

Annual Report on HIV/AIDS IN SONOMA COUNTY

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SOCIODEMOGRAPHIC CHARACTERISTICS OF SONOMA COUNTY

Population

Sonoma County is a semi-rural county that measures 1,576 square miles and is the geographically largest and northernmost county in the San Francisco Bay Area. In 2016, Sonoma County was the 17th most populated of the 58 counties in California, with an estimated 503,000 residents (approximately 319 people per square mile).¹

According to 2016 Department of Finance population estimates, Santa Rosa - the county seat and largest city - is home to about 35% of the total population and ranks as the 27th largest city in the state.² The majority (70%) of Sonoma County residents live within nine separate cities, with the remainder living within the unincorporated areas of the county. Sonoma County's population grew 4% from 483,880 people in 2010 to 503,000 in 2016.

Demographics

In 2016, the median age of Sonoma County residents was 42 years. About 18% of Sonoma County's population was under 18 years old, 5% of whom were under 5 years of age. More than 26% were 60 years and older. By the year 2030, nearly 31% of the total population of Sonoma County will be aged 60 or older.² Although the racial/ethnic composition is changing, Sonoma County is still substantially less diverse than the state as a whole.

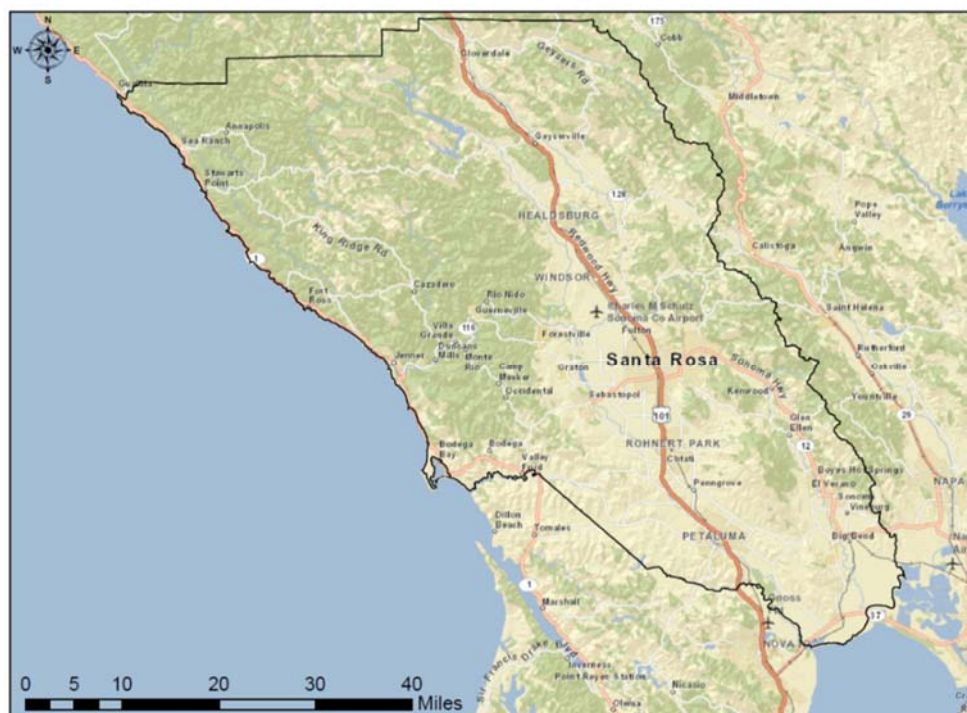
In 2016, 64% of Sonoma County residents were White/Caucasian, non-Hispanic or Latino; 27% were Hispanic or Latino, 4% were Asian or Pacific Islander, 2% were African American, and 1% were American Indian or Alaska Native.¹

An estimated 17% of Sonoma County residents were foreign born. The total Hispanic or Latino population increased by over 300% in the past 20 years, and is projected to grow at a rate three times faster than the overall population in Sonoma County. By 2060, the Hispanic or Latino population is estimated to increase by approximately 100,000 people. This increase has cultural and linguistic implications with regards to designing effective governmental programs and community-based initiatives.

Sonoma County's economic and housing landscape in 2016:

- Over 53% of Sonoma County residents paid 30% or more of their gross income on rent.¹
- The median household income of Sonoma County residents was approximately \$74,000, higher than the State (\$67,739).
- An estimated 88% of Sonoma County's population aged 25 years and older had a high school diploma or pursued higher education.
- An estimated 12% of families with children ages 0-18 years residing in Sonoma County had incomes below the Federal Poverty Level (FPL) and 43% of all residents lived below 300% FPL.
- An estimated 2,900 homeless individuals and 156 homeless families with children resided in Sonoma County.

