Hamilton County Public Health - Epidemiology and Assessment

HIV Quarterly Report

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New HIV Infections by Month, Hamilton County, Ohio (January 2011 - December 2012)

Table 1. Hamilton County New HIV Infections

Month	New Cases of HIV 2011	New Cases of HIV 2012
January	1	10
February	6	13
March	9	10
April	7	18
May	6	4
June	3	7
July	7	12
August	5	6
September	3	11
October	7	6
November	4	7
December	7	4
Total	**65**	**108**

This report was created as a surveillance effort to help prevent new cases of HIV within Hamilton County. Table 1 displays the breakdown of new, confirmed HIV cases for Hamilton County residents for 2011 and 2012 on a monthly basis. Only HIV cases where the resident previously tested negative, or where the resident had not been tested and then tested positive in the respective year, were counted for analysis purposes in this report. In 2011, the highest number of confirmed cases was seen in March (9 cases). In 2012, the highest number of new confirmed HIV cases occurred in April (18 cases). The average number of new HIV cases per month were 5.4 and 9.0 for the years 2011 and 2012, respectively. An additional 43 new cases of HIV were reported in 2012. By breaking this difference down further we can see that 17 more cases in the 1st quarter, 13 more cases in the 2nd quarter, 14 more cases in the 3rd quarter and 1 less case in the 4th quarter were reported during 2012 when compared to 2011.

New HIV cases are derived from partner services data in the Ohio Disease Reporting System and do not fully represent all new HIV infections. These data are provisional and subject to change when additional information is gained. Cases are selected based on address at diagnosis. Source: Ohio Department of Health (ODH), STD Surveillance. Data reported as of 1/6/2013.

## Surveillance of New HIV Cases Diagnosed in Hamilton County, Ohio (2011 - 2012)

One way to monitor HIV infections within Hamilton County is through the use of surveillance control charts. Factors that these control charts show are the number of new HIV cases for each month (green triangles), control limits (red dashed lines) and the average number of cases (solid blue line). Yellow triangles indicate data that are most likely to change in future reports. 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 new HIV infections from January 2011 to December 2012. All of the months in this time frame fell below the upper control limit for number of new HIV infections, except April 2012. Future control charts will give a better understanding of the 2012 data. The monthly average number of cases (6.4) was calculated from January 2010-December 2012.
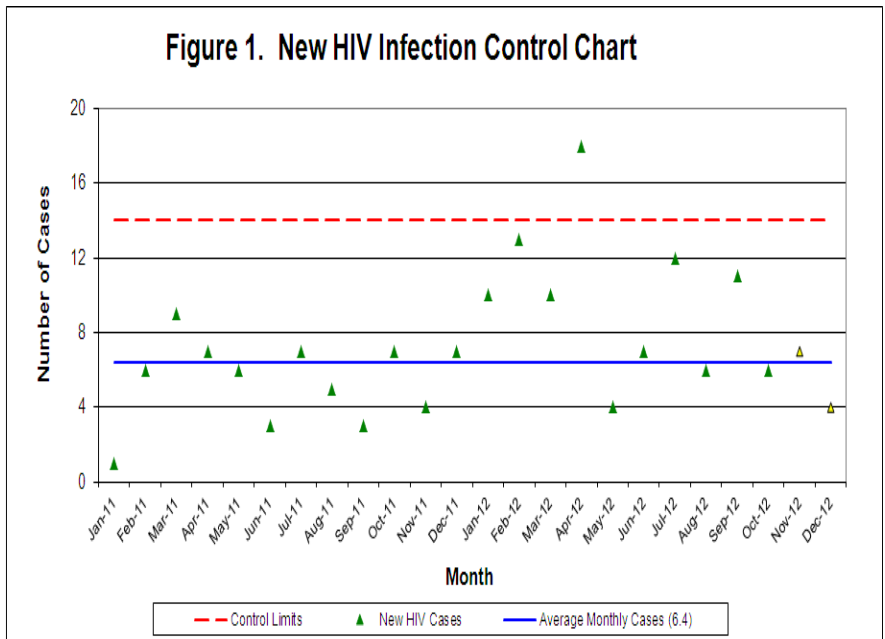
Figure 1. New HIV Infection Control Chart

New HIV cases are derived from partner services data in the Ohio Disease Reporting System and do not fully represent all new cases of HIV. These data are provisional and subject to change when additional information is gained. Cases are selected based on address at diagnosis. Source: ODH, STD Surveillance. Data reported as of 1/6/2013.

