Question 2 What is the Scope of the HIV/AIDS Epidemic in Vermont?

The HIV/AIDS epidemic has affected persons in all sex, age and racial/ethnic groups in Vermont. This effect, however, has not been the same for all groups. In the beginning of the epidemic the number of cases of HIV infection increased most sharply among white MSM. Although white MSM are still disproportionately affected by the epidemic, recent national trends suggest a shift in the HIV/AIDS epidemic toward women, blacks, and high-risk heterosexual adults. It is important to identify the populations in Vermont that are most affected and are most at risk for HIV infection to better plan HIV prevention and care efforts, as well as to help effectively allocate limited resources.

HIGHLIGHTS

- Total number of new HIV and AIDS diagnoses in Vermont continues to decrease.
- At the end of 2007 there were 484 known cases of HIV/AIDS in Vermont and an estimated 153 to 179 additional residents who were living with the virus but had not been diagnosed.
- 41% of all Vermont residents living with HIV/AIDS reside in Chittenden County.
- The non-white population in Vermont is disproportionately affected by HIV.
- More older Vermonters (50+ years old) were being diagnosed more with HIV/AIDS in 2006-2007 as compared to the number diagnosed in 2000-2001.
- MSM accounts for the largest proportion of new HIV/AIDS diagnoses among men in Vermont, and heterosexual sex accounts for the largest proportion of new HIV/AIDS diagnoses among women in Vermont.
- Few deaths occur each year in Vermont where HIV is listed as an underlying cause of death.

Overall HIV/AIDS Trends

HIV/AIDS Prevalence: As of December 2007 the total number of Vermont residents known to be living with HIV was 243.[29] The prevalence rate among Vermonters was 38.9 per 100,000 population, based on 2006 population estimates.[2] In 2006, the prevalence rate for the United States was 143.7 per 100,000 population as measured by the 33 states with name-based reporting (not including Vermont).[30] Table 4 shows selected characteristics of people living with HIV in Vermont in 2000, 2004 and 2007. Although there are more people living with HIV in 2007 than in 2000, the characteristics of people living with HIV in Vermont have changed very little. The majority of people living with HIV in Vermont in 2007 are White, male, and the primary mode of transmission was men who have sex with men (MSM). One characteristic that has changed is the age of people living with HIV. In 2000 most people living with HIV in Vermont were in the 30-39 age group. This began to change in 2004 with more people entering the 40-49 age group.

There are four reasons why these numbers can be considered the *minimum* number of persons living in Vermont with HIV that have not developed AIDS. First, this estimate does not include persons who are infected with HIV but have not been tested. Second, it does not include those who were tested anonymously and who have not sought medical care. Third, it does not account for people who first tested positive for HIV outside of Vermont. Fourth, the estimates for the year 2007 may be incomplete because some data on 2007 diagnoses may not reach the Vermont Department of Health until after the new year.[29]

[29] Vermont Department of Health, HIV/AIDS Surveillance
[30] Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2006*. HIV/AIDS Surveillance, 2008, 18

Table 4. Persons Living with HIV in Vermont: 2000, 2004 and 2007 [29]

	Persons Living with HIV in 2000, 2004, and 2007 [1,2,3]					
	2000		2004		2007	
	Number	%	Number	%	Number	%
Total	159	100%	218	100%	243	101%
Sex						
Male	131	82%	177	81%	199	83%
Female	28	18%	41	19%	44	18%
Race/Ethnicity						
Hispanic-All Races	5	3%	9	4%	12	5%
White	134	84%	180	83%	193	80%
Black or African American	12	8%	19	9%	25	10%
American Indian or Alaskan Native	≤3[4]	–[5]	≤3	–	≤3	–
Asian	≤3	–	≤3	–	≤3	–
Legacy Asian/Pacific Islander	≤3	–	≤3	–	≤3	–
Native Hawaiian	≤3	–	≤3	–	≤3	–
Multi Race	4	3%	4	2%	5	2%
Unknown	≤3	–	5	2%	5	2%
Age Group						
< 13	≤3	–	≤3	–	≤3	–
13-19	≤3	–	≤3	–	≤3	–
20-29	17	11%	25	11%	27	11%
30-39	67	42%	65	30%	61	25%
40-49	62	39%	90	41%	92	38%
50+	18	11%	37	17%	61	25%
Transmission Category (Adult/Adolescent)						
Men who have sex with men (MSM)	93	58%	127	58%	140	58%
Intravenous drug use (IDU)	20	13%	23	11%	21	9%
MSM/IDU	11	7%	16	7%	19	8%
Hemophilia	≤3	–	≤3	–	≤3	–
Heterosexual	15	9%	23	11%	25	10%
Receipt of Blood	≤3	–	≤3	–	≤3	–
Mother with HIV	≤3	–	≤3	–	≤3	–
Not Reported or Not Identified	16	10%	26	12%	34	14%

1. Includes only persons reported with HIV infection who have not developed AIDS.
2. These counts do not include deceased individuals.
3. Data includes only individuals who were residents of Vermont at the time of diagnosis.
4. The Vermont Department of Health does not typically release numbers with values less than 3.
5. Value cannot be calculated because of small numbers.

As of December 2007, there were 241 Vermont residents known to be living with AIDS (see Table 5).[29] The prevalence rate among Vermonters was 38.6 per 100,000 population, based on 2006 population estimates.[2] The prevalence rate for the United States was 178.6 per 100,000 population.[30] The prevalence rate for the U.S. White, non-Hispanic population was 79.4 per 100,000 of the U.S. White, non-Hispanic population.

Like people living with HIV the majority of Vermonters living with AIDS were White, male, between the ages of 40 and 49 years old, and their primary mode of transmission was MSM. And again, while the number of people living with AIDS in Vermont has increased, this rate has slowed. The number of people living in Vermont with AIDS has increased by 11% in the past 5 years.

Table 5. Persons Living with AIDS in Vermont: 1997, 2002, and 2007 [29]