Figure 1—Sonoma County



EXECUTIVE SUMMARY

As of December 31, 2017, there were at least 1,358 adults and adolescents living with HIV infection or AIDS who were diagnosed in Sonoma County (890 AIDS; 468 HIV, non-AIDS). When undiagnosed individuals are considered, the burden of disease increases to an estimated 1,597 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.
- The majority of newly diagnosed individuals are male, although the total number diagnosed each year is declining.
- 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 indi-

viduals 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.

PEOPLE RECENTLY DIAGNOSED WITH HIV INFECTION

Cases over Time

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 2017 data itself should be interpreted with caution as the overall number of cases is small and subject to significant fluctuations between years.

In 2017, 30 persons were newly diagnosed with HIV infection. Of these,

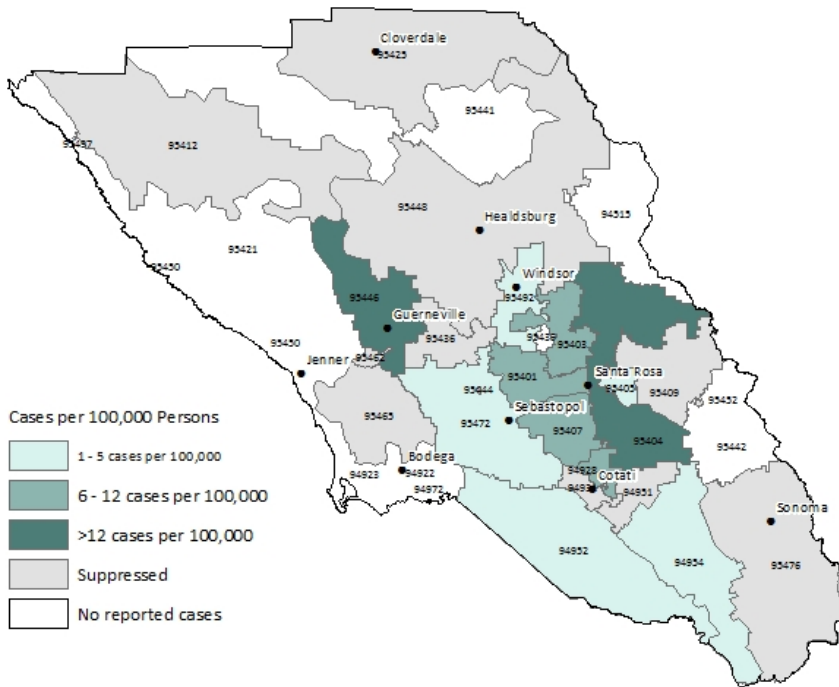
three were diagnosed late in infection with a coincident AIDS diagnosis at or within three months of HIV diagnosis. The total number of new diagnoses is slightly lower than the average over the past ten years, but still within the range of previously observed counts (range 24-45 cases, 2008-2017).

**Table 2—Selected Characteristics of Persons Recently Diagnosed with HIV Infection or AIDS
Sonoma County, December 31, 2017**

	2003-2007			2008-2012			2013-2017			2017	
	N	5 YR AVE	%	N	5 YR AVE	%	N	5 YR AVE	%	N	%
TOTAL	244	49	--	192	38	--	166	33	--	30	--
Diagnosis											
HIV only	84	17	34	104	21	54	135	27	81	27	90
HIV and later AIDS	84	17	34	23	5	12	6	1	4	0	0
HIV/AIDS co-diagnosed	62	12	25	62	12	32	25	5	15	3	10
Gender											
Male	210	42	86	163	33	85	145	29	87	25	83
Female	34	7	14	29	6	15	21	4	13	5	17
Race/Ethnicity											
White	157	31	64	117	23	61	97	19	58	16	53
Latino	55	11	23	48	10	25	48	10	29	10	33
Asian/Pacific Islander	8	2	3	7	1	4	4	1	2	1	3
African American/Black	15	3	6	11	2	6	16	3	10	3	10
American Ind/Alaska Nat	1	0	0	2	0	1	1	0	1	0	0
Multi-Race	8	2	3	7	1	4	0	0	0	0	0
Age at Diagnosis											
<13	0	0	0	0	0	0	1	0	1	0	0
13-19	3	1	1	6	1	3	7	1	4	2	7
20-29	46	9	19	32	6	17	44	9	27	13	43
30-39	69	14	28	57	11	30	47	9	28	9	30
40-49	78	16	32	47	9	24	28	6	17	1	3
50-59	39	8	16	36	7	19	28	6	17	4	13
60+	9	2	4	14	3	7	11	2	7	1	3
Mode of Exposure											
MSM	135	27	55	110	22	57	108	22	65	19	63
MSM/PWID	28	6	11	23	5	12	7	1	4	1	3
PWID	16	3	7	11	2	6	8	2	5	1	3
Heterosexual Contact	46	9	19	21	4	11	10	2	6	1	3
Risk not Specified/Unknown	19	4	8	27	5	14	32	6	19	7	23
Other	0	0	0	0	0	0	1	0	1	0	0

