

Syphilis in Georgia, 2009-2014

Kathryn Moore, MPH, Leonardo Parker, BS, and Joy Wells, MPH

Georgia Department of Public Health, Atlanta, GA

Corresponding Author: Kathryn Moore • 2 Peachtree St NW, Atlanta, GA 30303 • 404-657-6338 • Kathryn.Moore@dph.ga.gov

ABSTRACT

Background: In the period of 2002-2014, Georgia has ranked among the top three states in the United States for rates of primary and secondary syphilis cases, creating a continuing need to analyze the data and to plan and implement disease prevention efforts.

Methods: The present effort involved analysis of data from Georgia's electronic disease reporting system, State Electronic Disease Surveillance System (SendSS), including demographic characteristics by year for the period of 2009-2014 and behavioral data obtained from interviews with communicable disease specialists.

Results: In Georgia, from 2009-2014, primary and secondary syphilis, the infectious stages of the disease, were seen most commonly among black, non-Hispanic (77%) males (91%) between the ages of 20-29 (45%); 52% were males who have sex with other males.

Conclusions: Analysis of the data provides a better understanding of the populations affected by syphilis. It can enhance discussions about disease surveillance, prevention, and strategies to decrease the burden of this disease.

Key Words: communicable diseases, syphilis, Georgia, United States, MSM

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INTRODUCTION

Syphilis is transmitted by direct contact with a syphilis sore during vaginal, anal, or oral sex. If left untreated, syphilis can cause serious complications, including blindness, dementia, and/or paralysis, and can be transmitted from mother to baby or increase a person's risk of transmitting or acquiring HIV (Centers for Disease Control and Prevention, 2016). In the United States, syphilis was at its lowest rate in the years 2000-2001 but, since then, has been steadily increasing. Georgia has followed this trend and has, from 2002-2014, ranked among the top three states for primary and secondary syphilis case rates (Centers for Disease Control and Prevention, 2015).

METHODS

Providers and laboratories report positive syphilis test results to the local or state health department via the State Electronic Notifiable Disease Surveillance System (SendSS), telephone, fax, or mail. These results are followed up by communicable disease specialists (CDSs), who open field and interview records in SendSS to document case investigation efforts and information, provided by the patient, related to sexual risk behavior.

Data from 17,317 syphilis cases in Georgia residents diagnosed in 2009-2014 were extracted from SendSS and analyzed in SAS version 9.4. For syphilis, the Centers for Disease Control and Prevention (CDC) provides case definitions for disease stage classifications: primary,

secondary, early latent, or late latent. Before 2014, syphilis cases could be designated "syphilis, latency of unknown duration," but, starting in 2014, these cases have been grouped with late latent cases (Centers for Disease Control and Prevention, 2014). For the present analysis, syphilis cases of unknown latency were grouped with late latent cases for 2009 to 2013. Data were analyzed by disease stage, sex, race/ethnicity, age group, and sexual behavior.

Due to resource constraints, CDSs in many local health departments focus on cases that are in the primary, secondary, or early latent stages. This reduces the interview data that are available for analysis, including gender of sex partners, drug history, and other risk behaviors. Since interview data from 2009 were not completely transferred to the SendSS database, these data were analyzed for 2010-2014. Patients were categorized based on their current gender, and males were categorized as men who have sex with men if they had sex with a male in the past 12 months, men who have sex with women only if they had sex only with women during the past 12 months but not with a man in the same time period, or men who have unknown sex behavior if these interview questions were not answered because an interview was not performed with this patient or if the patient refused to answer these questions.

RESULTS

Table 1 shows the breakdown by disease stage for syphilis cases in Georgia: 6% primary syphilis, 28% secondary syphilis, 29% early latent syphilis, 36% late latent syphilis,

and 1% congenital syphilis. From 2009-2014, syphilis cases in Georgia increased by 28% overall; early latent cases

increased by 45%.

Table 1 - Syphilis Cases in Georgia by Disease Stage, 2009-2014

Disease Stage	Year of Diagnosis						Total
	2009	2010	2011	2012	2013	2014	
Primary Syphilis	179	148	186	164	202	212	1091
Secondary Syphilis	799	694	745	776	822	1099	4935
Early Latent Syphilis	820	703	752	675	862	1193	5005
Late Latent Syphilis	1049	1013	1103	885	1088	1148	6286
Total	2847	2558	2786	2500	2974	3652	17317

Table 2 presents demographic and limited behavioral data for primary and secondary syphilis cases. Most cases occurred among black, non-Hispanic (77%) males (91%) between the ages of 20-29 (45%). Among the 71% of males for whom information about sex partners was available, 52% reported sex with men. Syphilis infections among Hispanics increased by 144%. For cases between ages 15-

34, there were increases of more than 40%; decreases or minor increases were seen for older ages. In regard to gender and sexual behavior, there were decreases in the number of cases for females and males that have sex with women only, but there was an increase of 41% in cases for men who have sex with men.