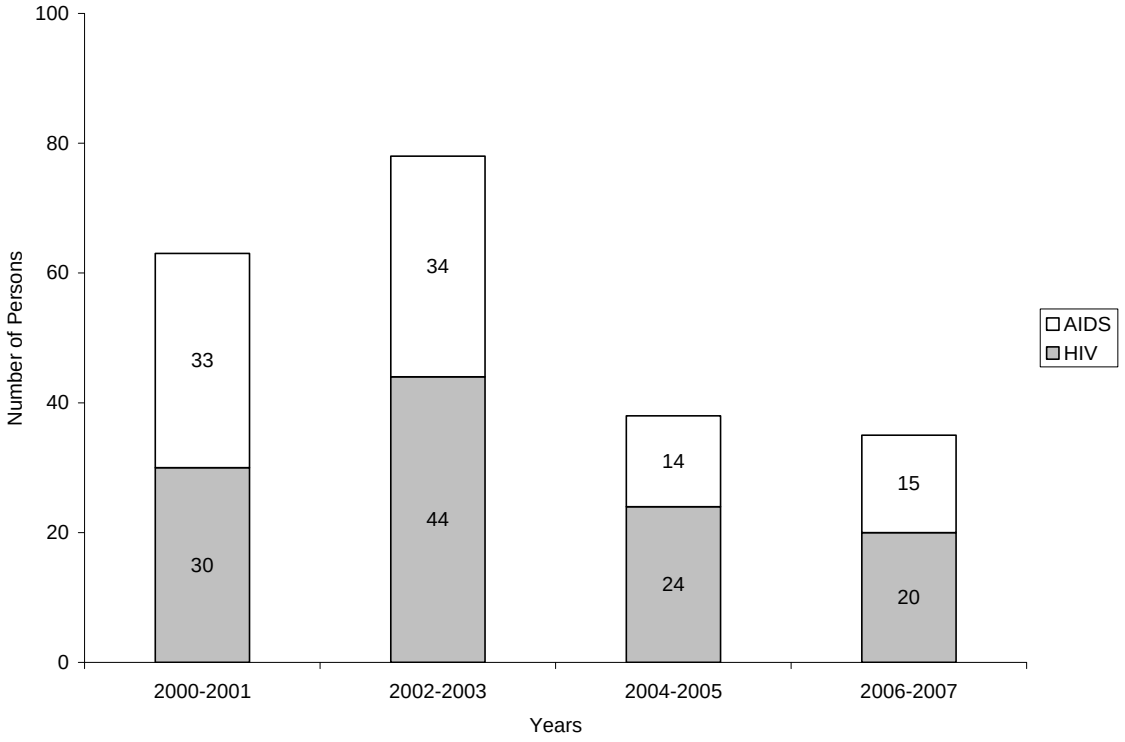
	1997		2002		2007	
	Number	%	Number	%	Number	%
Total [1,2,3]	162	100%	218	100%	241	100%
Sex						
Male	137	85%	184	84%	204	85%
Female	25	15%	34	16%	37	15%
Race/Ethnicity						
Hispanic-All Races	4	2%	10	5%	10	4%
White	142	88%	183	84%	205	85%
Black or African American	13	8%	22	10%	23	10%
American Indian or Alaskan Native	≤3[4]	–[5]	≤3	–	≤3	–
Asian	≤3	–	≤3	–	≤3	–
Legacy Asian/Pacific Islander	≤3	–	≤3	–	≤3	–
Native Hawaiian	≤3	–	≤3	–	≤3	–
Multi Race	≤3	–	≤3	–	≤3	–
Unknown	≤3	–	≤3	–	≤3	–
Age Group						
< 13	≤3	–	≤3	–	≤3	–
13-19	≤3	–	≤3	–	≤3	–
20-29	10	6%	9	4%	7	3%
30-39	75	46%	55	25%	27	11%
40-49	59	36%	107	49%	116	48%
50+	17	10%	44	20%	89	37%
Transmission Category (Adult/Adolescent)						
Men who have sex with men (MSM)	82	51%	112	51%	122	51%
Intravenous drug use (IDU)	31	19%	34	16%	34	14%
MSM/IDU	10	6%	16	7%	16	7%
Hemophilia	8	5%	7	3%	8	3%
Heterosexual	19	12%	30	14%	29	12%
Receipt of Blood	≤3	–	5	2%	6	2%
Mother with HIV	≤3	–	≤3	–	≤3	–
Not Reported or Not Identified	9	6%	13	6%	25	10%

1. Includes only persons reported with HIV infection who have not developed AIDS.
2. These counts do not include deceased individuals.
3. Data includes only individuals who were residents of Vermont at the time of diagnosis.
4. The Vermont Department of Health does not typically release numbers with values less than or equal to 3.
5. Value cannot be calculated because of small numbers.

It is estimated that of all of the people living with HIV/AIDS in the U.S., 24-27% remain undiagnosed and unaware of their HIV infection.[31] If the 484 known cases of HIV/AIDS in Vermont represent only 73-76% of state residents infected with the virus, then an additional 153 to 179 people may be currently undiagnosed in Vermont. The total number of Vermont residents living with HIV/AIDS may be even higher due to people who resided outside of Vermont at the time of their first positive HIV test and those who had a positive HIV test but were tested anonymously and did not enter care. Conversely, the total number of Vermont residents with HIV/AIDS may be artificially increased by including people who were Vermont residents at the time of their first positive HIV test but who no longer live in Vermont.

HIV/AIDS Incidence: There were 20 HIV diagnoses among Vermont residents in 2006-2007, a 33% decrease in new diagnosis since 2000-2001 (see Figure 14).[29] The number of AIDS diagnoses continues to decrease in Vermont. In 2006-2007 there were 15 AIDS diagnoses reported in Vermont, down from 33 in 2000-2001.[29] Nationally, the number of new HIV/AIDS cases has remained stable between 2003 and 2006.[30] The rate of HIV/AIDS new diagnoses in Vermont in 2006-2007 was 5.4 per 100,000 population, compared to18.5 per 100,000 in the U.S. in 2006.[30]

Figure 14. Number of Persons Diagnosed With HIV and Number of Persons Diagnosed with AIDS for Vermont in Two-Year Intervals [29]