Figure 2—Persons Recently Diagnosed with HIV Infection by Zip Code of Residence

Sonoma County, 2013-2017



Zip Code	Total N	Rate
1 - 6 cases per 100,000		
95492	6	4.21
94954	8	4.28
94952	8	4.87
95405	6	5.61
95472	8	5.66
6 - 12 cases per 100,000		
94928	14	6.48
95403	15	6.64
95407	18	9.15
95401	20	10.82
>12 cases per 100,000		
95404	24	12.07
95446	9	37.89

Gender

In 2017, 25 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 2003 and 2017, accounting for <20% of new diagnoses (Table 2). Women as a group of special concern are addressed on Page 8.

Race/Ethnicity

In 2017, the majority of new cases reported White race followed by Hispanic/Latino ethnicity (Table 2). The proportion of newly infected persons reporting Hispanic/Latino ethnicity has increased from 23% between 2003-2007 to 29% between 2013-2017 (Table 2). Hispanics/Latinos as a group of special concern are addressed on Page 8.

Age

Between 2013-2017, persons aged 30-49 had the highest proportion of new diagnoses of HIV infection, followed

closely by those aged 20-29 (Table 2). This is a shift down in age from 2003-2007 and 2008-2018 when the second highest age group was those aged 40-49 (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 8% between 2003 and 2007 to 19% between 2013 and 2017 (Table 2).

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 2013 and 2017 (N=9 cases, Figure 2).

Other areas with high rates of diagnosis are throughout Santa Rosa (N=24, 95404; N=20, 95401; N=15, 95403) and Rohnert Park (N=14, 95428). The greatest number of new infections, however, is occurring in Santa Rosa. Three persons reporting PO Boxes as a primary address were excluded from the map.

INDICATORS OF RISK FOR HIV INFECTION

Increase in STI Rates

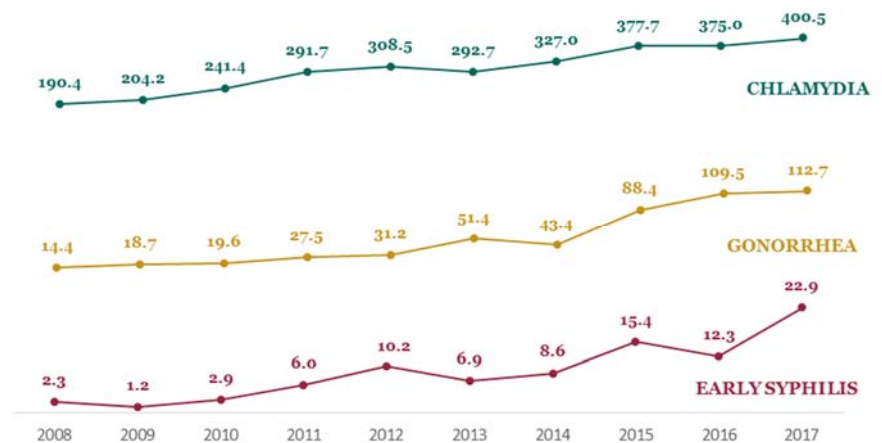
Sexually transmitted infections (STIs) continue to be a problem in Sonoma County. Rates of Chlamydia and Syphilis are increasing in Sonoma County as well as in other Bay Area counties. In addition to complications from the diseases themselves, STIs can increase the risk of HIV transmission.

The rate of Chlamydia has been steadily increasing from 190 new cases per 100,000 population in 2008 to 400 new cases per 100,000 population in 2017 (Figure 3). In 2017, women and men aged 20-24 years old had the highest incidence rate of Chlamydia with rates of 3,093 and 1,387 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 113 cases per 100,000 persons in 2017 (Figure 3). Women and men aged 20-24 years old and men aged 25-29 years old have the highest incidence rates of Gonorrhea with 241 and 498 cases per 100,000 population in 2017 (data not shown).

Sonoma County had experienced a significant increases in early syphilis in 2012, 2015 and 2017 with 116 cases reported in 2017. While the majority of cases were diagnosed among MSM, 13% were women. This trend is similar to California, where outbreaks of syphilis have occurred in MSM.⁴ 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.