Table 2. Demographics of Primary and Secondary Syphilis Cases in Georgia, 2009-2014

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	Year of Diagnosis													
	2009		2010		2011		2012		2013		2014		Total	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Gender														
Male	876	90%	754	90%	849	91%	877	93%	942	92%	1215	93%	5513	91%
Female	102	10%	88	10%	82	9%	63	7%	82	8%	96	7%	513	9%
Total	978		842		931		940		1024		1311		6026	
Race/Ethnicity														
Black, non-Hispanic	778	80%	671	80%	717	77%	746	79%	762	74%	981	75%	4655	77%
White, non-Hispanic	155	16%	120	14%	153	16%	127	14%	180	18%	208	16%	943	16%
Any race, Hispanic	32	3%	29	3%	25	3%	33	4%	45	4%	78	6%	242	4%
Other race, non-Hispanic	6	1%	4	0%	9	1%	8	1%	6	1%	12	1%	45	1%
Unknown race/ethnicity	7	1%	18	2%	27	3%	26	3%	31	3%	32	2%	141	2%
Total	978		842		931		940		1024		1311		6026	
Age group														
10-14 years	3	0%	0	0%	1	0%	1	0%	1	0%	0	0%	6	0%
15-19 years	46	5%	50	6%	45	5%	52	6%	42	4%	65	5%	300	5%
20-24 years	200	20%	197	23%	219	24%	238	25%	209	20%	303	23%	1366	23%
25-29 years	193	20%	178	21%	173	19%	200	21%	222	22%	339	26%	1305	22%
30-34 years	134	14%	127	15%	132	14%	152	16%	168	16%	215	16%	928	15%
35-39 years	129	13%	86	10%	90	10%	87	9%	127	12%	119	9%	638	11%
40-44 years	120	12%	87	10%	120	13%	85	9%	110	11%	103	8%	625	10%
45-49 years	87	9%	61	7%	71	8%	74	8%	83	8%	92	7%	468	8%
50+ years	65	7%	56	7%	80	9%	51	5%	62	6%	75	6%	389	6%
Total	978		842		931		940		1024		1311		6026	
Sex and Sex Behavior														
Female	102	10%	88	10%	82	9%	63	7%	82	8%	96	7%	513	9%
Men who have sex with men	508	52%	456	54%	518	56%	384	41%	541	53%	718	55%	3125	52%
Men who have sex with women only	143	15%	96	11%	95	10%	78	8%	95	9%	108	8%	615	10%
Men who have unknown sex behavior	225	23%	202	24%	236	25%	415	44%	306	30%	389	30%	1773	29%
Total	978		842		931		940		1024		1311		6026	

From 2010-2014, 69% of those with primary and secondary syphilis were interviewed. Of those, 24% had sex with an anonymous partner, 23% indicated they had sex while high or intoxicated, 5% were incarcerated, 3% exchanged sex for drugs or money, and 1% had sex with an injection drug

user, all within the 3 months prior to diagnosis of syphilis. From 2010-2014, patients who had sex with an anonymous partner increased by 143%. There were minimal increases for patients who had exchanged drugs and money for sex (3%) and patients who were incarcerated (5%). The number

of cases who had sex with an injection drug user increased from 9 cases in 2010 to 20 cases in 2014.

DISCUSSION/CONCLUSIONS

As cases of syphilis continue to increase and disease rates in Georgia remain in the top 3 in the country for primary and secondary syphilis, it is appropriate to use surveillance data to enhance public health efforts. These data help local staff dealing with sexually transmitted diseases (STDs) to target efforts to those most affected by syphilis, mainly black, non-Hispanic males of ages 20-29 who have sex with other males. This includes educating providers who serve these patients, examining data to identify local differences and evaluating the health departments' efforts to find and test sexual partners, services collectively known as partner services. For each public health district, top providers have been identified for visits to deliver educational materials and ensure complete reporting of cases. For each public health district, data are being analyzed and then presented and discussed with the district staff to identify, in their district, areas that can be targeted, such as a particular zip code, a risk behavior such as injection drug users, or a location where patients are often meeting partners. We are also looking at partner service efforts in each district to evaluate training or other needs related to finding partners, completing interviews, or testing/treating patients or their partners.

The increases in numbers of patients who have had sex with anonymous partners requires further investigation.

Anecdotally, CDSs tell us that many of their syphilis patients find sexual partners through internet dating sites. Because they may have only screen names for contact information, it is difficult for CDSs to find partners for testing and treatment. Recently, a variable asking about internet dating was added to SendSS. In the near future, a variable indicating which dating sites were used will be added.

Recommendations include further analysis of data related to the populations most affected, including geographic factors, repeated infections, HIV co-infections, and partner service evaluation.

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