Annual Report on HIV/AIDS in Sonoma County

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Population

Sonoma County is a medium sized California County located sixty miles north of San Francisco. It is a mixed land use county, with approximately sixty-five percent of the acreage dedicated to open space and agriculture.\(^1\) In 2015 the estimated total population was 501,350 residents.\(^2\) According to 2015 Census estimates, Santa Rosa, the county seat and largest city, has about 35% of the total population of Sonoma County and ranks as the 28th largest city in the state. A majority of Sonoma County residents (70%) lives within nine separate cities, with the remainder living within the unincorporated areas of the county. From 2010 to 2015, Sonoma County’s population grew 3.8%.

Race/Ethnicity

Persons in Sonoma County are predominately White (63.9%) followed by Hispanic/Latino (26.7%). The distribution of race and ethnicity varies slightly by gender (Table 1). There is a slightly larger proportion of Hispanic/Latino and African American males and a slightly smaller proportion of White and Asian/Pacific Islander males compared to females (Table 1).

Table 1—Race and Ethnicity by Gender

<table>
<thead>
<tr>
<th></th>
<th>Males %</th>
<th>Females %</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=246,905</td>
<td>N=254,445</td>
<td>N=501,350</td>
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<tr>
<td>Hispanic/Latino</td>
<td>28.1</td>
<td>25.2</td>
<td>26.7</td>
</tr>
<tr>
<td>Not Hispanic, of 1 race</td>
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<td></td>
<td></td>
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<tr>
<td>White</td>
<td>62.8</td>
<td>65.0</td>
<td>63.9</td>
</tr>
<tr>
<td>African American</td>
<td>1.6</td>
<td>1.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Amer. Indian/Alaska Nat.</td>
<td>0.7</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>4.0</td>
<td>4.8</td>
<td>4.4</td>
</tr>
<tr>
<td>Not Hispanic, of &gt;1 race</td>
<td>2.8</td>
<td>2.9</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Foreign-born Persons

In 201, approximately 16.7% of Sonoma County residents reported a non-US birth country.\(^3\) The majority reported Hispanic/Latino ethnicity (63.5%).\(^3\) Among all Sonoma County persons reporting Hispanic/Latino ethnicity, 41% were foreign-born.\(^3\)

Age

Overall, residents of Sonoma County are older than residents of California (median age 40.5 vs. 35.6).\(^3\) The age distribution is not similar by race and ethnicity (Figure 1). Non-Hispanic/Latino Whites, Asian/Pacific Islanders, African Americans, and American Indian/Alaska Natives all have similar population distributions. Most notably, Hispanics/Latinos, the second largest population in Sonoma County, have a much younger age distribution when compared to these groups. Persons reporting one or more races (Multiracial, 2.7% of overall population) also have a much younger age distribution when compared to those non-Hispanic/Latino.

Figure 1—Population Distribution by Race and Ethnicity

Sonoma County, 2015
Executive Summary

As of December 31, 2015, there were at least 1,348 adults and adolescents living with HIV infection or AIDS who were diagnosed in Sonoma County (928 AIDS; 420 HIV, non-AIDS). When undiagnosed individuals are considered, the burden of disease increases to an estimated 1,600 persons living with HIV infection or AIDS. The demographics of persons newly diagnosed with HIV/AIDS and of those living with HIV infection continue to change and are important to understand in order to guide services and prevention efforts. Highlights and conclusions of this report include:

- After a decline from the peak of the AIDS epidemic in the early 1990s, the annual number of newly diagnosed HIV infections remained relatively stable at approximately 40 per year for close to a decade. Although it is too early to be certain, it appears that the number of newly diagnosed cases per year is declining again.
- The majority of newly diagnosed individuals are male.
- Similar to the overall numbers, the number of newly diagnosed HIV infections among males appears to be declining. The predominant risk factor in this group is men who have sex with men (MSM).
- The number of newly diagnosed HIV infections among women has remained relatively stable over the past 10 years. The primary risk factors for women recently diagnosed are heterosexual sex with a person who has, or is at high risk for HIV infection and injection drug use.
- Similar to the overall numbers, the number of newly diagnosed HIV infections among Whites has declined over the past 10 years.
- The number of newly diagnosed HIV infections among Hispanics/Latinos has remained stable. The most common risk factors among Hispanics/Latinos are MSM and heterosexual sex with a person who has, or is at high risk for HIV infection.
- Newly diagnosed persons with HIV infection or AIDS reside throughout the county.
- The number of newly diagnosed AIDS cases continues to decline, primarily a result of effective treatment.
- The majority of persons currently living with HIV or AIDS in Sonoma County are White males.

The Scope of the HIV/AIDS Epidemic in Sonoma County

The following section summarizes data from HIV/AIDS Confidential Case Report Forms submitted to the County of Sonoma Department of Health Services by health care providers. This information allows examination of disease and transmission trends and helps determine to whom services should be targeted.

The data presented in this report include only persons who were Sonoma County residents at the time of diagnosis with HIV infection or AIDS. Early in the epidemic surveillance focused solely on AIDS. This made sense at a time when treatment options were limited and a progression to the more severe phase of infection was inevitable. The number of newly reported AIDS cases per year has become less reflective of the true burden of the HIV/AIDS epidemic in Sonoma County for the following reasons:

- Many people with HIV infection who are on treatment are living longer and not progressing to AIDS for many years.
- Migration may result in a different number of persons with HIV infection or AIDS residing and requiring services in Sonoma County than are represented in this report. No system currently exists to track movement of individuals to another jurisdiction or out of state following an HIV infection or AIDS diagnosis.

Currently, in addition to the number of AIDS cases, public health surveillance closely follows new HIV diagnoses, total number of people living with HIV or AIDS and a set of outcome measures that address access to and utilization of appropriate medical care. Ensuring HIV infected individuals are diagnosed, linked to care, engaged in care, receiving appropriate treatment and achieving viral suppression improves the health of the individuals and decreases the likelihood HIV infection will be transmitted to others.