Demographics and Social Factors with High Risk for HIV Infection

Table 2 compares the race, age, sex and route of transmission of new HIV infection cases from 2011 to cases from 2012. The data reflect confirmed HIV cases that have been designated as newly testing positive and residing in Hamilton County. When examining race, a slight decrease in percentage of cases occurred between black Hamilton County residents in 2011 (70.8 percent) compared to 2012 (67.6 percent); this decrease was driven by an increase in percentage of white Hamilton County cases. A large difference in sex was apparent in both 2011 and 2012 as males contributed to approximately 70 percent of cases in both years. Figure 2, below, illustrates the contribution of race and sex to new HIV diagnoses in Hamilton County. As shown in Figure 2, an increase in percentage of black male and white male cases occurred during 2012. Age is also a key factor in new cases, as youth between the ages of 15 - 24 made up the highest percentage of new HIV cases for 2011 (38.5 percent) and 2012 (34.3 percent). As Table 2 illustrates, MSM transmission accounted for 70 percent and 49.4 percent of new male HIV infections in 2011 and 2012 respectively. Among females, High Risk Heterosexual Females (HRHF) accounted for nearly 45 percent of new infections. By understanding these demographics and high-risk factors that contribute most to new HIV infections, it is possible to create a specific and effective prevention strategy.
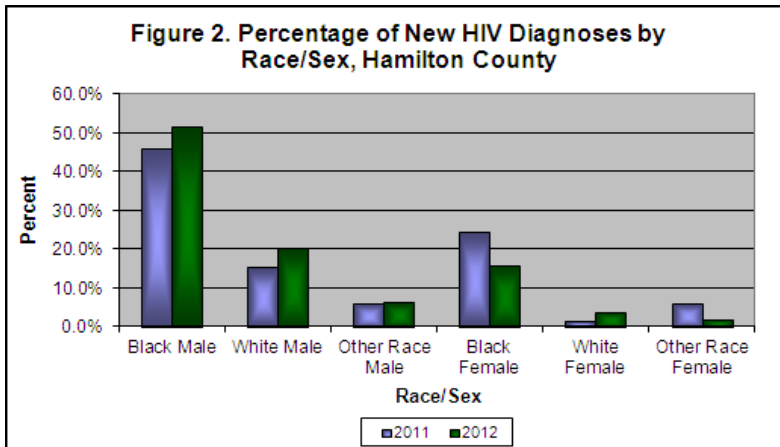
Table 2. Demographics of New HIV Cases

	2011		2012	
	#	%	#	%
Race				
Black	46	70.8	73	67.6
White	11	16.9	26	24.1
Other	8	12.3	9	8.3
Age				
<15	1	1.5	1	0.9
15-24	25	38.5	37	34.3
25-34	19	29.2	30	27.8
35-44	8	12.3	14	13.0
45-54	9	13.9	19	17.6
55-64	3	4.6	5	4.6
>65	0	0.0	2	1.9
Sex				
Male	44	67.7	85	78.7
Female	21	32.3	23	21.3
Transmission*				
MSM	21 of 30	70.0	38 of 77	49.4
HRHF	10 of 21	47.6	10 of 23	43.5

These data are provisional and subject to change when additional information is gained. New HIV positive cases between January 2011 and December 2012 were used for analysis. Cases were selected based on address at diagnosis. Source: ODH, STD Surveillance. Data reported as of 1/6/2013. Percentages may not total to 100 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.

Figure 2. Percentage of New HIV Diagnoses by Race/Sex, Hamilton County

Table 3. HIV Testing History of New HIV Infected Persons January 2011 – December 2012

	Black Residents	White Residents	All Residents
Previously Tested for HIV	76 of 98 (77.6%) (17.6%)	26 of 33 (78.8%) (10.8%)	111 of 142 (77.3%) (17.9%)

These data are provisional and subject to change when additional information is gained. Cases represent new confirmed HIV infections. Percentages and numbers are reflective of only completed data fields. Percentages given in red indicate the percent of cases with missing information for the previously tested for HIV variable. Source: ODH, STD Surveillance. Data reported as of 1/6/2013.

It is also important to evaluate the prevention and education processes being used to reduce the number of new HIV infections. As there is no direct way to evaluate HIV prevention education and compliance using the Ohio Disease Reporting System, an alternative measure, utilizing the number of new HIV infected individuals who were previously tested for HIV, was used. During HIV testing, patients received education on HIV prevention practices. Ideally, this education would have 100 percent compliance resulting in no new HIV infections from individuals who had a previous HIV test. However, data from January 2010 - December 2012 show that approximately 77 percent of new HIV infections were previously tested at least once before the current positive HIV result. This suggests there was a lack of education or compliance regarding HIV prevention within certain parts of the community. Interventions developed for the high-risk demographics shown above may benefit by focusing on improving education and compliance regarding HIV prevention and high-risk behaviors.