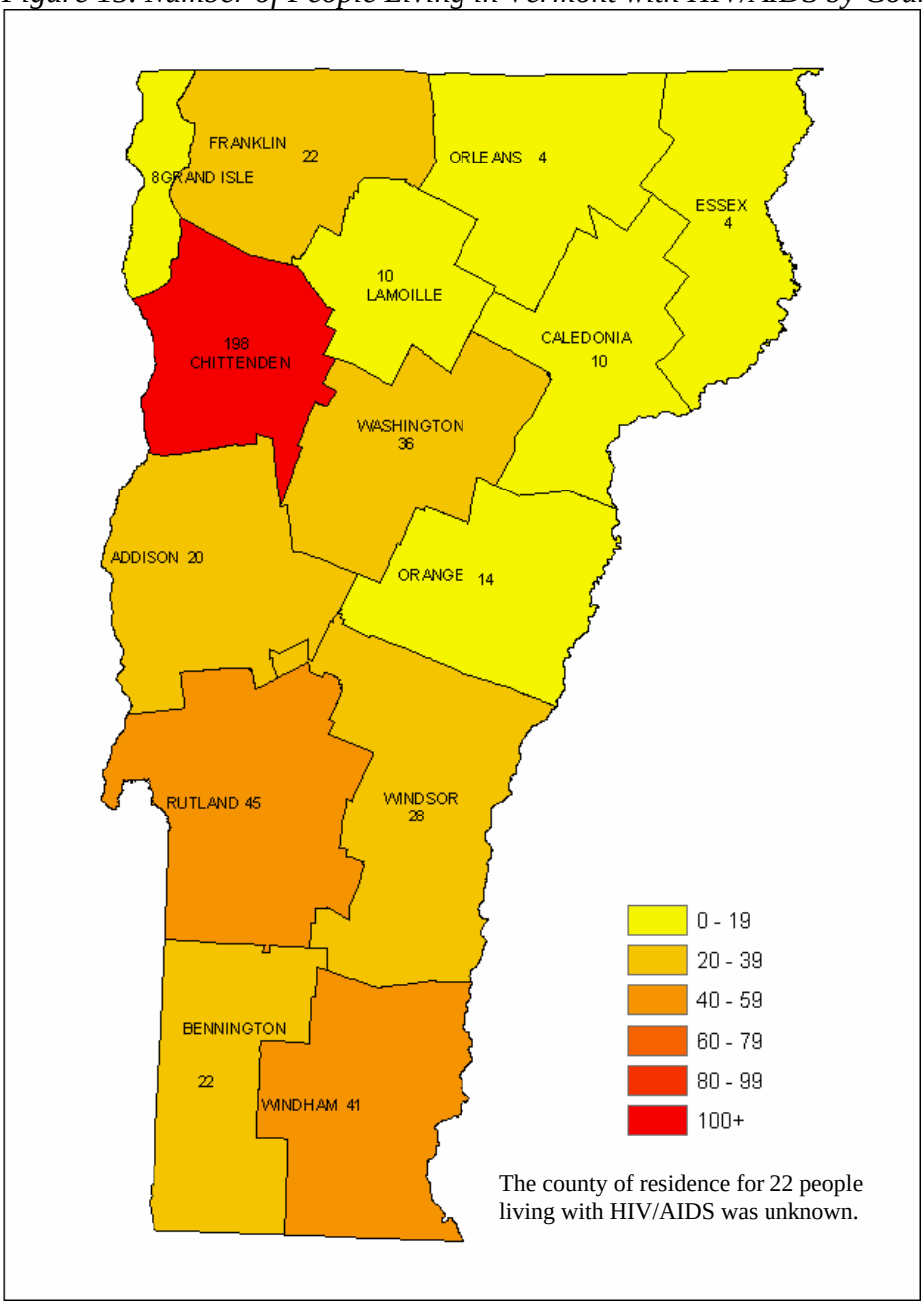


[31] Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003. National HIV Prevention Conference; June 2005; Atlanta. Abstract 595.

HIV/AIDS by Vermont Region

Twenty-four percent of the state's total population resides in Chittenden County, but 41% (198) of all people living with HIV/AIDS live in Chittenden County. Almost half (47%, or 228 people) of all of the people living with HIV/AIDS in Vermont live in Vermont's only metropolitan statistical area, comprised of Chittenden, Franklin and Grand Isle Counties. Nationally, the majority of AIDS cases (81%) have been concentrated in large metropolitan areas.[30] Figure 15 shows the number of people living with HIV/AIDS in each Vermont County.

Figure 15. Number of People Living in Vermont with HIV/AIDS by County: 2007 [29]



Between 2000 and 2007, 87 (41%) people with new HIV/AIDS diagnoses resided in Chittenden County.[29] Incidence rates per 100,000 population for each Vermont County between 2000 and 2007 can be found in Table 6. The rate for Grand Isle County may appear high give the small size of this community (estimated population of 7,751 in 2006), but only 2.3 % of all persons with new HIV/AIDS diagnoses over this eight year period were residents of Grand Isle. Also note that the rate in Caledonia County and Essex County are similar, yet the population of Caledonia County is more than 4 times greater (estimated population of 30,842 in 2006) than that of Essex County (estimated population of 6,567 in 2006). The rate of new diagnoses in Windham County is also similar to the rate in Chittenden County, although again the population of Chittenden County is far greater (estimated 150,069 in 2006) than the population of Windham County (estimated 43,898 in 2006),

Table 6. Incidence Rates of HIV/AIDS Diagnoses in Vermont per 100,000 population by County: 2000-2007 [29]

County	Rate[1]
Addison	24.3
Bennington	35.2
Caledonia	16.2
Chittenden	58.0
Essex	15.2
Franklin	14.5
Grand Isle	64.5
Lamoille	12.2
Orange	23.8
Orleans	0.0
Rutland	29.9
Washington	30.2
Windham	52.4
Windsor	12.1

1. Based on 2006 population estimates provided by the Vermont Department of Health Center for Public Health Statistics

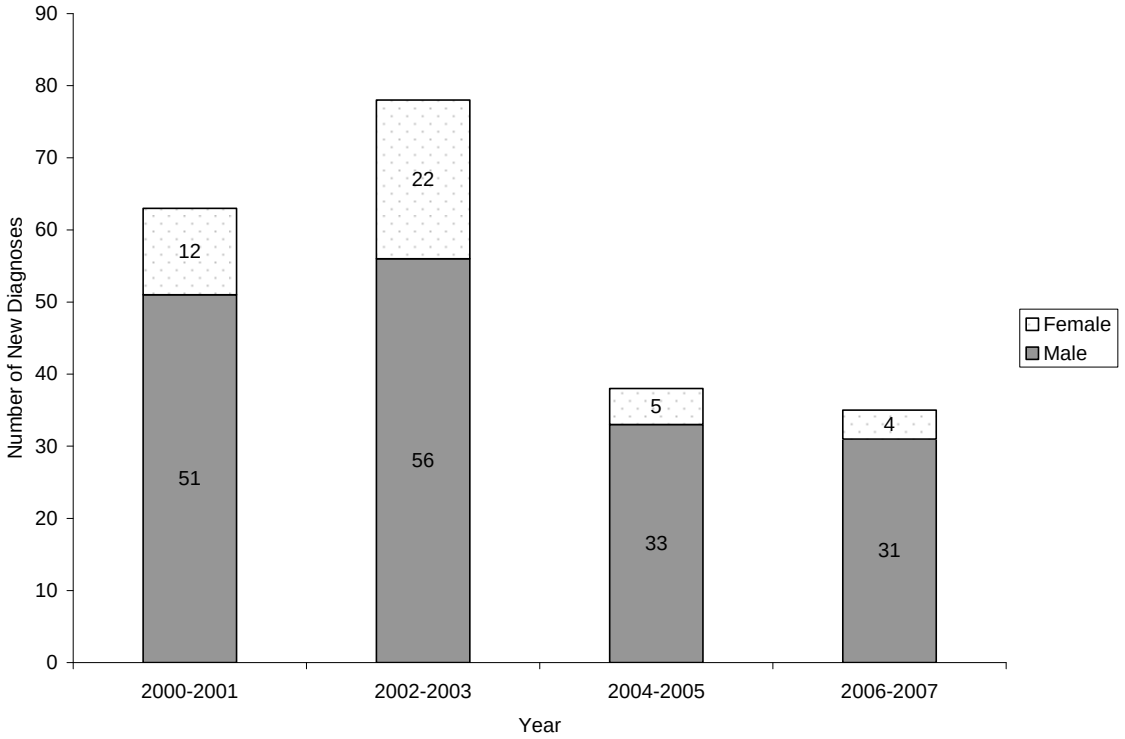
HIV/AIDS by Gender

Although it is estimated that 74% of all people newly diagnosed with HIV/AIDS in the United States in 2006 were men, more women are being diagnosed now compared to the beginning of the epidemic. [32]

[32] Centers for Disease Control and Prevention. *HIV/AIDS among Women*. Revised June 2007. Available at http://www.cdc.gov/hiv/topics/women/resources/factsheets/pdf/women.pdf. Accessed on 1/31/08.