California instituted a non-name, unique identifier HIV reporting system on July 1, 2002 and changed to name-based reporting in April 2006. The HIV cases reported here include only name-based cases reascertained or reported following the implementation of the 2006 law.

Because many who are living with HIV infection have not yet been tested and do not know their status, the figures in this report underestimate the true scope of HIV infection in Sonoma County.
To evaluate trends over time, incident cases are evaluated by date of first positive HIV test, regardless of current AIDS status. Because the number of cases reported each year is relatively small, the current years’ data is presented with the three most recent five year time periods for comparison (Table 2). The 2015 data itself should be interpreted with caution as the overall number of cases is small and subject to significant fluctuations between years.

In 2015, 27 persons were newly diagnosed with HIV infection. Of these, five were diagnosed late in infection with a coincident AIDS diagnosis at or within three months of HIV diagnosis. The total number of new diagnoses is slightly lower than the average over the past ten years, but still within the range of previously observed counts (range 24-47 cases, 2006-2015).

Table 2—Selected Characteristics of Persons Recently Diagnosed with HIV Infection or AIDS
Sonoma County, December 31, 2015

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>5 YR AVE</td>
<td>%</td>
<td>N</td>
<td>5 YR AVE</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>53</td>
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<td>193</td>
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<tr>
<td>Diagnosis</td>
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<tr>
<td>HIV only</td>
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<td>HIV and later AIDS</td>
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<td></td>
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<td></td>
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<tr>
<td>HIV/AIDS co-diagnosed</td>
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</tr>
<tr>
<td>Gender</td>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
<td>39</td>
<td>8</td>
<td>15</td>
<td>24</td>
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<tr>
<td>Race/Ethnicity</td>
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<tr>
<td>White</td>
<td>174</td>
<td>35</td>
<td>65</td>
<td>130</td>
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<tr>
<td>Latino</td>
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<td>11</td>
<td>21</td>
<td>41</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
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<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>African American</td>
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<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Multi-Race</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Age at Diagnosis</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>&lt;13</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13-19</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>20-29</td>
<td>40</td>
<td>8</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td>30-39</td>
<td>94</td>
<td>19</td>
<td>35</td>
<td>51</td>
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<tr>
<td>40-49</td>
<td>82</td>
<td>16</td>
<td>31</td>
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<td>50-59</td>
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<td>33</td>
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<tr>
<td>60+</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>9</td>
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<tr>
<td>Mode of Exposure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSM</td>
<td>139</td>
<td>28</td>
<td>52</td>
<td>115</td>
</tr>
<tr>
<td>MSM/PWID</td>
<td>35</td>
<td>7</td>
<td>13</td>
<td>25</td>
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<tr>
<td>PWID</td>
<td>21</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Heterosexual Contact</td>
<td>51</td>
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<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Risk not Specified/Unknown</td>
<td>18</td>
<td>4</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Gender

In 2015, 22 new cases of HIV infection were men and five were women. Although women account for a minority of those newly diagnosed with HIV infection the number of new infections in women has remained stable between 2001 and 2015, accounting for <20% of new diagnoses (Table 2). Women as a group of special concern are addressed on Page 8.

Race/Ethnicity

In 2015, the majority of new cases reported White race followed by Hispanic/Latino ethnicity (Table 2). Although Hispanics/Latinos account for a minority among those newly diagnosed with HIV infection, the proportion of newly infected persons reporting Hispanic/Latino ethnicity has increased from 21% between 2001-2005 to 25% between 2011-2015 (Table 2). Hispanics/Latinos as a group of special concern are addressed on Page 8.

Age

Persons aged 30-49 had the highest proportion of new diagnoses of HIV infection, followed by those aged 40-49 and 20-29 (Table 2).

A new pediatric HIV case was reported in 2013 in a child who was a recent immigrant to the US. The most recent domestically acquired pediatric HIV infection in Sonoma County occurred in 2000.

Mode of Exposure

A hierarchical index following the Centers for Disease Control and Prevention guidelines is used to describe risk for acquiring HIV infection (Technical Notes, Page 20). In all tables, each case is counted only once even though the person may have reported multiple modes of exposure.

MSM remains the most frequently reported risk factor for HIV infection. The second most frequently reported known risk factor is heterosexual sex with a person who has, or is at, high risk for HIV infection (Table 2).

Although MSM is the most frequently reported risk factor, an emerging risk factor of concern is persons for whom no risk factor is either identified or reported. The proportion of persons with no known risk factor has increased from 7% between 2001 and 2005 to 19% between 2011 and 2015 (Table 2). Persons with no reported or identified risk are more often non-White compared to those with known risk (56% non-White among persons with NIR vs. 38% non-White with known risk).

Geography

Newly diagnosed persons with HIV infection reside throughout the county (Figure 2). Guerneville (zip code 95446) has the highest rate of recently diagnosed cases of HIV infection between 2011 and 2015 (N=10 cases, Figure 2).

Other areas with high rates of diagnosis are throughout Santa Rosa (N=24, 95404; N=16, 95401; N=16, 95403) and Sebastopol (N=11, 95472). The greatest number of new infections, however, is occurring in Santa Rosa. Six persons reporting PO Boxes as a primary address were excluded from the map.
**Indicators of Risk for HIV Infection**

**Increase in STI Rates**

Sexually transmitted infections (STIs) continue to be a problem in Sonoma County. Rates of Chlamydia and Syphilis are increasing in Sonoma County as well as in other Bay Area counties. In addition to complications from the diseases themselves, STIs can increase the risk of HIV transmission.

The rate of Chlamydia has been steadily increasing from 187 new cases per 100,000 population in 2008 to 378 new cases per 100,000 population in 2015 (Figure 3). In 2015, women and men aged 20-24 years old had the highest incidence rate of Chlamydia with rates of 3,020 and 1,292 cases per 100,000 respectively. People of color, particularly Hispanics/Latinos and African Americans, are disproportionately affected by Chlamydia (data not shown).

