Volume 6, Issue 1 May 8, 2017

Hamilton County Public Health - Epidemiology and Assessment

Syphilis Quarterly Report

Alexis Grimes Trotter, MPH, Epidemiologist

Syphilis Prevalence by Month in Hamilton County, Ohio (Jan 2016 – March 2017)

Table 1. Syphilis Cases by Month for Hamilton County Residents

Month	Cases of Syphilis 2016	Cases of Syphilis 2017
January	14	25
February	17	15
March	19	22
April	18	
May	17	
June	21	
July	15	
August	15	
September	15	
October	16	
November	21	
December	7	
Total	**195**	**62**

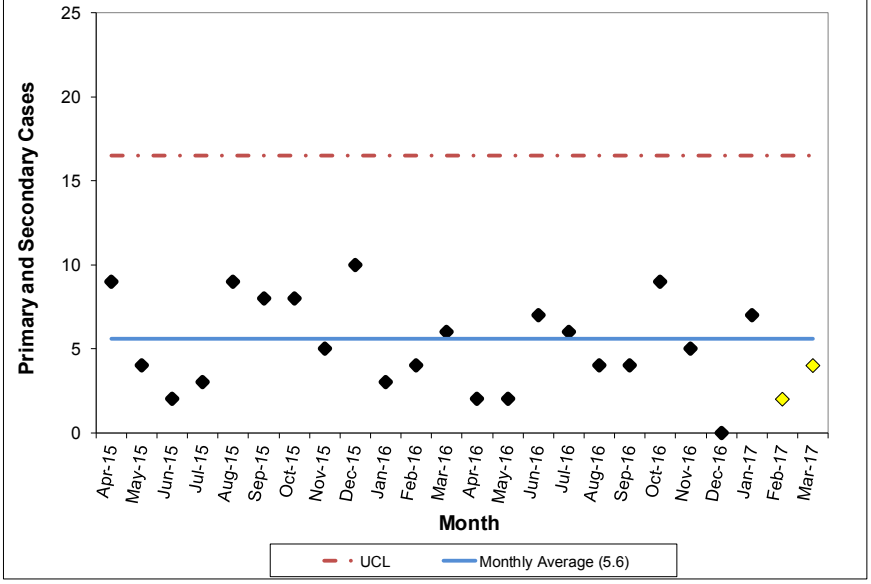
This report was created as a surveillance effort to help prevent new cases of syphilis within Hamilton County. Table 1 displays the breakdown of total syphilis cases for Hamilton County residents from January 2016 through March 2017 on a monthly basis. These include cases at any stage of disease (i.e. primary, secondary, latent, or congenital). Only syphilis cases that have been reported to the CDC were counted for analysis purposes in this report. In 2016, the highest number of syphilis cases occurred in June and November (21 cases). In 2017, the highest number of syphilis cases occurred in January (25 cases). The average number of syphilis cases per month were 20.3 and 20.7 for the years 2016 and 2017, respectively. In Q1 2017, there were 12 more cases of syphilis than in Q1 2016. Data from more recent months are the most likely to change as investigations are finished.

Syphilis cases are derived from partner services data in the Ohio Disease Reporting System and represent only those cases reported to the CDC. These data are provisional and subject to change when additional data are reported. Cases' residences were determined by address at diagnosis. Source: Ohio Department of Health (ODH), Ohio Disease Reporting System (ODRS). Data reported as of 05/04/2017.

Primary and Secondary Syphilis in Hamilton County, Ohio (April 2015 - March 2017)

One way to monitor primary and secondary (P&S) syphilis infections within Hamilton County is through the use of surveillance control charts. Factors that this control chart shows are the number of P&S syphilis cases for each month (black diamonds), control limits (red dashed lines), and the average number of cases (solid blue line). Data points most likely to change are marked in yellow. Control charts are used to detect unexpected events, such as a single point outside of the control limit, consecutive points above or below the average line, or two to three consecutive points near a control limit. When anomalies such as these occur, it may be beneficial to examine events surrounding the anomalies in order to devise a strategy to reduce the number of cases in subsequent months or to see which strategies already in place are effective. Figure 1 illustrates the control chart for P&S syphilis infections from April 2015 to March 2017. The monthly average number of cases (5.6) was calculated using data from July 2015-June 2016 and is reflected in the chart.

Figure 1. P&S Syphilis Control Chart



Syphilis cases are derived from partner services data in the Ohio Disease Reporting System and represent only those cases reported to the CDC. These data are provisional and subject to change when additional information is reported. Cases' residences were determined by address at diagnosis. Source: ODH, ODRS. Data reported as of 05/04/2017.

Demographics and Social Factors with High Risk for Syphilis Infection

The number of P&S cases is important to monitor as these are the stages in which a person is most likely to transmit the disease to another person. Table 2 and Figure 2 show the demographics and social factors that make up these P&S cases. Table 2 shows the percentage of P&S syphilis cases from 2016 and 2017 based on race, sex, and risk behavior. Around 70 percent of the P&S syphilis cases from 2016 and 2017 occurred among black Hamilton County residents. Additionally, 85 percent of the P&S syphilis cases from 2016-2017 were among male Hamilton County residents. Figure 2 displays the shift in age distribution of P&S syphilis cases in Hamilton County. Percentages for 2017 are based on small numbers and should be interpreted with caution.