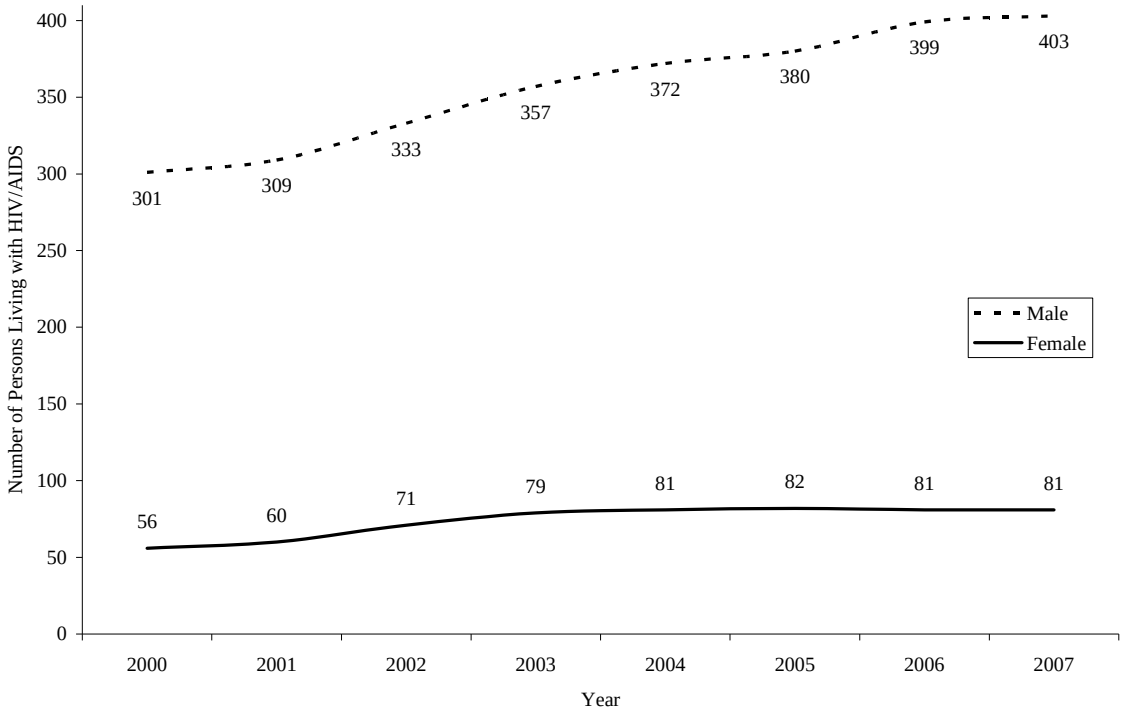
In Vermont 20% (43 people) of the cumulative new HIV/AIDS cases between 2000 and 2007 were women. Women tended to make for a small proportion of new cases of HIV/AIDS in any 2-year period as depicted in Figure 16.

Figure 16. New HIV/AIDS Diagnoses in Vermont by Gender in Two-Year Intervals [29]



In 2007, 18% of all people living with HIV/AIDS in Vermont were women. The numbers of men and women living with HIV/AIDS are increasing, but at different rates. As can be seen in Figure 17, the number of men living with HIV/AIDS increases on average by 13 cases per year between 2000 and 2007, compared to the number of women living with HIV/AIDS, which increases on average by 3 cases per year between 2000 and 2007. This increase among women also appears to have stabilized between 2003 and the present, although among men the number of new diagnoses continues to increase.

Figure 17. Number of People Living in Vermont with HIV/AIDS by Gender: 2000-2007
[29]



HIV/AIDS by Race/Ethnicity

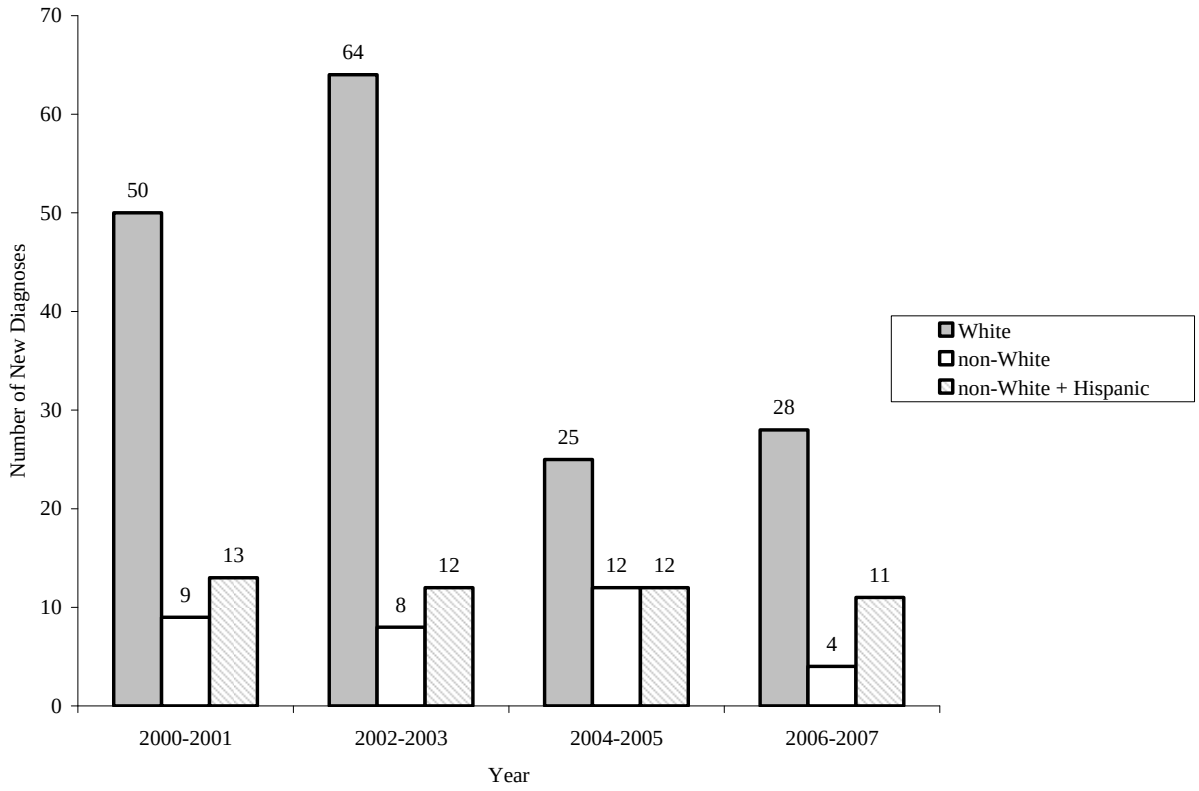
An estimated 40,000 people in the United States become infected with HIV each year.[33] African Americans have been disproportionately affected by HIV/AIDS since the epidemic began in the U.S., and continue to account for the majority of new AIDS cases and people living with AIDS.[34] Also disproportionately affected is the Hispanic/Latino population, representing an estimated 13% of the U.S. population, but 16% of new AIDS cases.[35] In 2006, people who identified as non-white or as Hispanic/Latino made up only 26% of the U.S. population, but it was estimated that they made up 67% of all people living with HIV/AIDS.[36]