The rate of Gonorrhea has increased sharply in recent years from 14 cases per 100,000 persons in 2008 to 88.5 cases per 100,000 persons in 2015 (Figure 3). Women and men aged 20-24 years old have the highest incidence rates of Gonorrhea with 204 and 312 cases per 100,000 population in 2015 (data not shown).

Sonoma County had experienced a significant increase in primary and secondary syphilis in 2012 with 40 cases and remains high in 2015 with 48 cases. The majority of cases were diagnosed among MSM. This trend is similar to California, where outbreaks of syphilis have occurred in MSM. In recent years, however, a small number of cases in both heterosexual men and women were reported in Sonoma County, indicating a notable shift in the epidemic.

**Substance Use**

Substance use contributes to HIV transmission in many ways, including direct transmission via shared needles, impairing judgment and potentially facilitating high risk sexual behavior and, with some substances, decreasing the effectiveness of and adherence to antiviral treatment.

The use of methamphetamines contributes to risky sexual behavior that facilitates the transmission of sexually transmitted diseases, including HIV. A 2005 study of MSM who do not inject drugs in San Francisco found that nearly one quarter of those recently infected reported amphetamine use in the past twelve months. Overall, researchers estimated that the annual incidence of HIV infection among MSM who use amphetamines was three times higher than non-users.

In addition to the effect methamphetamines have on behavior, there are numerous negative health consequences. For persons already infected with HIV, methamphetamine use may decrease the effectiveness of antiretroviral therapy causing the individual’s viral load to increase, which in turn causes both a worsening of disease and increased likelihood of transmission.

In Sonoma County, methamphetamine was listed as a primary drug of choice for 29% of persons entering publicly funded treatment in fiscal year 2014-15. A concerning, emerging trend is the reappearance of heroin use among those entering publicly funded treatment centers. In fiscal year 2014-15, 13.7% of persons listed heroin as the primary drug of choice up from below 10% in fiscal year 2010-11.

National reports suggest that persons, especially youth, who might otherwise abuse prescription drugs are switching to heroin due to its low cost and availability.
Groups of Special Concern

Hispanic/Latino Persons

The Hispanic/Latino population in Sonoma County is increasing, currently representing 27% of the estimated total 2015 population compared to 14% in 1995.4,9 Forty-one percent of Sonoma County Hispanic/Latinos are foreign born, the majority of these were born in Mexico.10 As a group, Hispanics/Latinos may face significant challenges to receiving medical care; approximately 19% are uninsured.10 Recent immigrants from Mexico may face multi-factorial barriers to social services and health care.11

Nationally, Hispanics/Latinos continue to be disproportionately affected by the HIV/AIDS epidemic. While 17% of the US population is Hispanic/Latino, Hispanics/Latinos accounted for approximately 23% of newly diagnosed HIV infections nationwide in 2013. Approximately 2% of all persons living with HIV in the US in 2012 were Hispanic/Latino.12

Since 1981, 293 Hispanics/Latinos have been diagnosed with AIDS or HIV infection in Sonoma County. Of these, 213 are currently living with HIV infection or AIDS. While the total number of new cases per year has declined overall, the number of new Hispanic/Latino cases has remained relatively constant, averaging about 9 cases per year since 2006 (range 4-14 cases per year). Fifty-five percent of Hispanics/Latinos with HIV infection and known birth country are immigrants from other countries, a higher proportion compared to all Hispanic/Latinos, in Sonoma County where approximately 41% are foreign-born.10

The most commonly reported mode of exposure for all persons with HIV infection or AIDS is MSM, followed by MSM/PWID, PWID only, and heterosexual exposure to a person who has, or is at high risk for HIV infection. For Hispanics/Latinos, MSM remains the most common exposure; however, the proportion of MSM is lower than that in non-Hispanics/Latinos (62% vs. 67%, respectively, Table 3). Other risk factors, notably heterosexual exposure to someone who has, or is at high risk for HIV infection and unknown risk account for a larger proportion of Hispanic/Latino cases than that of non-Hispanic/Latino cases (15% vs. 10%, 8% vs. 4%, respectively, Table 3).

Women

Since 1981, 217 women have been diagnosed with HIV infection or AIDS in Sonoma County (156 AIDS, 61 HIV). Of these, 158 are currently living with HIV infection or AIDS. Since 2006, an average of five women were diagnosed with HIV infection each year (range 2-10 cases per year).

Women of color accounted for approximately 44% new diagnoses of HIV infection in women between 2009 and 2015, higher than the overall proportion in Sonoma County where 34% of all women are non-White. In addition, the proportion of new diagnoses among non-white women is slightly higher than that of non-White men for the same time period (44% vs. 40% respectively).

The primary reported risk factors for women living with HIV infection or AIDS are heterosexual contact with someone who has, or is at high risk for HIV infection (61%), followed by intravenous drug use (25%, Table 5, Page 11).

Factors affecting HIV infection among women include increased risk of transmission during vaginal intercourse (compared to the risk during vaginal intercourse for men) and lack of awareness of their male partners’ past or current risk behavior.13

Late Entry to Care

Persons are considered to have late entry to care if their AIDS diagnosis occurred at the same time or within three months of their first diagnosis of HIV infection. It is possible that these persons were aware of their previous diagnosis of HIV, but were not reported to the County until their AIDS diagnosis. Further study is needed to evaluate whether these persons are truly late entry.

Twenty-five percent of persons diagnosed with HIV infection since 2011 were diagnosed with AIDS within three months. Cases who have late diagnoses are more often Latino (38% among co-diagnosed, 21% among those not co-diagnosed), less often MSM (49% among co-diagnosed, 65% not co-diagnosed), and more often have unknown risk (24% among co-diagnosed, 17% not co-diagnosed).

