009-2012

Diagnosis	Overall		Richmond		Henrico		Chesterfield	
	N	%	N	%	N	%	N	%
Chlamydia	3,562	13.6	2,550	13.2	453	14.1	559	15.2
Gonorrhea	1,062	4.0	847	4.4	104	3.2	111	3.0
Syphilis	82	0.3	62	0.3	14	0.4	6	0.2
Ever Diagnosed w/STD*	12,072	46.0	9,226	47.7	1,523	47.2	1,323	35.9
Totals	26,266		19,355		3,224		3,687	

* Patients who reported ever having been diagnosed with a sexually transmitted infection, including trichomoniasis and genital warts.

Figure 4. STD Positivity Rates by Patient Age, 2009-2012

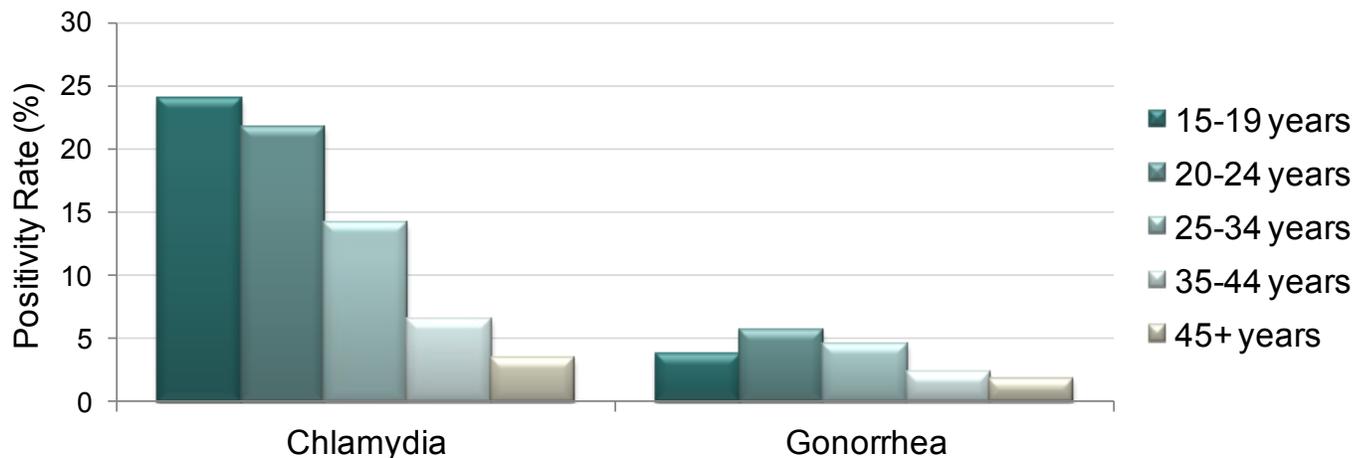


Table 6. STD Positivity Rates by Patient Characteristics, 2009-2012

Characteristic	Total	Chlamydia		Gonorrhea		Syphilis	
	N	N	%	N	%	N	%
Gender							
Male	12,995	2,015	15.5	678	5.2	64	0.5
Female	13,234	1,545	11.7	384	2.9	16	0.1
Transgender	37	2	5.4	0	0.0	2	5.4
Race/Ethnicity							
Black, non-Hispanic	20,397	2,988	14.6	990	4.9	71	0.3
White, non-Hispanic	3,424	315	9.2	34	1.0	3	0.1
Hispanic/Latino	1,998	212	10.6	26	1.3	7	0.4
Other, non-Hispanic	429	47	11.0	12	2.8	1	0.2
Unknown	18	0	0.0	0	0.0	0	0.0
Age							
15-19 years	493	118	23.9	18	3.7	0	0.0
20-24 years	7,343	1,593	21.7	410	5.6	17	0.2
25-29 years	7,586	1,071	14.1	343	4.5	19	0.3
30-34 years	4,132	432	10.5	153	3.7	10	0.2
35-44 years	3,823	247	6.5	88	2.3	18	0.5
45+ years	2,887	100	3.5	50	1.7	18	0.6
Gender and Sex of Partners [†]							
MSM	995	32	3.2	55	5.5	29	2.9
MSW	10,819	1842	17.0	551	5.1	18	0.2
MS(M&W)	428	19	4.4	33	7.7	13	3.0
MSUnknown	753	122	16.2	39	5.2	4	0.5
WSM	11,421	1360	11.9	332	2.9	15	0.1
WSW	262	4	1.5	0	0.0	0	0.0
WS(M&W)	1,019	134	13.2	34	3.3	0	0.0
WSUnknown	532	47	8.8	18	3.4	1	0.2
Education							
Less than HS/GED	3,667	579	15.8	184	5.0	9	0.2
High school/GED	10,029	1,611	16.1	479	4.8	34	0.3
Some college	9,057	1,089	12.0	319	3.5	29	0.3
4+ years college	2,716	187	6.9	37	1.4	8	0.3
Unknown	797	96	12.0	43	5.4	2	0.3

