



Hamilton County Public Health - Epidemiology and Assessment

Syphilis Quarterly Report

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Syphilis Infections by Month, Hamilton County, Ohio (January 2012 – June 2013)

Table 1. Syphilis Cases by Month for Hamilton County Residents

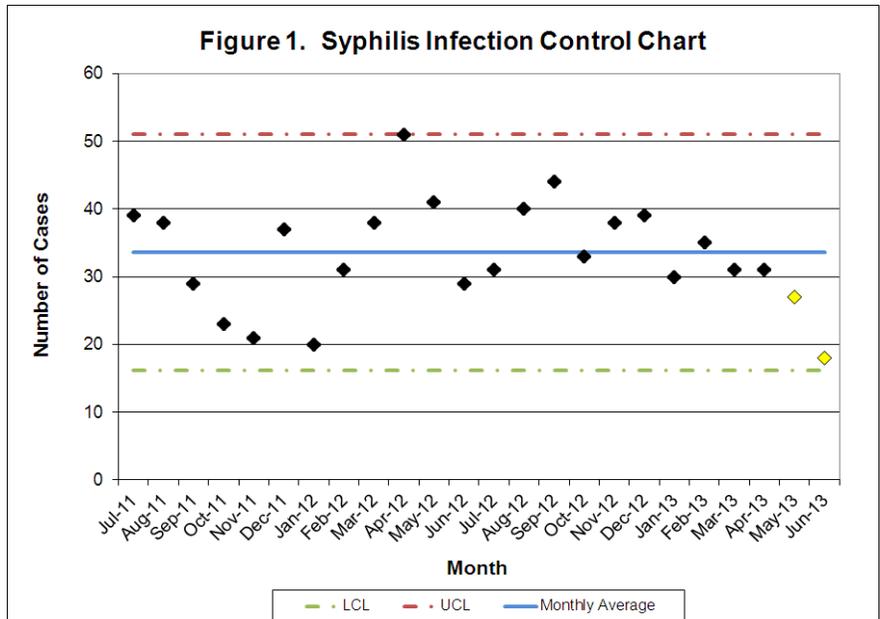
| Month | Cases of Syphilis 2012 | Cases of Syphilis 2013 |
|--------------|------------------------|------------------------|
| January | 20 | 30 |
| February | 31 | 35 |
| March | 38 | 31 |
| April | 51 | 31 |
| May | 41 | 27 |
| June | 29 | 18* |
| July | 31 | |
| August | 40 | |
| September | 44 | |
| October | 33 | |
| November | 38 | |
| December | 39 | |
| Total | 435 | 172 |

This report was created as a surveillance effort to help prevent new cases of syphilis within Hamilton County. Table 1 displays the breakdown of syphilis cases for Hamilton County residents from 2012 and 2013 on a monthly basis. Only syphilis cases that have been reported to the CDC were counted for analysis purposes in this report. In 2012, the highest number of syphilis cases occurred in April (51 cases). In 2013, the highest number of syphilis cases occurred in February (35 cases). The average number of syphilis cases per month were 36.3 and 28.7 for the years 2012 and 2013, respectively. In the second quarter of 2013, there were 45 less cases of syphilis compared to the second quarter of 2012. The number of cases for 2013 is likely to increase as the case information in May and June of 2013 become finalized. Subsequent reports will allow for a better comparison of 2013 cases as data are subject to change as more information is acquired.

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 are selected based on address at diagnosis. Source: Ohio Department of Health (ODH), STD Surveillance. Data reported as of 8/4/2013.

Surveillance of Syphilis Cases Diagnosed in Hamilton County, Ohio (2011 - 2013)

One way to monitor syphilis infections within Hamilton County is through the use of surveillance control charts. Factors that these control charts show are the number of syphilis cases for each month (black diamonds), control limits (red or green dashed lines), and the average number of cases (solid blue line). 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 or 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 see which strategies already in place are working. Figure 1 illustrates the control chart for syphilis infections from July 2011 to June 2013. All of the months in this time frame fell below the upper control limit for number of syphilis infections, except for April 2012. Future control charts will give a better understanding of the case counts for 2013. The monthly average number of cases (33.6) was calculated from January 2010-December 2012.