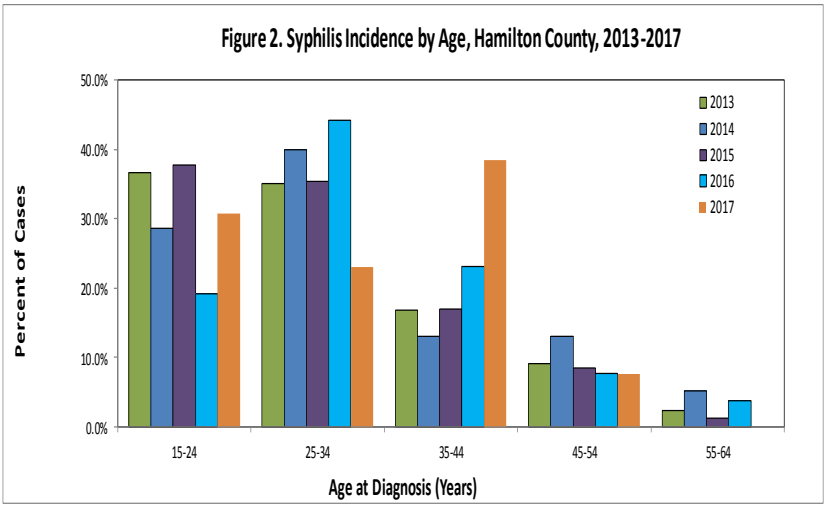
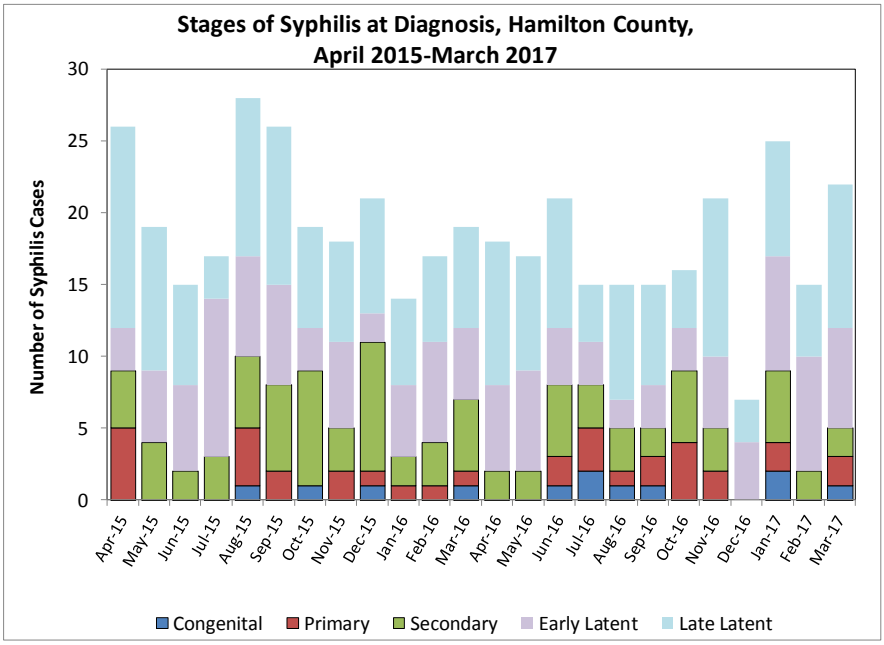


Table 2. Demographics of P&S Syphilis Cases

	Jan. - Dec. 2016		Jan. - March 2017	
	#	%	#	%
Race				
Black	33	63.5	13	100
White	15	28.8	0	0
Other	4	7.7	0	0
Sex				
Male	44	84.6	11	84.6
Female	8	15.4	2	15.4
Behavior				
MSM	32 of 52	61.5	6 of 13	46.2
HRH	13 of 52	25.0	5 of 13	38.5

These data are provisional and subject to change when additional data are reported. Cases' residences were determined by address at diagnosis. Source: ODH, ODRS. Data reported as of 05/04/2017. Percentages may not total to 100 percent due to rounding. High risk heterosexuals are residents who are not MSM but participate in risky behaviors such as having sex with men who have sex with men (MSM), HIV+, intravenous drug user (IDU), or anonymous people HRH status is also determined from factors such as having sex while intoxicated, exchanging sex for drugs, or having previous STIs. **Note: Table 2 MSM is now measured out of all cases.**

Stages of Syphilis Infection: Hamilton County



Syphilis infections are organized into different stages based on the clinical presentation of disease and duration of infection. Congenital syphilis cases are cases of syphilis in which the infection is transferred from mother to infant during pregnancy or delivery. Congenital syphilis cases serve as key indicators of community health as this stage of infection is easily preventable when proper healthcare is present. Transmission of syphilis is possible during primary, secondary, and early latent stages of disease. In particular, primary and secondary infections are considered highly infectious stages. During late latent syphilis, the patient may no longer be infectious and have no symptoms; however if the patient does not receive treatment the disease can develop into neurological problems, possibly leading to death.