Figure 3—Rates of Sexually Transmitted Infections per 100,000 Persons
Sonoma County, 2008—2017



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.⁵ Overall, researchers estimated that the annual incidence of HIV infection among MSM who use amphetamines was three times higher than non-users.⁵

In addition to the effect methamphetamines have on behavior, there are numerous negative health consequences. For persons already infect-

ed 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.⁶

In Sonoma County, methamphetamine was listed as a primary drug of choice for 29% of persons entering publicly funded treatment in fiscal year 2014-15.⁷

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 2010-11.⁷

National reports suggest that persons, especially youth, who might otherwise abuse prescription drugs are switching to heroin due to its low cost and availability.⁸

Groups of Special Concern

Hispanic/Latino Persons

The Hispanic/Latino population in Sonoma County is increasing, currently representing 27% of the estimated total 2017 population compared to 14% in 1995.^{2,9} 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 26% of newly diagnosed HIV infections nationwide in 2016. Approximately 23% of all persons living with HIV in the US in 2015 were Hispanic/Latino.¹²

Since 1981, 322 Hispanics/Latinos have been diagnosed with AIDS or HIV infection in Sonoma County. Of these, 237 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 10 cases per year since 2008 (range 4-16 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,

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

	Hispanic/Latino		Non-Hispanic/Latino	
	N	%	N	%
MSM	150	63	738	66
MSM/PWID	15	6	128	11
PWID	11	5	80	7
Heterosexual Exposure	34	14	109	10
Blood Products or Transplant	1	0	3	0
No Identified or Reported Risk	22	9	56	5
Perinatal or Childhood Exposure	4	2	7	1
Total	237	17	1121	83

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 (14% vs. 10%, 9% vs. 5%, respectively, Table 3).

Women

Since 1981, 227 women have been diagnosed with HIV infection or AIDS in Sonoma County (159 AIDS, 68 HIV). Of these, 166 are currently living with HIV infection or AIDS. Since 2008, an average of five women were diagnosed with HIV infection each year (range 2-9 cases per year).

Women of color accounted for approximately 43% new diagnoses of HIV infection in women between 2003 and 2017, 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 (60%), followed by intravenous drug use (24%, 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.

Fifteen percent of persons diagnosed with HIV infection since 2013 were diagnosed with AIDS within three months. Cases who have late diagnoses are more often aged 45+ (48% among co-diagnosed, 29% among those not co-diagnosed), less often MSM (52% among co-diagnosed, 67% not co-diagnosed), and more often have unknown risk (28% among co-diagnosed, 18% not co-diagnosed).

CURRENT FACE OF THE EPIDEMIC: PEOPLE LIVING WITH HIV OR AIDS

The number of Sonoma County residents diagnosed with HIV or AIDS who had no reported date of death as of December 31, 2017 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, 2017, there are at least 1,358 confirmed cases of adults and adolescents living with HIV infection or AIDS who were diagnosed and reported in Sonoma County (890 AIDS; 468 HIV, non-AIDS).

It is estimated that at the end of 2017 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 15% of persons who are HIV positive are unaware of their infection.⁹

**Table 4—Selected Characteristics of Persons Living with HIV Infection or AIDS
Sonoma County, December 31, 2017**

	Persons living with HIV or		Sonoma County Population	
	N	%	N	%
Diagnosis				
HIV	468	34	--	--
AIDS	890	66	--	--
Gender				
Male	1,192	88	246,905	49
Female	166	12	254,445	51
Race/Ethnicity				
White	979	72	320,419	64
Hispanic/Latino	237	17	133,625	27
Asian/Pacific Islander	32	2	22,136	4
African American	71	5	6,992	1
American Ind/Alaska Nat	12	1	3,904	1
Multi-Race	27	2	14,274	3
Current Age				
<13	1	0	73,130	15
13-19	3	0	42,564	8
20-29	52	4	68,924	14
30-39	125	9	62,753	13
40-49	223	16	61,053	12
50-59	432	32	72,811	15
60+	518	38	120,115	24

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=166) 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 (72%, Table 4). Compared to the Sonoma County population, White and African American

persons represent a larger proportion of cases of HIV infection and AIDS (72% 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 (17% vs. 27%, 2% vs. 4% respectively, Table 4).

Age

Persons living with HIV infection or AIDS have an older age distribution compared to Sonoma County overall.