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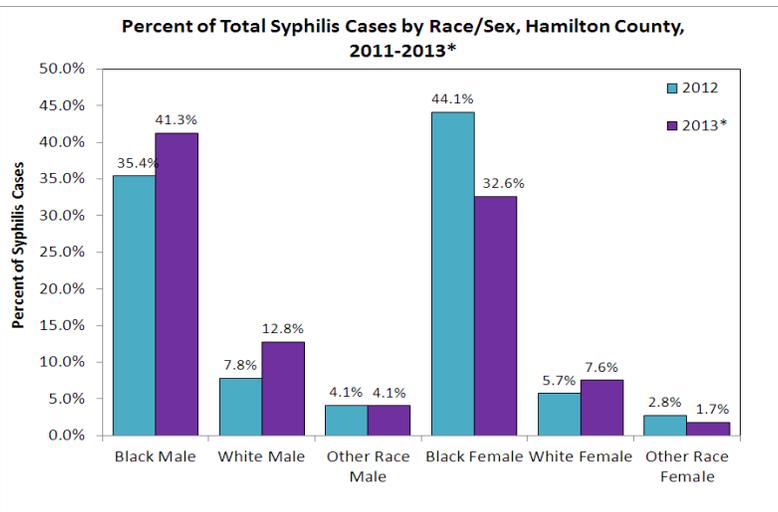


Demographics and Social Factors with High Risk for Syphilis Infection

Individuals with certain demographics and social factors are more likely to become infected with syphilis. Table 2 shows the percentage of syphilis cases from 2012 and 2013 based on race, age, sex, and some additional demographics. Approximately 75 percent of the syphilis cases from 2012 and 2013 occurred among black Hamilton County residents. Nearly 40 percent of the syphilis cases in 2012 were between the ages of 15-24. A switch in demographics occurred in January - June 2013 as a higher percentage of cases were between the ages of 25-34 and a higher percentage of cases were male compared to 2012. Identifying these aforementioned at-risk groups allows public health and health care the opportunity to create specific intervention methods for preventing the spread of syphilis. Figure 2 further classifies the differences in race/sex groups from 2012 to 2013. The largest changes occurred among the percentage of black male and black female cases. The demographics for 2013 are subject to change as more cases are identified in 2013.

Table 2. Demographics of Syphilis Cases

| | Jan. - Dec. 2012 | | Jan. - Jun. 2013 | |
|----------------------|------------------|------|------------------|------|
| | # | % | # | % |
| Race | | | | |
| Black | 346 | 79.5 | 127 | 73.4 |
| White | 59 | 13.6 | 35 | 20.7 |
| Other | 30 | 6.9 | 10 | 5.9 |
| Age | | | | |
| <1 | 6 | 1.4 | 2 | 1.2 |
| 1-14 | 1 | 0.2 | 0 | 0.0 |
| 15-24 | 167 | 38.9 | 54 | 31.7 |
| 25-34 | 130 | 30.3 | 63 | 36.5 |
| 35-44 | 62 | 14.5 | 35 | 21.0 |
| 45-54 | 54 | 12.6 | 15 | 9.0 |
| 55-64 | 13 | 3.0 | 3 | 1.8 |
| >65 | 2 | 0.5 | 0 | 0.0 |
| Sex | | | | |
| Male | 206 | 47.4 | 100 | 59.2 |
| Female | 229 | 52.6 | 72 | 40.8 |
| Transmission* | | | | |
| MSM | 63 of 160 | 39.4 | 32 of 96 | 33.3 |
| HRHF | 122 of 226 | 54.0 | 39 of 71 | 54.4 |



These data are provisional and subject to change when additional data are reported. Syphilis cases between January 2012 and June 2013 were used for analysis. Cases were selected based on address at diagnosis. Source: ODH, STD Surveillance. Data reported as of 8/4/2013. Percentages may not total to 100 percent due to rounding. *Cases were missing information from fields used to determine transmission. Percentages for transmission are sex-specific and based only on cases that had valid information within the required fields. High risk heterosexual females (HRHF) are women who self-identified as participating in sex with a known MSM, HIV+, IDU, or anonymous person. HRHF 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 diagnosed 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 is no longer infectious and has no symptoms; however if the patient does not receive treatment the disease can develop into neurological problems, possibly leading to death. As seen in Figure 3, the majority of the monthly cases in 2012 and 2013 are diagnosed as late latent cases.

