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**Syphilis Prevalence by Month in Hamilton County, Ohio (January 2017-September 2018)**

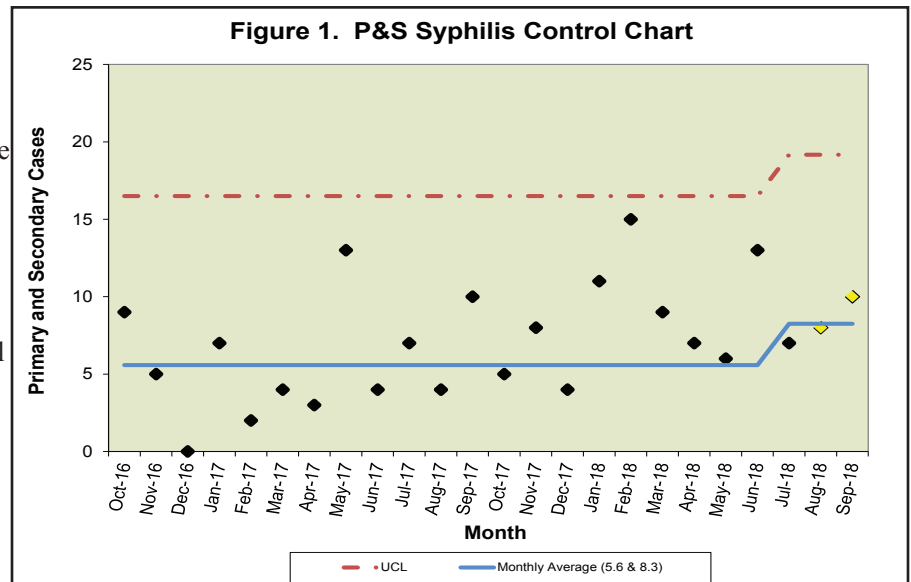
Month	Cases of Syphilis 2017	Cases of Syphilis 2018
January	25	31
February	17	29
March	22	33
April	13	26
May	24	16
June	20	31
July	19	27
August	20	19
September	19	19
October	13	
November	32	
December	23	
<b>Total</b>	<b>247</b>	<b>231</b>

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 2017 through September 2018 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 2017, the highest number of syphilis cases occurred in November (32 cases). In 2018, the highest number of syphilis cases occurred in March (33 cases). The average number of syphilis cases per month were 20.6 and 25.7 for the years 2017 and 2018, respectively. Through Q3 2018, there were 52 more cases of syphilis than through Q3 2017. 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 12/06/2018.

**Primary and Secondary Syphilis in Hamilton County, Ohio (October 2016-September 2018)**

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 October 2016 – September 2018. The monthly average number of cases (5.6) was calculated using data from July 2015-June 2016 and is reflected in the chart. There was a recalculation of the average starting July 2018 using data from July 2017 to June 2018 (8.3), in result of 8 consecutive cases above the average line.

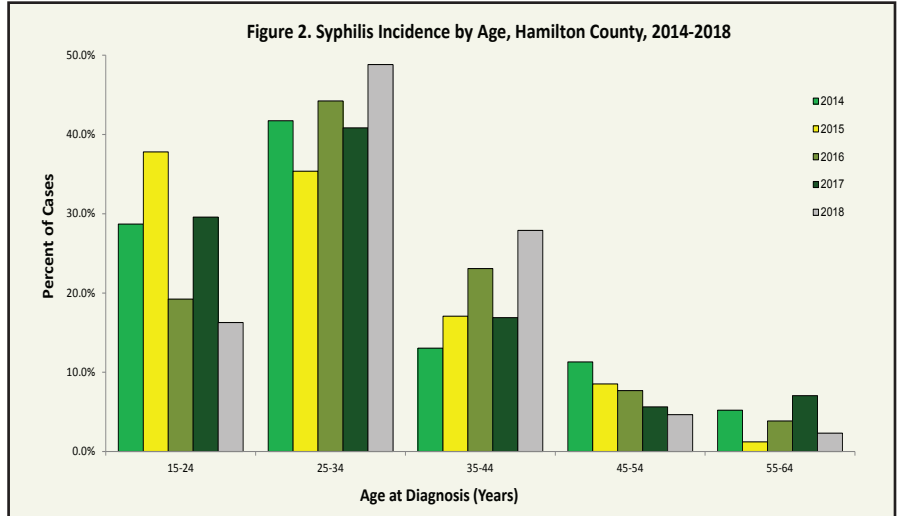


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## Demographics and Social Factors Associated with High Risk for Syphilis Infection

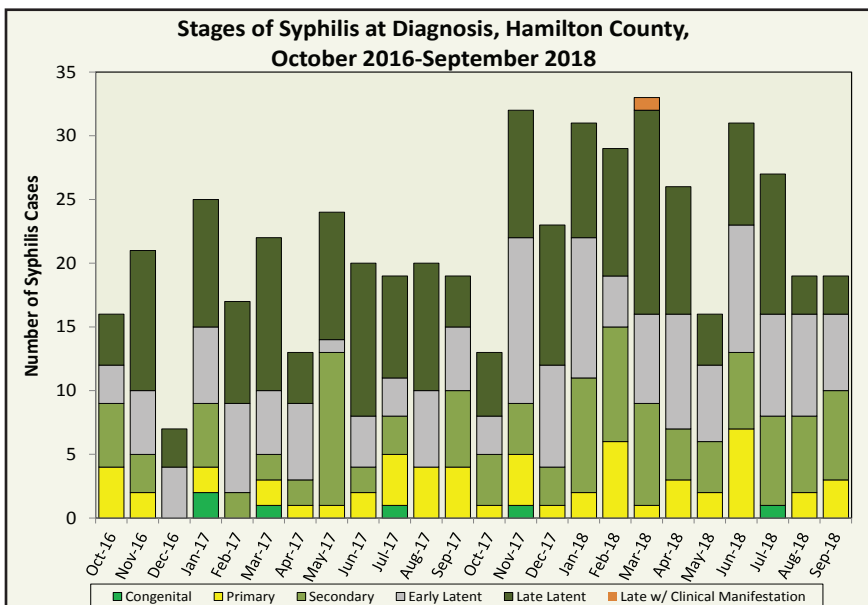
The number of P&S cases is important to monitor as these are the stages in which a person is most likely to transmit the disease to another person. Table 2 and Figure 2 show the demographics and social factors that make up these P&S cases. Table 2 shows the percentage of P&S syphilis cases from 2017 and 2018 based on race, sex, and risk behavior. About 70 percent of the P&S syphilis cases from 2017 occurred among black Hamilton County residents. Additionally, 90 percent of the P&S syphilis cases from 2017-2018 were among male Hamilton County residents. Figure 2 displays the shift in age distribution of P&S syphilis cases in Hamilton County.



	Jan. - Dec. 2017		Jan. - Sept. 2018	
	#	%	#	%
<b>Race</b>				
Black	50	70.4	65	75.6
White	19	26.8	16	18.6
Other	2	2.9	5	5.8
<b>Sex</b>				
Male	64	90.1	79	91.9
Female	7	9.9	7	8.1
<b>Risk Group</b>				
MSM	45 of 71	64.3	44 of 86	51.2
HRH	18 of 71	25.4	22 of 86	25.6
IDU	2 of 71	2.8	1 of 86	1.2

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 12/06/2018. Percentages may not total to 100 percent due to rounding. Percentages are based on availability of data for all cases. 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.

## 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.