Eighty-six percent of persons living with HIV infection or AIDS are aged 40 or older, compared to only 51% of the general population (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 (74% MSM + 12% MSM/PWID, Table 5), whereas females report heterosexual contact or intravenous

**Table 5—Persons Living with HIV Infection or AIDS by Exposure Category and Gender
Sonoma County, December 31, 2017**

	Males		Females		TOTAL	
	N	%	N	%	N	%
MSM	888	74	--	--	888	65
MSM/PWID	143	12	--	--	143	11
PWID	51	4	40	24	91	7
Heterosexual Exposure	42	4	101	60	143	11
Blood Products or Transplant	4	<1	0	0	4	<1
No Identified or Reported Risk	60	5	18	11	78	6
Perinatal or Childhood Exposure	4	<1	7	4	11	1
Total	1192	88	166	12	1358	100

drug use as the primary exposure (60% HET and 24% 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 (65%, Table 5 vs. 60%, Table 4) and a smaller proportion of persons with unknown risk (6% 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 1,358 persons currently living with HIV infection who were also diagnosed in Sonoma County, 923 remain in Sonoma County (68%) 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 95421 (Cazadero). Other

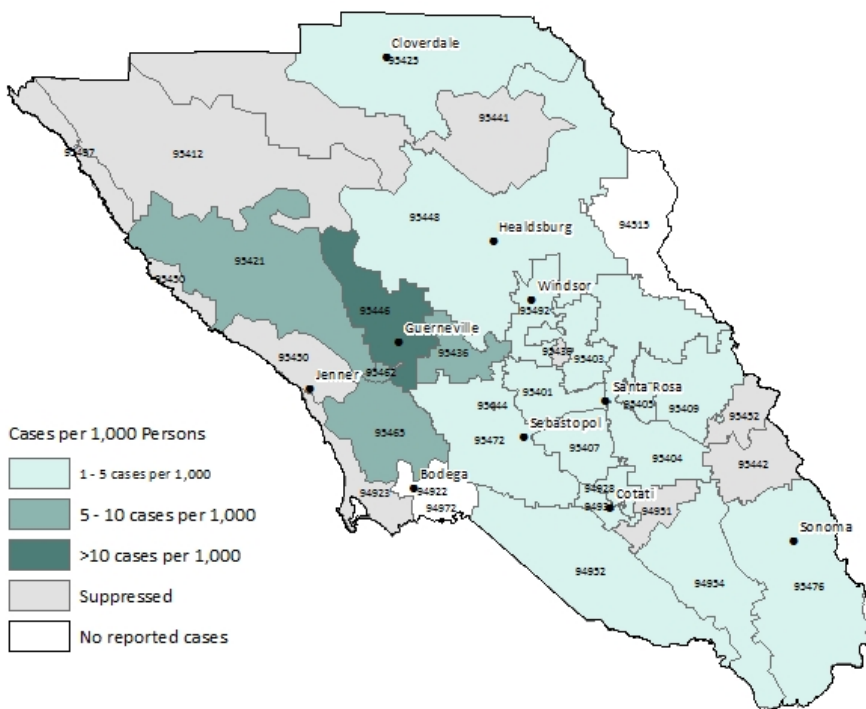
zip codes with moderate concentrations of persons living with HIV include 95465 (Occidental) and 95436 (Forestville).

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=299). Of the 923 with Sonoma County addresses, 37 were PO Boxes

Figure 4 —Persons Living with AIDS or HIV Infection by Zip Code of Residence*

Sonoma County, December 31, 2017

Zip Code	Total N	Rate
<5 cases/1,000		
94952	28	0.85
95492	26	0.91
95476	34	0.96
94954	37	0.99
94928	45	1.04
95409	30	1.10
95425	14	1.29
95405	33	1.54
95448	27	1.60
94931	14	1.65
95403	80	1.77
95472	53	1.88
95404	84	2.11
95407	84	2.13
95401	99	2.68
5-10 cases/1,000		
95436	29	5.35
95465	12	5.76
95421	12	7.54
>10 cases/1,000		
95462	13	9.17
95446	112	23.58



*Zip code of residence is determined by current address as reported to eHARS or, if missing, zip code of AIDS or HIV infection diagnosis

HISTORICAL AND CUMULATIVE DATA: AIDS IN SONOMA COUNTY

and not included in the analysis.

From January 1, 1981 through December 31, 2017, 2,245 Sonoma County residents have been reported with AIDS (Figure 5). Of these cases, 1,356 have died, resulting in a case fatality ratio of 60% 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 890 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 2008 and 2017, an average of 22 AIDS cases were diagnosed each year (range 5 in 2016; 45 in 2008).

In 2017 there were 13 new AIDS cases and 27 new cases of HIV infection reported to Sonoma County Public Health. Of the 13 AIDS cases, 10 were conversions (prior diagnosis of HIV to AIDS) and the remaining 3 were first reported as simultaneous diagnoses of HIV infection and AIDS.