† MSM = men who have sex with men; MSW = men who have sex with women; MS(M&W) = men who have sex with both men and women; MSUnknown = men with unknown gender of sex partner(s); WSM = women who have sex with women; WSW = women who have sex with women; WS(M&W) = women who have sex with both men and women; WSUnknown = women with unknown gender of sex partner(s)

Figure 5. STD Positivity Rates by Patient Race/Ethnicity, 2009-2012

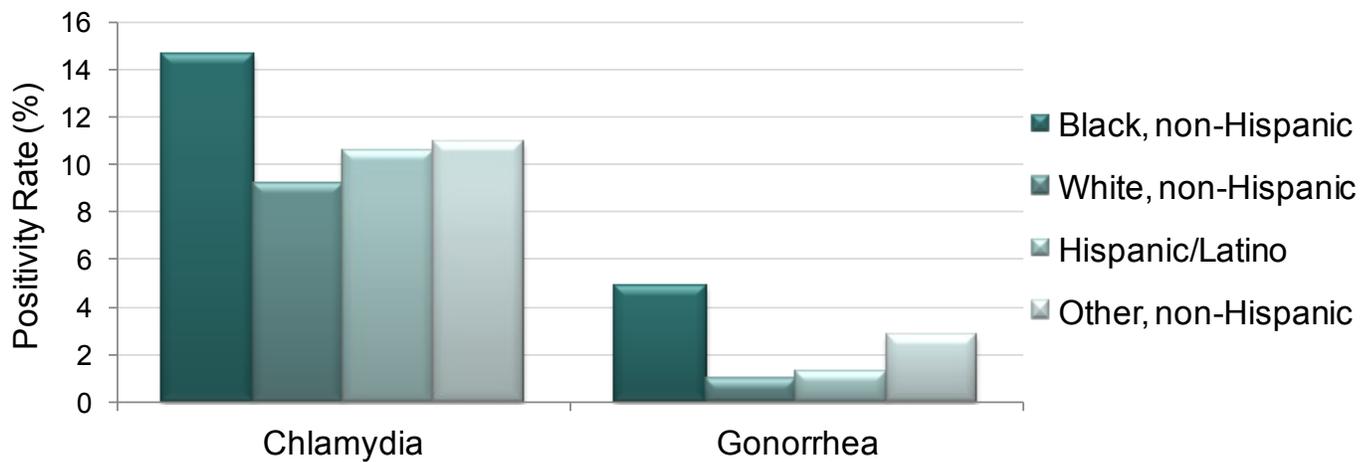


Table 7. STD Positivity Rates by Patient Risk Behaviors, 2009-2012

Characteristic*	Total	Chlamydia		Gonorrhea		Syphilis	
	N	N	%	N	%	N	%
Used condom last sex							
Yes	9,346	1,123	12.0	348	3.7	34	0.4
No	15,254	2,230	14.6	645	4.2	39	0.3
Anonymous Sex [†]							
Yes	2,325	302	13.0	104	4.5	8	0.3
No	15,426	2,025	13.1	526	3.4	14	0.1
Exchanged Sex [†]							
Yes	287	27	9.4	10	3.5	3	1.0
No	17,409	2,297	13.2	611	3.5	22	0.1
Marijuana use [†]							
Yes	7,529	1,242	16.5	389	5.2	19	0.3
No	11,311	1,349	11.9	361	3.2	14	0.1
Incarcerated [†]							
Yes	1,854	298	16.1	87	4.7	3	0.2
No	16,269	2,103	12.9	573	3.5	22	0.1
Number of sex partners [‡]							
0 partners	1,325	68	5.1	20	1.5	20	1.5
1 partner	12,869	1,633	12.7	394	3.1	28	0.2
2 partners	6,371	944	14.8	320	5.0	17	0.3
3+ partners	3,922	687	17.5	252	6.4	13	0.3