Only 2.5 % of Vermont's total population is non-White, but 16% of new cases of HIV/AIDS diagnosed between 2000 and 2007 were non-White Vermonters.[29] Due to the

[33] Centers for Disease Control and Prevention. *A Glance at the HIV/AIDS Epidemic*. Revised June 2007. Available at http://www.cdc.gov/hiv/resources/factsheets/PDF/At-A-Glance.pdf. Accessed on 1/31/08.
[34] Centers for Disease Control and Prevention. *HIV/AIDS among African Americans*. Revised June 2007. Available at http://www.cdc.gov/hiv/topics/aa/resources/factsheets/pdf/aa.pdf. Accessed on 1/31/08.
[35] Centers for Disease Control and Prevention. *HIV/AIDS among Hispanics/Latinos*. August 2007. Available at http://www.cdc.gov/hiv/resources/factsheets/PDF/hispanic.pdf. Accessed on 1/31/08.
[36] "Estimated numbers of persons living with HIV/AIDS, by year and selected characteristics, 2003-2006 – 33 states and 5 U.S. dependent areas with confidential name-based HIV infection reporting." In *HIV/AIDS Surveillance Report, 2006*. Centers for Disease Control and Prevention.

small number of individuals with HIV or AIDS in Vermont it is not possible to look at trends within specific races or ethnicities. However, between 2000 and 2007 the average number of new HIV diagnoses in Vermont showed a decline for white residents and some stability in new diagnoses for non-whites until 2006-2007 (Figure 18). A decline appears in 2006-2007 because few of people who accounted for new diagnoses for HIV/AIDS in 2007 identified as non-White. However, as noted earlier, 2007 data may not be complete because of delayed reporting, and additional 2007 data received after the new year may reveal non-White cases. Therefore, this apparent decline should be viewed with caution.

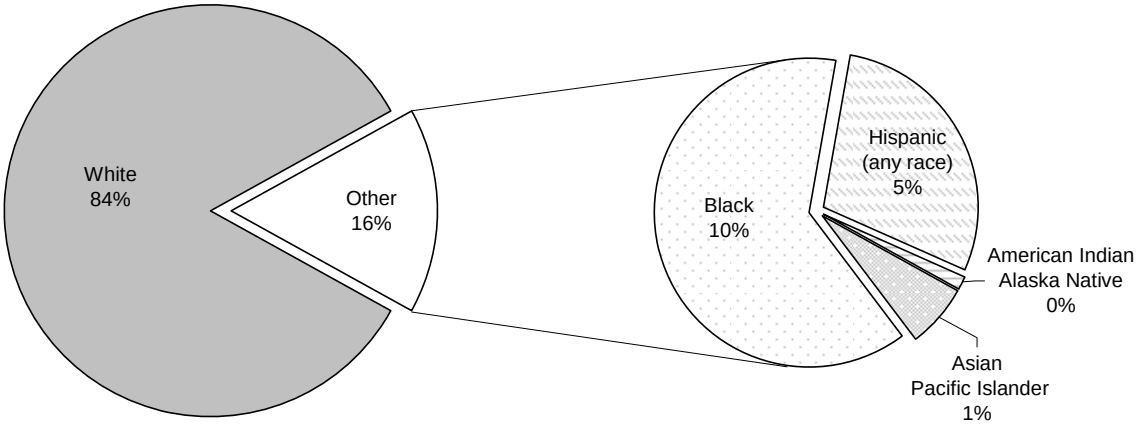
Figure 18. New HIV/AIDS Diagnoses in Vermont by Race and Ethnicity in Two-Year Intervals [29]



Only 1.1% of Vermont's population identifies as White Hispanic. Between 2000 and 2007, however, 6% of all new HIV/AIDS diagnoses occurred among Hispanics of any race. Currently, the way that data is collected in Vermont is that the category "Hispanic" acts as a race/ethnicity category along with African American, Asian, etc. If we combine non-White cases and Hispanic cases of new HIV/AIDS diagnoses, we see a relative stability in new cases as compared to diagnoses among the White, non-Hispanic population of Vermont (see Figure 19).

Non-Whites in Vermont also comprise a sizeable portion of people living with HIV/AIDS in Vermont, as compared to the proportion of the Vermont population that is non-White or Hispanic/Latino. Just 3.6% of Vermont's population identified as non-White or as Hispanic in 2006 (refer to Figure 2), but 16% of people living with HIV/AIDS identified as non-White or as Hispanic in 2006 (see Figure 19).

Figure 19. Persons Living with HIV/AIDS in Vermont by Race/Ethnicity: 2006 [29]



HIV/AIDS by Age Group

Nationally, young adults and teens continue to be at increased risk for contracting HIV.[37] In 2004, 13% of new HIV/AIDS diagnoses were among people aged 13-24. Although the progression from HIV to AIDS progressed more slowly among this age group compared to older Americans with HIV, the estimated number of young people living with AIDS has increased 42% since 2000.[37] In Vermont, few new diagnoses occur among youth. Between 2000 and 2007, only 4.5% of new HIV/AIDS diagnoses occurred among persons under 20 years of age.

Nationally, the largest estimated number of new HIV/AIDS diagnoses in 2006 were among 40-49 year olds (27% of all new diagnoses) and people ages 30-39 (27% of all new diagnoses).[38] Because of the small numbers of new diagnoses per year, trends for age at diagnosis are examined over a larger span of time than one year. In Vermont, the largest numbers of new HIV and AIDS cases for the years 2000 through 2007 are in the 30-39 (61 cumulative cases, 28% of all new cases 2000-2007) and 40-49 (71 cumulative cases, 33% of all new cases 2000-2007) age groups (see Figure 20). Unlike the U.S., in Vermont it is the older group, ages 40-49, that edges out ahead of the 30-39 age group.