Figure 5—AIDS Cases by Year of Diagnosis and Death with Cumulative Prevalence, Sonoma County, 12/31/2017

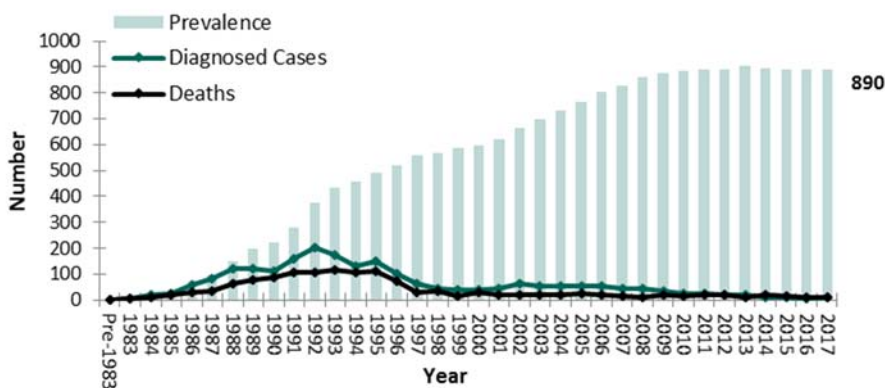


Table 6—Cumulative Incidence Rates of AIDS by Race/Ethnicity Sonoma County, 1981—2017

	Cumulative Incidence Rate	95% Confidence Intervals
White	583.3	(556.9, 609.7)
Hispanic/Latino	175.1	(152.7, 197.5)
African American	1129.9	(882.1, 1377.6)
Other	156.3	(117.7, 194.8)
Total	447.8	(429.3, 466.3)

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=24), American Indian/ Alaska Natives (n=13), and Multi-Race (n=26). 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=79) compared to Whites (n=1869) and Hispanics/Latinos (n=234) 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).

**Table 7—Age at Diagnosis for All AIDS Cases
Sonoma County, 1981—2017**

	Males		Females		TOTAL	
	N	%	N	%	N	%
<13	2	<1	6	4	8	0
13-19	3	<1	2	1	5	0
20-29	203	10	29	18	232	10
30-39	784	38	55	35	839	37
40-49	727	35	34	22	761	34
50-59	287	14	19	12	306	14
60+	82	4	12	8	94	4
Total	2088	93	157	7	2245	100

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 5%, respectively, Table 8). The majority of females reported heterosexual exposure (48%) or PWID (34%) as primary exposures, followed by no identified or reported risk (9%, Table 8).

**Table 8—AIDS Cases by Exposure Category and Gender
Sonoma County, 1981—2017**

	Males		Females		TOTAL	
	N	%	N	%	N	%
MSM	1635	78	--	--	1625	72
MSM/PWID	245	12	--	--	238	11
PWID	94	5	53	34	147	7
Heterosexual Exposure	31	1	75	48	106	5
Blood Products or Transplant	22	1	7	4	29	1
No Identified or Reported Risk	56	3	14	9	70	3
Perinatal or Childhood Exposure	5	<1	8	5	13	1
Total	2088	93	157	7	2245	100

TRENDING OVER TIME—SHIFTING DEMOGRAPHICS OF HIV/AIDS

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—2017**

	AIDS		PLWH/A		People Recently Dx with HIV Infection	
	December 31, 2017		December 31, 2017		2013-2017	
	N	%	N	%	N	%
Diagnosis						
HIV			468	34	135	81
AIDS	2245	100	890	66	31	19
Gender						
Male	2088	93	1,192	88	145	87
Female	157	7	166	12	21	13
Race/Ethnicity						
White	1869	83	979	72	97	58
Latino	234	10	237	17	48	29
Asian/Pacific Islander	24	1	32	2	4	2
African American	79	4	71	5	16	10
American Ind/Alaska Nat	13	1	12	1	1	1
Multi-Race	26	1	27	2	0	0
Mode of Exposure						
MSM	1635	73	888	65	108	65
MSM/IDU	245	11	143	11	7	4
IDU	147	7	91	7	8	5
Heterosexual Contact	106	5	143	11	10	6
Risk not Specified/Unknown	70	3	78	6	32	19
Other	42	2	15	1	1	1

SONOMA COUNTY HIV/AIDS CARE SERVICES

In Sonoma County, persons with HIV/AIDS are served by a robust network of service providers encompassing both direct medical care and social services. Information and education for clinicians, individuals with HIV/AIDS and the general public is provided by several organizations.

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 420 patients.

West County Health Centers - Sebastopol and Guerneville sites continue to provide care to approximately 250 patients.