* Unknow n/missing categories not show n

† In the previous 12 months

‡ In the previous 3 months

NG Population Surveillance

In the Richmond metropolitan area (including the localities of Richmond City, Henrico and Chesterfield counties), there were 3,231 cases of gonorrhea diagnosed in 2010-2012 and reported to the Virginia Department of Health who were eligible to be interviewed for SSuN population surveillance.

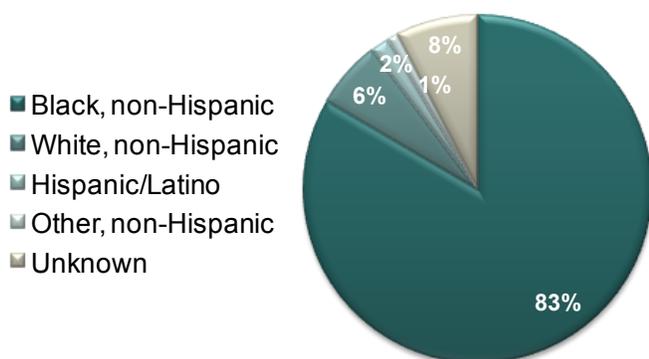
Of these cases, the majority were black and between 15-34 years of age (Figure 6, Table 8). Approximately 45% of all reported cases were male and 55% were female.

Most cases were diagnosed by hospital emergency rooms (28%), followed by family planning or reproductive health facilities (25%), and STD clinics (23%).

There were some notable differences in the type of diagnosing facility by gender (Figure 7). Men were most likely to be diagnosed with gonorrhea at STD clinics (32%) or hospital emergency rooms (30%), while women were most likely to be diagnosed at reproductive health facilities (42%) followed by hospital emergency rooms (26%).

As part of SSuN *Neisseria gonorrhoeae* (NG) population surveillance activities, HISS staff attempt to contact all individuals diagnosed with gonorrhea in the general population and ask these patients to participate in a brief phone interview. These interviews capture information on patient demographics and risk behaviors similar to that collected in the STD clinics.

Figure 6. Gonorrhea Cases by Race, 2010-12



A total of 1,060 gonorrhea cases were interviewed in the Richmond area from 2010-2012. Most of these cases were black, heterosexual, and between 20-24 years of age (Table 9), mirroring the overall demographic composition of all eligible gonorrhea cases.

Interviewed women tended to be younger than men (Figure 8). Women were also more likely to be either full-time or part-time students at the time of their interview (37%) compared to men (24%) (Figure 8). Forty-three percent of all interviewed cases were unemployed when they were diagnosed with gonorrhea.

A large proportion of interviewees reported engaging in high-risk behaviors (Table 10), such as not using a condom at last sexual encounter (68%), having sex with someone they were not able to contact again (15%), using marijuana (28%), and having more than one sex partner in the previous 3 months (43%).

Similar to the STD clinic surveillance data, reported engagement in these behaviors varied significantly by gender. For example, men were more likely to be older, employed, engage in anonymous sex, and report having 3 or more sexual partners in the previous 3 months. Women were less likely to report condom use at last sexual intercourse (28% vs. 38%).

Approximately 24% of interviewed men reported homosexual or bisexual orientation. Behaviors varied slightly by sexual orientation (not shown), although the small numbers of homosexual or bisexual individuals interviewed precluded meaningful analysis.

Basic characteristics of interviewed gonorrhea cases by diagnosing facility type are provided in Table 11. Men diagnosed by STD clinics and hospital emergency rooms tended to be younger. Men diagnosed at urgent care facilities were much more likely to have completed higher education (41% reported completing 4 or more years of college), and were less likely to be unemployed. Smaller differences were observed among women, although women diagnosed by hospital emergency rooms were more likely to be unemployed (56%) compared to women diagnosed by STD clinics (45%) or reproductive health facilities (46%).