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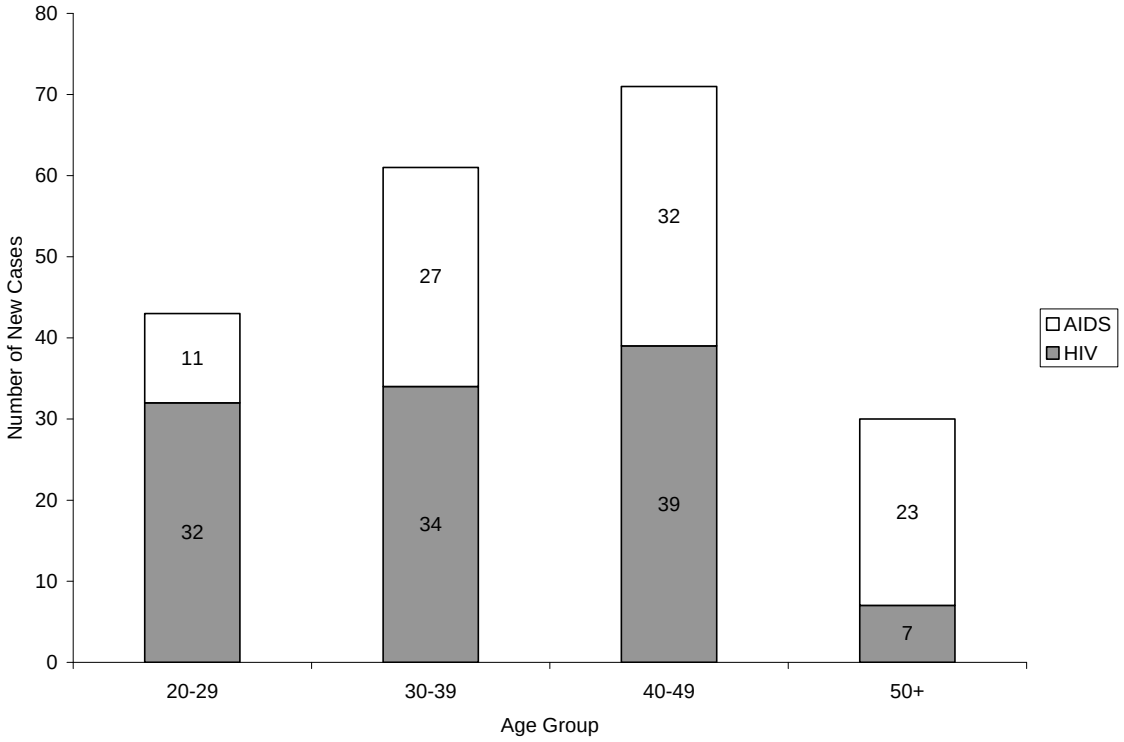
[37] Centers for Disease Control and Prevention. *HIV/AIDS among Youth.* June 2007. Available at http://www.cdc.gov/hiv/resources/factsheets/PDF/youth.pdf. Accessed on 2/4/08.

[38] "Estimated numbers of cases of HIV/AIDS, by year of diagnosis and selected characteristics, 2003-2006—33 states and US dependent areas with confidential name-based HIV infection reporting," In *HIV/AIDS Surveillance Report, 2006*. Centers for Disease Control and Prevention

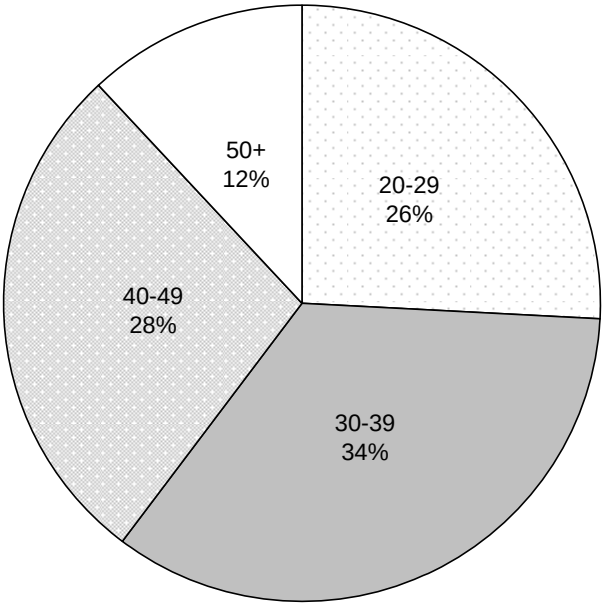
Figure 20. New HIV/AIDS Diagnoses in Vermont by Age Group: 2000-2007 [29]



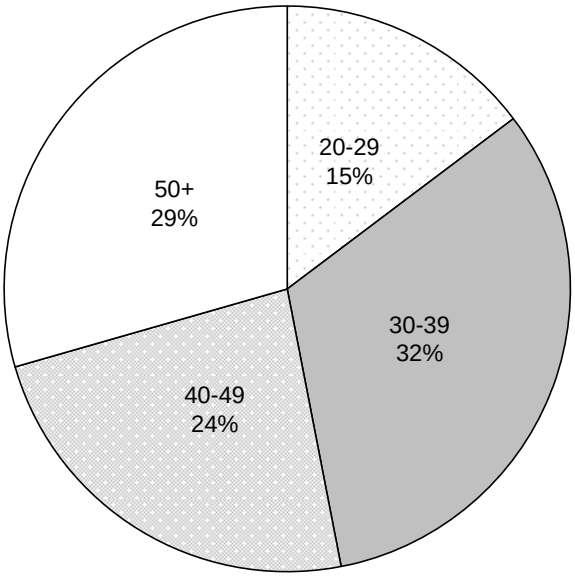
More older Vermonters (50+ years old) were diagnosed with HIV/AIDS in 2006-2007 (29% of all new diagnoses) as compared to the number of older Vermonters diagnosed in 2000-2001 (12% of new diagnoses) (see Figure 21).

Figure 21. New HIV/AIDS Diagnoses in Vermont by Age: 2000-2001 and 2006-2007 [29]

2000-2001



2006-2007



HIV/AIDS by Transmission Category

HIV transmission patterns have shifted over time with heterosexual transmission accounting for a growing proportion of HIV/AIDS cases. An estimated 33% of new HIV/AIDS cases (both men and women) in the U.S. report high-risk heterosexual contact as the mode of transmission.[30] Among men in the U.S., MSM accounted for the 47% of all new diagnoses and for 67% of all new cases among men in 2006. Among women in the U.S. high-risk heterosexual contact accounted for 20% of all new diagnoses and 80% of new HIV/AIDS cases among women. Again, it should be remembered that the number of individuals diagnosed with HIV and AIDS each year in Vermont is relatively small. For that reason, observing yearly trends and changes in modes of transition is difficult. Table 7 shows the number and percent of HIV and AIDS diagnoses by transmission category between 2000 and 2007, shown with comparable national data. With such low numbers of people diagnosed each year in Vermont, small differences in the number of people in each category may appear as large differences in the percentage of people per category.

As shown in Table 7, for males the largest proportion of all new diagnoses cites MSM as the mode of transmission, similar to U.S. White, non-Hispanic data. Also similar to U.S. data, Vermont men diagnosed with HIV or AIDS infrequently report infection via hemophilia or blood transfusions. However, a larger proportion of Vermont men diagnosed with AIDS report exposure from heterosexual sex (8%) than what is reported by national data (4%). However, in Vermont this proportion represents a relatively small number of men (n = 6).