### Table 3—Persons Living with HIV Infection or AIDS by Exposure Type and Ethnicity Sonoma County, December 31, 2014

<table>
<thead>
<tr>
<th>Exposure Type</th>
<th>Hispanic/Latino</th>
<th>Non-Hispanic/Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>125 (62%)</td>
<td>760 (67%)</td>
</tr>
<tr>
<td>MSM/PWID</td>
<td>10 (5%)</td>
<td>81 (7%)</td>
</tr>
<tr>
<td>PWID</td>
<td>14 (7%)</td>
<td>136 (12%)</td>
</tr>
<tr>
<td>Heterosexual Exposure</td>
<td>31 (15%)</td>
<td>109 (10%)</td>
</tr>
<tr>
<td>Blood Products or Transplant</td>
<td>1 (0%)</td>
<td>3 (0%)</td>
</tr>
<tr>
<td>No Identified or Reported Risk</td>
<td>17 (8%)</td>
<td>40 (4%)</td>
</tr>
<tr>
<td>Perinatal or Childhood Exposure</td>
<td>4 (2%)</td>
<td>7 (1%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>202 (15%)</strong></td>
<td><strong>1136 (85%)</strong></td>
</tr>
</tbody>
</table>
The number of Sonoma County residents diagnosed with HIV or AIDS who had no reported date of death as of December 31, 2015 were used to calculate the number of people living with HIV infection or AIDS. Only those living in Sonoma County at the time of their HIV or AIDS diagnosis are included in this analysis. It is possible that some deaths may not have been reported (and not included in this data) especially if the person died outside the county.

As of December 31, 2015, there are at least 1,348 adults and adolescents living with HIV infection or AIDS who were diagnosed in Sonoma County (928 AIDS; 420 HIV, non-AIDS). It is estimated that at the end of 2015 there were approximately 1,600 persons living with HIV infection or AIDS in Sonoma County. This figure is based on a national estimate that assumes that 12.8% of persons who are HIV positive are unaware of their infection.  

### Gender

The majority of persons living with HIV infection or AIDS are male (88%, Table 4). Although the number of females living with HIV is comparatively small (N=158, women represent a group of special concern for HIV infection (see Page 8).

### Race/Ethnicity

The majority of persons currently living with HIV infection or AIDS report White race (74%, Table 4). Compared to the Sonoma County population, males overall and White and African American persons represent a larger proportion of cases of HIV infection and AIDS (74% vs. 64%, 5% vs. 1%, respectively, Table 4). Hispanic/Latino and Asian/Pacific Islanders represent a smaller proportion of cases when compared to the total Sonoma County population (16% vs. 27%, 2% vs. 4% respectively, Table 4).

### Mode of Exposure

The majority of males living with HIV infection or AIDS report having sex with men with or without intravenous drug use as their primary exposure (75% MSM + 12% MSM/PWID, Table 5), whereas females report heterosexual contact or intravenous drug use as the primary exposure.
(61% HET and 25% PWID, Table 5). Compared to persons recently diagnosed with HIV infection, those currently living with HIV infection or AIDS include a higher proportion of MSM exposures (66%, Table 5 vs. 60%, Table 4) and a smaller proportion of persons with unknown risk (5% Table 5 vs. 19% Table 4).

### Geography and Migration

Current residence information including zip code data is collected as part of the surveillance process at diagnosis of HIV, report of progression to AIDS, and when surveillance staff are notified of address changes. As a result, information on current residence is available for most persons living with HIV infection.

Of the 1,348 persons currently living with HIV infection who were also diagnosed in Sonoma County, 960 remain in Sonoma County (71%) and reside throughout the county (Figure 4). Areas with higher concentrations of persons living with HIV infection include the West County zip codes of 95446 (Guerneville), 95462 (Monte Rio), and 95465 (Occidental). Other zip codes with moderate concentrations of persons living with HIV include 95425 (Cloverdale) and 95421 (Cazadero).

At least 20% of persons originally diagnosed with HIV infection in Sonoma County have current zip codes out of county but within California (N=195) or out of state (N=102). Of the 960 with Sonoma County addresses, 53 were PO Boxes and not included in the analysis.
From January 1, 1981 through December 31, 2015, 2,224 Sonoma County residents have been reported with AIDS (Figure 5). Of these cases, 1,296 have died, resulting in a case fatality ratio of 58% over the course of the epidemic. However, the overall mortality rate has fallen dramatically over the years. This reflects the gradual transition of AIDS from a fatal infection to a chronic illness due to improving treatment.

Concomitantly, the total number of persons living with AIDS has steadily increased over time (Figure 5). The decline in the number of newly diagnosed AIDS cases is partially due to better management of HIV causing a delay in conversion to AIDS. Currently, there are 928 persons living with AIDS who were diagnosed in Sonoma County.

Since 1992, when the AIDS epidemic peaked in Sonoma County at 205 cases reported (largely due to expansion of the case definition by the CDC), the number of newly diagnosed AIDS cases by year has dropped dramatically. Between 2006 and 2015, an average of 29 AIDS cases were diagnosed each year (range 11 in 2015; 56 in 2006).

In 2015 there were 11 new AIDS cases and 21 new cases of HIV infection reported to Sonoma County Public Health. Of the 11 AIDS cases, 6 were conversions (prior diagnosis of HIV to AIDS) and the remaining 5 were first reported as simultaneous diagnoses of HIV infection and AIDS.

**Race/Ethnicity**

The cumulative incidence rate (CIR) by race/ethnicity estimates the rate at which a particular race or ethnic group is being diagnosed with AIDS (Table 6). The Other/Unknown classification of race/ethnicity includes Asian/Pacific Islanders (n=28), American Indian/Alaska Natives (n=14), and Multi-Race (n=17). These groups were combined into one category because the number of cases for any one group was too small to calculate a statistically reliable CIR.

African Americans had the highest CIR followed by Whites. However, it is important to note that the fewer cases of AIDS in African Americans (n=77) compared to Whites (n=1859) and Hispanics/Latinos (n=229) may result in a less accurate representation of the CIR for African Americans. Hispanics/Latinos and the Other groups had a significantly lower CIR than Whites or African Americans.
Age at Diagnosis

When diagnosed with AIDS, women are significantly younger than men (38 vs. 41 years, p=0.01 T-test with unequal variances). For both men and women the largest proportion of cases are diagnosed with AIDS between ages 30 and 39 (38% of males, 35% of females), followed by age 40-49 (35% of males, 22% of females, Table 7).