Petaluma Health Center now provides care to approximately 30 patients.

Santa Rosa Community Health Centers (SRCHC) – Vista Family Health Center now provides medical care to approximately 550 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.

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 provides case management, housing assistance and benefits counseling to approximately 500 clients.

Food For Thought runs a front-line food bank providing food and nutritional supplements to about 600 HIV infected clients and an additional 50 dependent children.

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.

SRCHC's-Vista Family Health Center and **Face to Face** coordinate to provide opt-in counseling and testing at the **Sonoma County Adult Detention facilities**.

Face to Face and **Planned Parenthood** provide onsite counseling and testing.

Center Point/Drug Abuse Alternative Center (DAAC) offers some HIV counseling and testing at drug treatment centers

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 has hosted a series of Partner Services Trainings, most recently in 2018 and staff from the majority of clinics have participated. 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, West County Health Center and Petaluma Health Center.

Redwood Community Health Coalition

Redwood Community Health Coalition (RCHC), a network of community health centers and a wellness education site, encompasses a total of 74 sites in Marin, Napa, Sonoma and Yolo counties. RCHC's mission is to improve access to and the quality of care provided for under-served and uninsured people in those four coun-

ties. The Population Health Programs within RCHC supports health centers in transforming to new value-based health care models, with a focus on population health management that frequently goes beyond the boundaries of individual health centers and requires a collective approach to implementation and long-term success. Clinical outcomes are improved through adoption of standardized evidenced-based care guidelines supported by clinical decision support tools and reinforced by training. The RCHC Infectious Disease and GI workgroup is currently working to develop standardized best practice guidelines, protocols and clinical decision support tools and analytics for HIV and STD screening, care and prevention.

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.

AETC receives federal funding and is

affiliated with University of California, San Francisco. They sponsor an all-day annual HIV update training and other trainings throughout the year.

Education for the public is provided by several agencies.

The **HIV Service Providers Coalition** sponsors at least two forums annually for HIV/AIDS clients. The general public is welcomed.

Face to Face provides a Speakers Bureau. These presenters go into schools and other venues to talk about living with HIV.

Center Point/DAAC provides education in schools and treatment centers on substance use and the risks of HIV, hepatitis C virus, and other sexually transmitted infections.

SONOMA COUNTY HIV/AIDS PREVENTION STRATEGY

Sonoma County HIV Prevention & Care Work Plan

Sonoma County HIV Prevention and Care Work Plan, originally created by an HIV Prevention Task Force is a living document updated by the Sonoma County HIV Service Providers Coalition. The work plan supports county-wide coordination of HIV prevention and care efforts. The goals, objectives, and strategies of this plan align with the National HIV/AIDS Strategy and the California Integrated HIV Surveillance, Prevention and Care Plan. The work plan also aligns with the County of Sonoma Strategic Plan (Safe, Healthy, and Caring Communities) and the Department of Health Services' Strategic Plan (All residents and community environments are healthy and safe; Individuals, families and communities access high quality and coordinated services for

health, recovery, well-being and self-sufficiency). The *Annual Report on HIV/AIDS in Sonoma County* informs the Work Plan. 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 improving health outcomes for people living with HIV and 3) reducing HIV-related disparities and health inequities.

To reduce the number of new HIV infections in Sonoma County three principles of communicable disease prevention and control are employed: recognition of infection, suppression of infectious agents and behavior changes that reduce exposure and transmission. Strategies to improve diag-

nosis include increasing and improving HIV testing and expanding partner services. The HIV Service Providers Coalition members are working to standardize HIV and STD testing protocols with the support of the North Coast AIDS Education and Training Center and Redwood Community Health Coalition. Identifying and testing partners of newly diagnosed HIV positive individuals is also a priority for members of the HIV Service Providers Coalition as is alternative site HIV testing. Strategies to improve suppression of infectious agents include enhancing linkage to care, promoting pre-exposure prophylaxis (PrEP) and optimizing retention in-care. Strategies to promote behaviors that reduce exposure and transmission include syringe exchange programs and use of condoms.