Heterosexual sex is cited as the mode of transmission by almost half (48%) of all new HIV diagnoses and almost half (44%) of all new AIDS diagnoses among Vermont women. This is somewhat higher than what is reported for women nationally (Table 7). However, it is important to keep in mind the comparatively fewer diagnoses made among women, resulting in a small increase in number but potentially large increase in proportion. A small proportion of Vermont women diagnosed with HIV between 2000 and 2007 reported injection drug use as a mode of transmission compared to national figures. Many women, including Vermont women, report other transmission category or do not report a mode of transmission (Table 7). Women may not report a mode of transmission because they are unaware of the risk behavior they have engaged in, such as having sex with a male partner who also (unknown to the woman) has sex with other men.[32]

Table 7. New HIV/AIDS Diagnoses 13 Years of Age and Older in Vermont (2000-2007) and in the U.S. White, non-Hispanic Population (2006) by Transmission Category [29, 30]

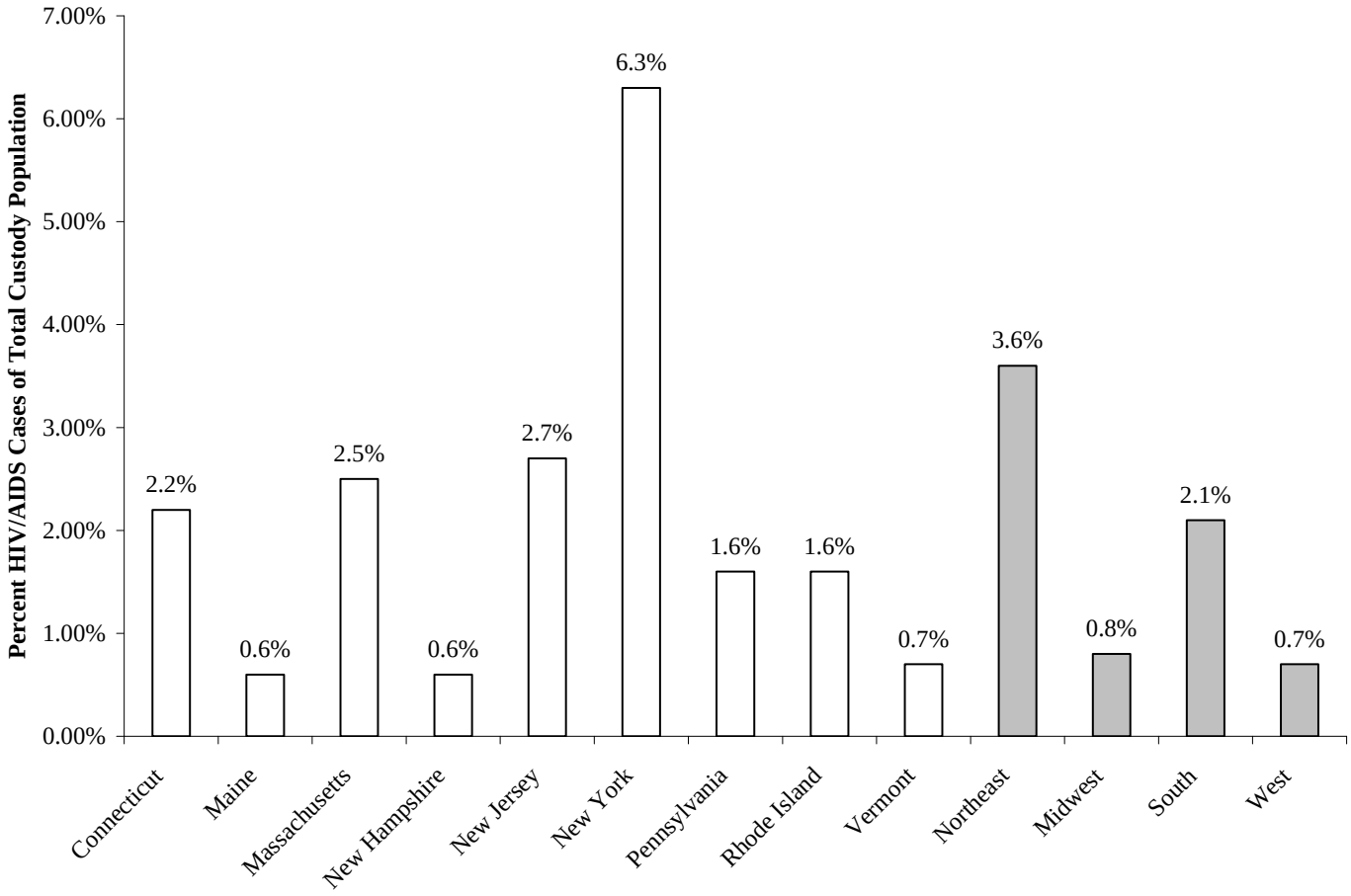
	Vermont 2000-2007[1]								U.S. White, not Hispanic 2006							
	Male				Female				Male				Female			
	HIV		AIDS		HIV		AIDS		HIV		AIDS		HIV		AIDS	
Transmission Category	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
MSM	63	68%	51	65%	—[2]	—	—	—	11963	73%	6251	65%	—	—	—	—
Injection Drug Use (IDU)	4	4%	5	6%	≤3[3]		4	25%	858	5%	733	8%	690	26%	482	28%
MSM/IDU	8	9%	≤3	—	—	—	—	—	1092	7%	732	8%	—	—	—	—
Heterosexual Contact	≤3	—	6	8%	12	48%	7	44%	522	3%	416	4%	1132	42%	725	42%
Hemophilia/coagulation disorder	≤3	—	≤3	—	0	0%	0	0%	29	0.2%	26	0.3%	≤3	—	4	0.2%
Receipt of blood transfusion, blood components, or tissue	0	0%	≤3	—	≤3	—	<3	—	14	0.1%	20	0.2%	12	0.4%	15	1%
Other/Not Reported	15	16%	11	14%	8	32%	4	25%	1956	12%	1400	15%	850	32%	499	29%
Totals	92		79		25		16		16434		9578		2687		1725	

1. Data includes only individuals who were residents of Vermont at the time of diagnosis.
2. Dash indicates no data collected for this category
3. The Vermont Department of Health does not typically release numbers with values less than 3.

HIV in Prisons

At the end of 2006, there were 20,450 inmates in state prisons and 1,530 inmates in federal prisons with HIV/AIDS.[39] There were 12 HIV/AIDS cases (all male) in Vermont prisons in 2006. This represents .7% of the total population in custody in Vermont, the second lowest in proportion of prisoners with HIV/AIDS in the northeast (Maine and New Hampshire were the lowest with .6% of all inmates in custody with HIV/AIDS). The northeast has the largest proportion of people in custody with HIV/AIDS (3.6%) among the four regions of the U.S. (Figure 22).

Figure 22. Percent of Total Custody Population with HIV/AIDS by Location: 2006 [39]



[39] Maruschak, L.M. *HIV in Prisons, 2006*. Bureau of Justice Statistics Bulletin, September 2007, U.S. Department of Justice.

Counseling, Testing, and Referral System

The State of Vermont's HIV Counseling, Testing, and Referral system (CTR) consists of 38 testing sites located throughout the state (see Table 8). In 2007, 2,250 HIV tests and results were obtained via CTR in Vermont. Since 1998, 21,499 complete tests have been conducted through CTR in Vermont.