Exposure Category

The majority of male AIDS cases reported having sex with men as the primary exposure category, followed by MSM/PWID and PWID (79%, 12% and 4%, respectively, Table 8). The majority of females reported heterosexual exposure (48%) or PWID (35%) as primary exposures, followed by no identified or reported risk (8%, Table 8).

Table 7—Age at Diagnosis for All AIDS Cases
Sonoma County, 1981—2015

<table>
<thead>
<tr>
<th>Age</th>
<th>Males</th>
<th>Females</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>&lt;13</td>
<td>2</td>
<td>&lt;1</td>
<td>6</td>
</tr>
<tr>
<td>13-19</td>
<td>3</td>
<td>&lt;1</td>
<td>2</td>
</tr>
<tr>
<td>20-29</td>
<td>202</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>30-39</td>
<td>777</td>
<td>38</td>
<td>54</td>
</tr>
<tr>
<td>40-49</td>
<td>721</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>50-59</td>
<td>282</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>60+</td>
<td>81</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>2068</td>
<td>93</td>
<td>156</td>
</tr>
</tbody>
</table>

Table 8—AIDS Cases by Exposure Category and Gender
Sonoma County, 1981—2015

<table>
<thead>
<tr>
<th>Exposure Category</th>
<th>Males</th>
<th>Females</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>MSM</td>
<td>1625</td>
<td>79</td>
<td>--</td>
</tr>
<tr>
<td>MSM/PWID</td>
<td>240</td>
<td>12</td>
<td>--</td>
</tr>
<tr>
<td>PWID</td>
<td>90</td>
<td>4</td>
<td>54</td>
</tr>
<tr>
<td>Heterosexual Exposure</td>
<td>31</td>
<td>1</td>
<td>75</td>
</tr>
<tr>
<td>Blood Products or Transplant</td>
<td>22</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>No Identified or Reported Risk</td>
<td>55</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Perinatal or Childhood Exposure</td>
<td>5</td>
<td>&lt;1</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>2068</td>
<td>93</td>
<td>156</td>
</tr>
</tbody>
</table>
Comparing the demographic characteristics of persons with AIDS or HIV at different endpoints of infection illustrates broad changes in the epidemic over time. Persons ever diagnosed with AIDS provides the historical spectrum of the epidemic in Sonoma County, including those diagnosed prior to highly active antiretroviral therapy and those who have succumbed to their illness. The majority of persons living with HIV or AIDS are those undergoing successful treatment and management of their illness and represent the population served by targeted HIV programs. Persons recently diagnosed with HIV infection serve as sentinel indicators of transmission and characteristics of persons in this group informs prevention and testing recommendations.

When compared to persons ever diagnosed with AIDS or those currently living with HIV infection, persons recently diagnosed with HIV infection include:

- An increasing proportion of females.
- An increasing proportion of both Hispanics/Latinos and African Americans.
- An increasing proportion of persons with unknown risk.

The common theme for these three risk populations is the potential for missed opportunities for early diagnosis as risk factors for HIV infection may not be readily apparent or, in some cases, known by the individual.

### Table 9—Selected Demographics of Persons diagnosed with AIDS, Persons Living with HIV/AIDS, and Persons Recently Diagnosed with HIV infection Sonoma County, 1981—2015

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIDS</td>
<td>2224</td>
<td>100</td>
<td>928</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2068</td>
<td>93</td>
<td>1,190</td>
</tr>
<tr>
<td>Female</td>
<td>156</td>
<td>7</td>
<td>158</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>1859</td>
<td>84</td>
<td>1001</td>
</tr>
<tr>
<td>Latino</td>
<td>229</td>
<td>10</td>
<td>213</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>28</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>African American</td>
<td>77</td>
<td>3</td>
<td>67</td>
</tr>
<tr>
<td>American Ind/Alaska Nat</td>
<td>14</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Multi-Race</td>
<td>17</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Mode of Exposure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSM</td>
<td>1625</td>
<td>73</td>
<td>888</td>
</tr>
<tr>
<td>MSM/PWID</td>
<td>240</td>
<td>11</td>
<td>145</td>
</tr>
<tr>
<td>PWID</td>
<td>144</td>
<td>6</td>
<td>91</td>
</tr>
<tr>
<td>Heterosexual Contact</td>
<td>106</td>
<td>5</td>
<td>141</td>
</tr>
<tr>
<td>Risk not Specified/Unknown</td>
<td>67</td>
<td>3</td>
<td>68</td>
</tr>
<tr>
<td>Other</td>
<td>42</td>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>
Primary Medical Care and Mental Health Services

For approximately twenty years the providers of direct medical care for HIV infected persons was Kaiser Santa Rosa, West County Health Centers and the Department of Health Services’ HIV Clinic (DHS). In 2010, the county HIV clinic closed, transferring HIV medical services to community clinics. Currently:

Kaiser - Santa Rosa continues to provide care to approximately 350 patients.

West County Health Centers - Sebastopol and Guerneville sites continue to provide care to approximately 320 patients.

Santa Rosa Community Health Centers (SRCHC) – Vista Family Health Center now provides medical care to approximately 650 HIV+ patients and HIV + affected family members in addition to detainees/inmates of the Sonoma County Adult Detention facilities.

These medical care and mental health providers are reimbursed for services via private insurance, Medi-Cal, and Medi-Care. Although grant funding for medical care (e.g. Ryan White CARE Act federal funding) still exists it has decreased significantly over the past decade.

Dental Health Services

Both Santa Rosa Community Health Centers and West County Health Centers provide dental health services for persons with HIV infection.

Social Services

Several agencies offer a variety of support services to clients with HIV/AIDS.

Face to Face hosts support groups and provides benefits counseling and case management services to approximately 600 clients.

Food For Thought runs a front-line food bank providing food and nutritional supplements to about 900 HIV infected clients.