Table 8. Characteristics of Gonorrhea Cases, SSuN Population Surveillance, 2010-2012

Characteristic	Total*		Male [†]		Female [†]		
	N	%	N	%	N	%	
Race							
Black, non-Hispanic	2,695	83.4	1,178	82.1	1,515	84.6	* Includes all cases of gonorrhea diagnosed in the localities of Richmond City, Henrico County, and Chesterfield County between 01/01/2010 and 12/31/2012 who were eligible to be interviewed for SSuN (these data may exclude some cases due to reporting delays)
White, non-Hispanic	203	6.3	102	7.1	100	5.6	
Hispanic/Latino	56	1.7	26	1.8	30	1.7	
Other, non-Hispanic	34	1.1	14	1.0	20	1.1	
Unknown	243	7.5	115	8.0	126	7.0	
Age							
0-9 years	4	0.1	1	0.1	3	0.2	† Male and female totals exclude 2 transgender cases and 2 cases with missing gender
10-14 years	17	0.5	5	0.3	12	0.7	
15-19 years	857	26.5	264	18.4	592	33.1	
20-24 years	1,268	39.2	555	38.7	713	39.8	
25-34 years	774	24.0	387	27.0	386	21.6	
35-44 years	196	6.1	135	9.4	60	3.4	
45+ years	113	3.5	88	6.1	24	1.7	
Unknown	1	0.0	0	0.0	1	0.1	
Provider Type							
Emergency Room	898	27.8	431	30.0	460	25.7	‡ Family planning / OB GYN / reproductive health facility
STD Clinic	740	22.9	461	32.1	278	15.5	
FP/GYN/RH [‡]	793	24.5	36	2.5	757	42.3	§ Includes hospital, public clinic (non-STD), school, jail/prison, military, outreach, HIV care clinic, and other
Urgent Care Clinic	284	8.8	237	16.5	46	2.6	
Private Provider/HMO	256	7.9	135	9.4	119	6.6	
Other [§]	246	7.6	124	8.6	121	6.8	
Unknown	20	0.6	11	0.8	10	0.6	
Totals	3,231		1,435		1,791		