Increasing Access to Care and Optimizing Health Outcomes

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 15% of all persons with HIV infection are un-diagnosed.¹⁴

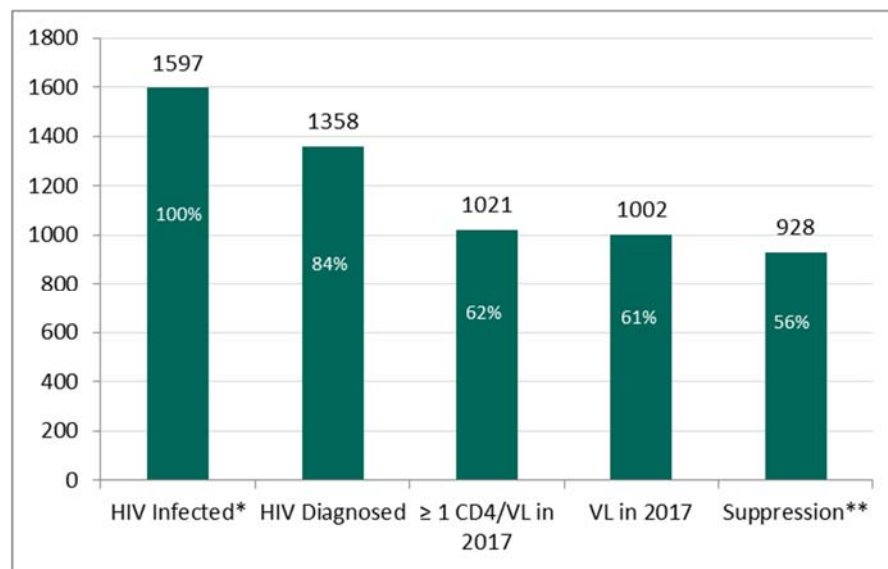
Among those diagnosed with HIV infection at the end of 2017 (N=1,358), 1021 had at least one interaction with medical care, measured by a reported CD4 or viral load lab test in 2017. This represents 62% (Figure 7) of all persons with HIV infection and 75% of those diagnosed in Sonoma County.

Among those with at least one interaction with medical care in 2017, 928 were virally suppressed (≤ 200 copies/mL). This represents 56% of all persons with HIV infection (Figure 7) and 93% of persons with a viral load test.

Nationally, the CDC estimates that only 30% of all people living with HIV infection were virologically suppressed in 2012.¹⁵ Within California, CDPH estimates that 54% of all people living with HIV were virologically suppressed in 2016.¹⁶

Figure 7—Continuum of Care for Persons Living with HIV Infection

Sonoma County, 2017



*Estimate based on CDC data indicating that 15% of persons with HIV are undiagnosed with an adjustment for underreporting of HIV infection.

**Persons are considered virally suppressed if their viral load is ≤ 200 copies/mL.

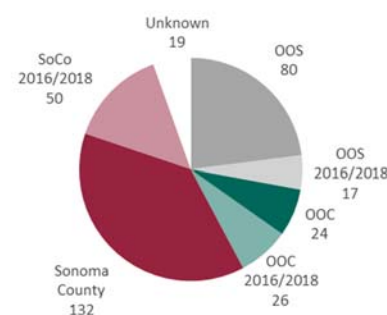
Out of Care Analysis

Among the 1,358 persons diagnosed with HIV infection within Sonoma County, 337 had no apparent interaction with medical care in 2017 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.¹⁷

A review of the 337 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 337 persons with no care interaction in 2017, 28% had at least one care visit in either 2016 or 2018, suggesting intermittent care rather than complete out of care status.

Some persons without a care visit in 2017 have a current residence either outside of Sonoma County (OOC) but within California (N=50, 15%), or have a current residence out of state (OOS) (N=97, 29%). Those living within California are likely truly out of care cases. Within each group, a proportion reported a care visit within 2016 or 2018 (Figure 8).

Figure 8—Characteristics of Persons Living with HIV and Out of Care
Sonoma County, 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, 82.8% 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 sup-

pressed remains high at 85% (Table 10).

Table 10—Care and Prevention Indicators for New HIV Diagnoses and Persons Living with diagnosed HIV Infection Sonoma County, 2013, 2015, 2017

	2013	2015	2017
New HIV Diagnoses	37	27	30
Proportion with AIDS at diagnosis (w/in 3 months)	16.2%	18.5%	10.0%
Proportion developing AIDS w/in 12 months	18.9%	22.2%	10.0%
Proportion virally suppressed within 12 months	78.4%	85.2%	82.8%
Persons Living with HIV, Diagnosed (PLWH)	1,338	1,348	1,358
Number of diagnosed PLWH who had ≥ 1 CD4 or VL test	920	999	1,004
Number of diagnosed PLWH who had ≥ 1 VL test	848	979	958
Proportion virally suppressed among diagnosed PLWH	56.4%	66.4%	62.9%
Proportion virally suppressed among those with ≥ 1 CD4 or VL test	82.1%	89.6%	85.1%
Proportion virally suppressed among those with ≥ 1 viral load test	89.0%	91.4%	89.1%
Mortality rates among AIDS cases	1.1%	1.2%	1.2%

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 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.

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