Human Services Department provides in-home support and other social services. These services are not HIV specific and clients with HIV/AIDS are not distinguished from others.

Community Care HIV/AIDS Program of Lake County provides medical case management for clients and also supports clients in finding housing.

Most agencies within Sonoma County no longer receive HIV specific grant funding to support social services. The non-profit agencies provide services through donations and other non-HIV specific grants.

Syringe Exchange

Center Point/DAAC and Face to Face provide syringe exchange services. State law allows all pharmacies to sell an unlimited number of syringes to individuals without a prescription.

HIV Counseling and Testing

Patients receive HIV counseling and testing at medical care facilities in the context of a patient-clinician relationship. Most clinics also offer on-site drop in testing. In addition, HIV counseling and testing occurs at “alternative” sites. Center Point/Drug Abuse Alternative Center (DAAC) offers HIV counseling and testing at drug treatment centers and in the community via their mobile testing van (including high risk areas such as parks and bars). SRCHC’s-Vista Family Health Center, Face to Face, Center Point/DAAC coordinate to provide opt-in counseling and testing at the Sonoma County Adult Detention facilities. In addition, Vista Family Health Center uses their mobile van to offer community testing. Face to Face and Planned Parenthood provide onsite counseling and testing.

Partner Services

Partner Services focuses on a group at very high-risk for acquiring HIV infection—partners of those already infected. Partner Services provides counseling on safe sex and encourages and supports notification and testing of partners. DHS hosted Partner Services Trainings in both 2013 and 2014, followed by a program update in 2015 and currently at least one person in each community clinic is trained to provide Partner Services. In addition DHS staff reaches out to clinics and offers technical assistance for partner services following each new HIV diagnosis.
HIV Service Providers Coalition

The HIV Service Providers Coalition was established in 2009 to:

· Collaborate on HIV prevention and care services and strategies to find people at risk and keep people in medical care;
· Promote public awareness for HIV;
· Disseminate best practices on HIV medical care,
· Increase access to social services,
· Facilitate linkages to care for HIV positive clients;
· Identify and mitigate gaps in care.
· Coordinate and plan events.

This group meets monthly. Membership includes Center Point/DAAC, Community Care HIV/AIDS Program of Lake County, Face to Face, Food for Thought, Kaiser of Santa Rosa, North Coast Area AIDS Education and Training Center, Peers for Positive Change, Santa Rosa Community Health Centers, Sonoma County Department of Health Services, Sonoma County Indian Health Project and West County Health Center.

Education

Clinical education on HIV/AIDS is provided by North Coast Area AIDS Education Training Center (AETC). Their mission is to:

· Provide health care professionals with the knowledge and skills necessary to care for HIV-infected patients;
· Increase the numbers of trained health care professionals working with HIV-infected patients;
· Respond to the needs of high-risk populations and the changing face of the epidemic.

Sonoma County HIV/AIDS Prevention Strategy

Sonoma County HIV Prevention & Care Work Plan

Sonoma County HIV Prevention and Care Work Plan, created by the HIV Prevention Task Force and endorsed by the Commission on AIDS, provides a county-wide coordinated work plan for the period of 2012 – 2017. The goals, objectives, and indicators of this plan closely align with the 2010 National HIV/AIDS Strategy, the 2012 California Integrated HIV Surveillance, Prevention and Care Plan, the County of Sonoma Strategic Plan (Safe, Healthy, and Caring Communities) and the Department of Health Services’ Strategic Plan (Improve Health and Community Well-Being; Integrate and Strengthen Collaborative system). Overarching goals of the Sonoma County HIV Prevention & Care Work Plan include 1) reducing the number of new HIV infections, 2) increasing access to care and optimizing health outcomes, 3) reducing HIV-related disparities and health inequities, 4) achieving a more coordinated response to the HIV epidemic, and 5) monitoring the HIV epidemic through HIV/AIDS surveillance data to support and direct program and policy decisions.

Over the next couple years, the Sonoma County HIV Service Providers Coalition will be updating the Sonoma County HIV Prevention and Care Work Plan. The Annual Report on HIV/AIDS in Sonoma County will inform this work as will the National HIV/AIDS Strategy for the United States: updated to 2020, and the recently released Laying a Foundation for Getting to Zero: California’s Integrated HIV Surveillance, Prevention and Care Plan.

Select indicators that monitor progress toward the first two goals are presented as follows.

Reducing new HIV Infections

To reduce the number of new HIV infections in Sonoma County three
principles of communicable disease prevention and control are employed: recognition of infection (testing), suppression of infectious agents (treatment, pre-exposure prophylaxis and post-exposure prophylaxis), and changing behavior to reduce exposure and transmission (e.g., safe sex practices like condom use, needle exchange). Specific strategies to recognize infection (i.e., reduce the number of people who do not know their HIV status) include support for both routine and targeted testing, exploration of innovative testing activities, and promotion of partner services at the time of testing and throughout provision of care and treatment.

Routine Testing
Screening for HIV, recommended by the US Preventive Services Task Force, includes testing all adolescents and adults aged 15 to 65 years at least once and repeat testing based upon risk factors for acquiring HIV infection. In 2014 Santa Rosa Community Health Centers secured grant funding to support universal HIV screening of their clients, and set a goal of having at least 75% of active patients age 15-65 to know their HIV status by 12/31/17. The HIV Service Providers Coalition is working to standardize HIV testing protocols with the support of the North Coast AIDS Education and Training Center and to strategically target for testing individuals with identified risk behavior.

Targeted Testing: Partner Services and STI Testing
The HIV Service Providers Coalition has also prioritized targeted testing which includes testing partners of newly identified HIV positive individuals and testing for all possible sexually transmitted infections (STI) when one is suspected. DHS has supported and hosted multiple trainings to ensure each clinic has a Partner Services champion with the appropriate skills and expertise. In 2015, 16 partners of newly identified positives were notified of their HIV exposure. Of these, 9 were tested and at least one was positive. In 2016 thus far, 22 partners of newly identified positives were notified of their HIV exposure. Of these, 11 were tested and at least one was positive. Several years ago Kaiser Santa Rosa embraced the best clinical practice of concurrent HIV/STI illness by building it into their laboratory requesting and reporting system.