Figure 7. Provider Type Diagnosing Gonorrhea Cases by Gender, 2010-2012

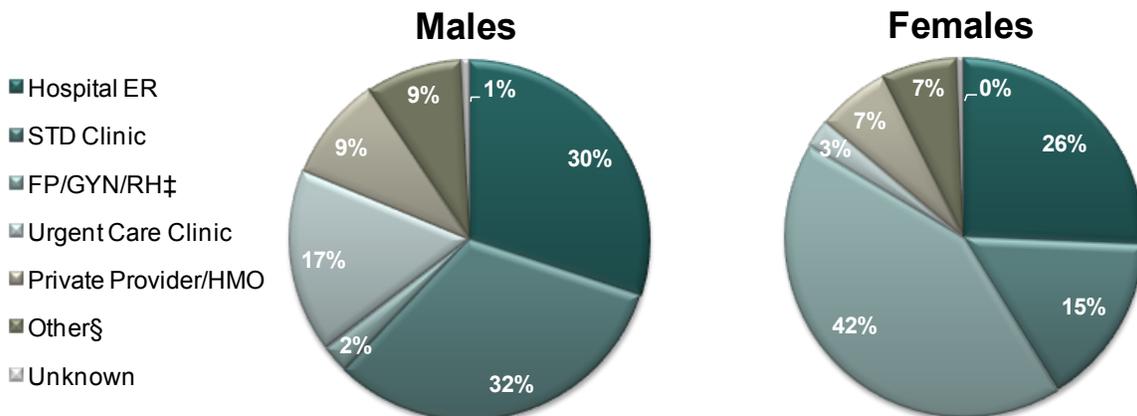


Table 9. Characteristics of Interviewed Gonorrhea Cases, 2010-2012

Characteristic	Total		Male [†]		Female [†]	
	N	%	N	%	N	%
Race						
Black, non-Hispanic	937	88.4	380	85.2	557	90.9
White, non-Hispanic	74	7.0	45	10.1	28	4.6
Hispanic/Latino	36	3.4	15	3.4	21	3.4
Other, non-Hispanic	12	1.1	5	1.1	7	1.1
Unknown	1	0.1	1	0.2	0	0.0
Age						
10-14 years	2	0.2	1	0.2	1	0.2
15-19 years	263	24.8	62	13.9	201	32.8
20-24 years	449	42.4	195	43.7	254	41.4
25-34 years	259	24.4	121	27.1	137	22.3
35-44 years	52	4.9	39	8.7	13	2.1
45+ years	35	3.3	28	6.3	7	1.1
Sexuality						
Heterosexual	917	86.5	334	74.9	583	95.1
Homosexual	64	6.0	62	13.9	2	0.3
Bisexual	71	6.7	43	9.6	27	4.4
Unknown	8	0.8	7	1.6	1	0.2
Education						
Less than HS/GED	278	26.2	84	18.8	194	31.6
High school/GED	391	36.9	182	40.8	209	34.1
Some college	307	29.0	125	28.0	181	29.5
4 years college or more	83	7.8	55	12.3	28	4.6
Unknown	1	0.1	0	0.0	1	0.2
Employment Status						
Employed	535	50.5	262	58.7	272	44.4
Unemployed	460	43.4	160	35.9	300	48.9
Other‡	47	4.4	19	4.3	28	4.6
Unknown	18	1.7	5	1.1	13	2.1
Student Status						
Not a student	726	68.5	337	75.6	388	63.3
Full-time student	246	23.2	81	18.2	165	26.9
Part-time student	87	8.2	27	6.1	60	9.8
Totals	1,060		446		613	