Alternative Site HIV Testing
Offering HIV counseling and testing at alternative, non-health care facility sites can enhance testing and identification of HIV infected persons. At the end of 2012, funding for testing was increased and there was a subsequent expansion in testing capacity. As a result, in 2013 the number of tests doubled and the number of newly identified HIV positive persons tripled (Figure 6). In 2014, however, funding and unanticipated staffing changes resulted in a drop in testing and fewer new infections identified. Another funding loss occurred in 2016 when a key source of support, the Substance Abuse and Mental Health Services Administration (SAMHSA) HIV set aside monies, was cut in half. In 2014, there were 2,052 publicly funded HIV tests performed in Sonoma County. Of these, 3 were preliminary positive and all referred to medical care for confirmatory testing. In 2015, 2,041 HIV tests were performed and 5 preliminary positives were identified and referred to medical care for confirmation. To date, in 2016, 2,159 HIV tests were performed with 3 preliminary positives.
A key element in sustaining the health of those diagnosed with HIV infection is access to and utilization of appropriate medical care. The HIV care continuum is a model used to measure the ability of local HIV/AIDS care systems to successfully identify persons living with HIV infection and subsequently engage those diagnosed with HIV in a successful medical care program.

The HIV care continuum consists of five primary steps:

1. HIV infection
2. HIV diagnosis
3. Linkage to HIV care
4. Engaged in HIV care
5. Viral suppression

In Sonoma County, the number of persons living with HIV infection is estimated to be ~1600 persons, a calculated number based on the assumption that 12.8% of all persons with HIV infection are undiagnosed. Of those diagnosed with HIV infection at the end of 2015 (N=1348), 999 had at least one interaction with medical care, measured by a reported CD4 or viral load lab test in 2015. This represents 62% (Figure 7) of all persons with HIV infection.

Among those with at least one interaction with medical care, 895 were virally suppressed (≤200 copies/mL). This represents 56% of all persons with HIV infection (Figure 11) and 91% of persons with a viral load test. (Table 10).

Nationally, the CDC estimates that only 30% of all people living with HIV infection were virologically suppressed in 2012. Within California, CDPH estimates that 52% of all people living with HIV were virologically suppressed in 2014.

Out of Care Analysis

Among the 1,348 persons diagnosed with HIV infection within Sonoma County, 349 had no apparent interaction with medical care in 2015 as evidenced by at least one viral load or CD4 test. This group is of great concern because these individuals are missing the opportunity to slow the progression of their infection and because their unchecked infection places others at risk. A recent CDC analysis suggested that >90% of new HIV infections during the study period were attributable to persons not receiving HIV medical care.

A review of the 349 cases suggests that not all persons living with HIV and out of care in Sonoma County are residents, nor are all completely out of care (Figure 8). Among the 349 persons with no care interaction in 2018, 23% had at least one care visit in either 2014 or 2016, suggesting intermittent care rather than complete out of care status. Of the 81 persons with intermittent care, 48 (59%) had indication of viral suppression.

Some persons without a care visit in 2015 have a current residence either outside of Sonoma County but within California (N=16, 5%), or have a current residence out of state (N=59, 17%). Those living within California are likely true out of care cases. For
persons currently residing out of state, the care status is unknown.

The California Department of Health Services is currently working on a project to identify out of care persons with an anticipated project start date in early 2017.

**Care and Prevention Indicators**

In an effort to monitor Sonoma County’s progress on meeting the goals of the Sonoma County Prevention and Care work plan, selected care and prevention indicators are continuously evaluated (Table 10). These indicators measure progress toward meeting national and local objectives.

Sonoma County’s system of care continues to succeed in engaging persons newly diagnosed with HIV infection in care and achieving viral suppression. In 2015, 85.2% of persons newly diagnosed with HIV infection achieved viral suppression within 12 months (Table 10). In addition, the proportion of all persons with HIV infection connected with medical care who are virally suppressed has continued to improve from 87.5% in 2012 to 91.4% in 2015 (Table 10).

### Table 10—Care and Prevention Indicators for New HIV Diagnoses and Persons Living with diagnosed HIV Infection

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New HIV Diagnoses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion with AIDS at diagnosis (within 3 months)</td>
<td>34.9%</td>
<td>16.2%</td>
<td>19.4%</td>
<td>18.5%</td>
</tr>
<tr>
<td>Proportion developing AIDS within 12 months</td>
<td>37.2%</td>
<td>18.9%</td>
<td>22.6%</td>
<td>22.2%</td>
</tr>
<tr>
<td>Proportion virally suppressed within 12 months</td>
<td>72.1%</td>
<td>78.4%</td>
<td>83.9%</td>
<td>85.2%</td>
</tr>
<tr>
<td><strong>Persons Living with HIV, Diagnosed (PLWH)</strong></td>
<td>1,310</td>
<td>1,338</td>
<td>1,345</td>
<td>1,348</td>
</tr>
<tr>
<td>Number of diagnosed PLWH who had &gt;= 1 CD4 or VL test</td>
<td>907</td>
<td>920</td>
<td>972</td>
<td>999</td>
</tr>
<tr>
<td>Number of diagnosed PLWH who had &gt;= 1 VL test</td>
<td>872</td>
<td>848</td>
<td>910</td>
<td>979</td>
</tr>
<tr>
<td>Proportion virally suppressed among diagnosed PLWH</td>
<td>58.2%</td>
<td>56.4%</td>
<td>62.4%</td>
<td>66.4%</td>
</tr>
<tr>
<td>Proportion virally suppressed among those with &gt;=1 CD4 or VL test</td>
<td>84.1%</td>
<td>82.1%</td>
<td>86.3%</td>
<td>89.6%</td>
</tr>
<tr>
<td>Proportion virally suppressed among those with &gt;=1 viral load test</td>
<td>87.5%</td>
<td>89.0%</td>
<td>92.2%</td>
<td>91.4%</td>
</tr>
<tr>
<td>Mortality rates among AIDS cases</td>
<td>2.2%</td>
<td>1.1%</td>
<td>1.6%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>
In 1987, in response to a growing public health crisis, the Sonoma County Board of Supervisors established the Commission on AIDS (COA). The purpose of the Commission was to advise the Board about the health and service needs of people with HIV infection, and make recommendations for services. In 1994, the Ryan White CARE Act allocated federal funding for Sonoma County for the medical treatment of HIV/AIDS (Part A) and for support services and required a planning council to oversee administration of those funds. The Commission met the requirements of a local planning council and assumed that role. In 2008-09, changes in the Ryan White CARE Act allocations resulted in a loss for Sonoma County of Part A which funded medical and support services. In July of 2010, the Department of Health Services transferred responsibility for the care of the patients at its HIV Clinic to community clinics (e.g., Santa Rosa Community Health Centers (SRCHC) and West County Health Centers (WCHC)) and concomitantly transferred Ryan White CARE Act funding Parts B, C, and D to SRCHC community clinics.