† Excludes 1 transgender individual

‡ Includes retired, homemaker, and unable to work

Figure 8. Age of Interviewed Gonorrhea Cases by Gender, 2010-2012

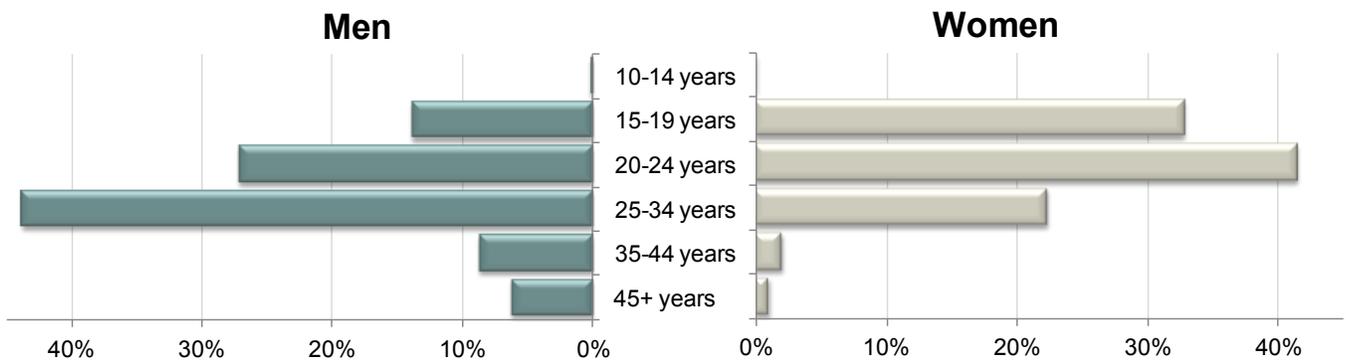


Figure 9. Student Status of Interviewed Gonorrhea Cases by Gender, 2010-2012

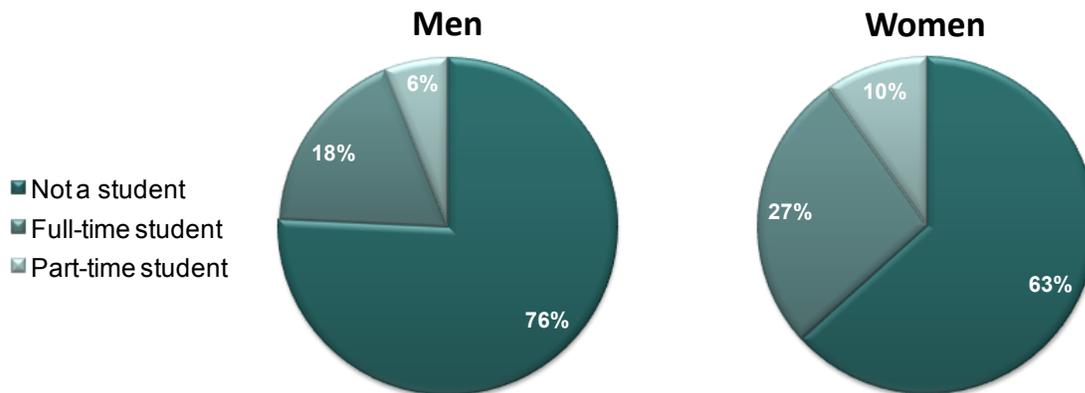


Table 10. Risk Behaviors of Interviewed Gonorrhea Cases by Gender, 2010-2012

Risk Behaviors*	Total		Male [†]		Female [†]	
	N	%	N	%	N	%
Used condom last sex	340	32.1	170	38.1	169	27.6
Anonymous sex‡	163	15.4	102	22.9	61	10.0
Exchanged sex‡	7	0.7	1	0.2	6	1.0
Incarcerated‡	90	8.5	58	13.0	32	5.2
Marijuana use‡	301	28.4	151	33.9	150	24.5
Number of sex partners§						
0 partners	10	0.9	6	1.3	4	0.7
1 partner	575	54.2	155	34.8	420	68.5
2 partners	281	26.5	145	32.5	135	22.0
3+ partners	171	16.1	126	28.3	45	7.3
Totals	1,060		446		613	

* Unknown/missing categories not shown

‡ In the previous 12 months

† Excludes 1 transgender individual

§ In the previous 3 months

Table 11. Characteristics of Interviewed Gonorrhea Cases by Facility Type, 2010-2012

Characteristic*	Men						Women					
	Hospital ER		Urgent Care		STD Clinic		Hospital ER		STD Clinic		FP/GYN/RH†	
	N	%	N	%	N	%	N	%	N	%	N	%
Age												
15-19 years	17	10.6	8	15.7	22	14.0	71	34.1	22	20.8	74	32.7
20-24 years	69	42.9	14	27.5	80	51.0	79	38.0	55	51.9	94	41.6
25-34 years	51	31.7	16	31.4	39	24.8	55	26.4	21	19.8	52	23.0
35-44 years	17	10.6	8	15.7	8	5.1	2	1.0	5	4.7	5	2.2
45+ years	6	3.7	5	9.8	8	5.1	1	0.5	3	2.8	0	0.0
Education												
Less than HS/GED	42	26.1	2	3.9	30	19.1	79	38.0	25	23.6	68	30.1
High school/GED	78	48.4	10	19.6	65	41.4	75	36.1	34	32.1	77	34.1
Some college	32	19.9	18	35.3	48	30.6	50	24.0	40	37.7	69	30.5
4 years college or more	9	5.6	21	41.2	14	8.9	3	1.4	7	6.6	12	5.3
Employment Status												
Employed	74	46.0	40	78.4	99	63.1	78	37.5	54	50.9	105	46.5
Unemployed	76	47.2	8	15.7	56	35.7	117	56.3	48	45.3	104	46.0
Other‡	9	5.6	2	3.9	1	0.6	9	4.3	4	3.8	11	4.9
Unknown	2	1.2	1	2.0	1	0.6	4	1.9	0	0.0	6	2.7
Totals	161		51		157		208		106		226	

* Some categories not shown † Family planning / OB GYN / reproductive health facility ‡ Includes retired, homemaker, and unable to work

Alexandria HD Now Participating in SSuN

The STD clinic at the Alexandria City Health Department started participation in SSuN activities in January, 2013. Alexandria is Virginia’s first SSuN site located outside of the Richmond area, and represents an important step towards expanding sentinel surveillance activities statewide. Using data collected by the Alexandria Health Department, the VDH is now able to analyze valuable information on patients living in the northern Virginia area. Summary data from the Alexandria clinic will be available in the next SSuN report.

In the future, the VDH plans to continue to expand enhanced and sentinel surveillance activities into other regions of Virginia, particularly those which experience a high burden of STDs or have large at-risk populations.



Health Informatics & Integrated Surveillance Systems
 Division of Disease Prevention
 Office of Epidemiology
 Virginia Department of Health

109 Governor Street
 P.O. Box 2448, Room 326
 Richmond, VA 23218-2448

SSuN Coordinator: River Pugsley
 river.pugsley@vdh.virginia.gov
 SSuN Principal Collaborator: Jeff Stover
 jeff.stover@vdh.virginia.gov

<http://www.vdh.virginia.gov/epidemiology/DiseasePrevention/data/>