In 2013, the Commission on AIDS revised its bylaws in response to a variety of changes occurring in the landscape of the HIV/AIDS epidemic in Sonoma County including:

- Advances in the treatment of HIV infection such that with early diagnosis, proper treatment and diligent self-care, many people with HIV infection can look forward to a normal lifespan managing a chronic illness;
- Decreased (but not eliminated) stigma around HIV/AIDS, non-traditional sexual orientations and practices, and injection drug use;
- Integration of HIV diagnosis and care into mainstream medical care;
- Integration of education on HIV diagnosis and care into mainstream medical education;
- The presence of North Coast AIDS Education and Training Center;
- Transfer of the Ryan White CARE Act funds to community organizations;
- The presence of a vibrant HIV Services Providers Coalition and HIV Prevention Task Force.
- The presence of an HIV Speaker's Bureau and regular forums.
- Robust legal protections against discrimination based on HIV status.

Currently the COA’s mission is to:

- Maintain HIV on the County’s prevention agenda;
- Keep the Board of Supervisors aware of the progress of the HIV epidemic;
- Serve as a voice to the Department of Health Services and the board for those people who are not “at the table”, such as young men having sex with men and the Latina population;
- Speak to the community at large about HIV and keep the issue in the public awareness;
- Decrease stigma around HIV;
- Encourage open discussions that lead to people getting tested, discovering their status, and providing needed support to neighbors or family members who may be living with HIV.
**Technical Notes**

**AIDS** is defined by the standards developed by the Centers for Disease Control and Prevention (CDC). Revised in 1993, an HIV positive person is considered to have AIDS by the presence of one of several opportunistic infections commonly associated with advanced HIV disease, a CD4 T-lymphocyte count of 200 or less per uL, or a total CD4 percentage of total lymphocytes of less than 14.

**Year Reported** is the year an HIV or AIDS case is reported to the Sonoma County HIV/AIDS Reporting System.

**Year of Diagnosis** is the year an individual was diagnosed with HIV or AIDS.

**Cumulative Cases** is the total number of HIV or AIDS cases reported as of December 31, 2012.

**Cumulative Number of Persons Living with AIDS and HIV infection** is the total number of individuals with AIDS and HIV infection who were diagnosed and reported in Sonoma County and alive as of December 31, 2012.

**Exposure Category** is the classification that describes how a person was infected with HIV. A hierarchical index following CDC guidelines is used to describe how each person tested for HIV or diagnosed as an HIV or AIDS case acquired the virus. The CDC index is as follows:

**Adult/adolescent exposure category**
- Men who have sex with men (MSM)
- People who inject drugs (PWID)
- Men who have sex with men and inject drugs (MSM/PWID)
- Heterosexual contact (HET)
  - Sex with person who injects drugs
  - Sex with bisexual male
  - Sex with person with hemophilia
  - Sex with transfusion recipient with HIV infection
  - Sex with HIV-infected person, risk not specified
- Receipt of blood transfusion, blood components or tissue (XFUS)
- Other/risk not reported or identified (RNS)

**Pediatric (<13 years old) exposure category**
- Hemophilia/coagulation disorder
- Mother with /at risk for HIV infection:
  - Person who injects drugs
  - Sex with person who injects drugs
  - Sex with bisexual male
  - Sex with person with hemophilia
  - Sex with transfusion recipient with HIV infection
  - Sex with HIV-infected person, risk not specified
- Receipt of blood transfusion, blood components or tissue
- Has HIV infection, risk not specified
- Receipt of blood transfusion, blood components or tissue
- Other/risk not reported or identified (RNS)

Each individual is counted only once in the hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for men with both a history of sexual contact with other men and injecting drug use. They make up a separate exposure category. Also, men who reported having sex with a man even once between 1977 and their first HIV-positive test are categorized either as “men who have sex with men” or “men who have sex with men and inject drugs.”

**Cumulative Incidence Rate (CIR)** is a measure of the probability or risk of illness in a population over a period of time. The cumulative incidence rates were calculated using the number of newly diagnosed HIV or AIDS cases from 1981 through December 31, 2012 in a particular group (i.e., race/ethnic group, living in a particular city or town, age group, etc.) and population projections from the California Department of Finance or the 2010 U.S. Census (referenced in the body of the report).

**Case Fatality Rate (CFR)** is the proportion of people in the AIDS case registry who have died. In California, the case fatality rate can be calculated for AIDS only because California did not report on those living with HIV prior to July 1, 2002.

**Confidence Intervals** include a high and low value around a rate to indicate how much variability is included in that rate. In this report, 95% confidence intervals are used to describe variability of cumulative incidence rates. When comparing rates between two groups, if the confidence intervals for the two rates overlap, then the difference between the two rates is not statistically significant at the 95% confidence level, meaning that the difference between the rates may be due to random variation.
REFERENCES


10. Table S2701, 1-year estimates, American Communities Survey