Table 8. Vermont Counseling, Testing and Referral Sites: 2007 [29]

Site Name	Anonymous Oral Testing	Anonymous Blood Testing	Confidential Orasure and Blood	Anonymous Oral Rapid
ACORN	**X**			
Act I / Bridge Program	**X**			
AIDS Project of Southern VT-Bennington	**X**			**X**
AIDS Project of Southern VT-Brattleboro	**X**			**X**
Berlin Family Health	**X**	**X**		
Community Health Center of Burlington	**X**	**X**		**X**
Comprehensive Care Clinics [1]	**X**	**X**		
Dartmouth Hitchcock Clinic				
IMANI Health Institute	**X**	**X**		
Open Door Clinic	**X**			
Outright Vermont	**X**	**X**		
Planned Parenthood of New England [2]			**X**	
Putney Medical Office				
Richford Health Center	**X**			
RU12?	**X**			**X**
Safe Recovery	**X**			
Spectrum One Stop	**X**			**X**
VDH District Office Bennington	**X**			
VDH District Office Burlington				**X**
VDH District Office Newport	**X**			
VDH District Office St. Albans	**X**			
VT Harm Reduction Coalition	**X**	**X**		
Women of Color Alliance	**X**			

1. Comprehensive Care Clinics (CCCs) are located in Bennington, Burlington, Rutland and St. Johnsbury Vermont

2. Planned Parenthood of New England has offices in Barre, Bennington, Brattleboro, Burlington, Hyde Park, Middlebury, Newport, Rutland, Springfield, St. Albans, St. Johnsbury, Waterbury, and Williston Vermont.

Testing History and Results
Of the 2,250 tests with reported results conducted in 2007, 50% of people tested through Vermont CTR indicated that they had previously tested negative for HIV and 47% reported that they had never been tested before. The remaining 3% tested noted that they did not know their test results, had previously tested positive, had a previous inconclusive test, or a response was not specified.[40] Because there are so few new HIV diagnoses in Vermont per year, Table 9 shows the number of all HIV positive test results at CTR sites between 1989 and 2007. Most of the clients who tested positive were male, White, aged 30-39 years old, and identified their source of risk as being MSM.[40] This is similar to the profile of new diagnoses in Vermont presented earlier. Interestingly, 83% of positive test results came from anonymous tests between 1989 and 2007. Also, 39% of those who had tested negative in the past now tested positive for HIV.

HIV/AIDS Stigma

Community Size and Community Attitudes: In 2004 - 2006 two hundred HIV positive individuals participated in a Person Environment Zone project based at the University of Vermont.[41] The majority of study participants (74%) with HIV/AIDS were Vermont residents (see Appendix A).

Perceptions of HIV stigma in the form of disclosure concerns, negative self-image, concern with public attitudes, and enacted stigma were examined among men and women from metropolitan, micropolitan and rural areas.[42] Results indicated that men and women reported different levels of perceived stigma depending on their community's size. Rural women reported more disclosure concerns than did metropolitan and micropolitan women. They also reported more disclosure concerns than rural men did. Men in micropolitan areas reported more disclosure concerns than men living in metropolitan and rural areas; however men in metropolitan and rural areas did not differ on reported disclosure concerns. Women, despite the size of their community, reported more concern with public attitudes than men did (see Figure 23).

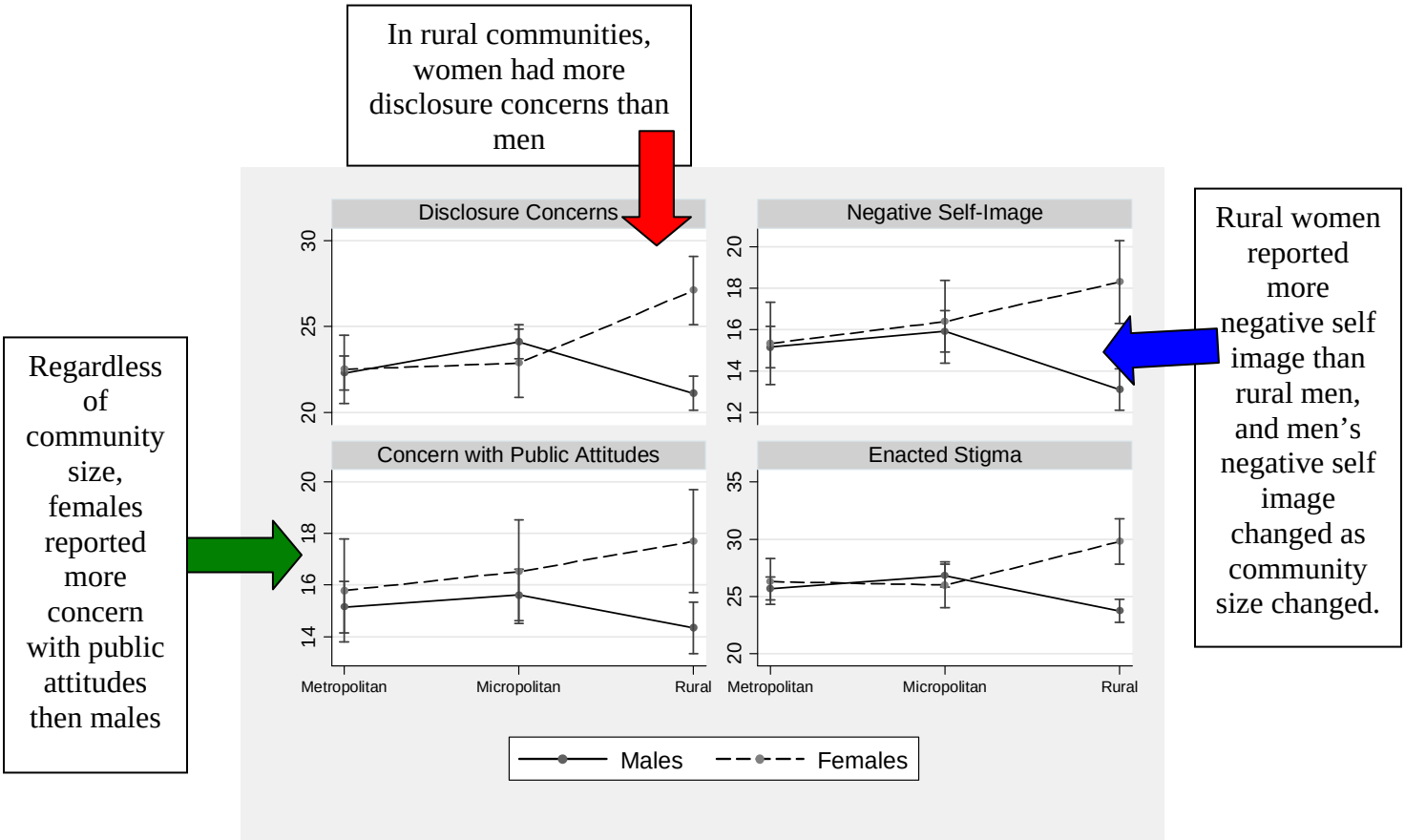
[40] Vermont Department of Health, HIV/AIDS Counseling, Testing, an Referral Coordinator.
[41] Person Environment Zone Project is supported by Grant MH 066848 from the National Institute of Mental Health.
[42] Gonzalez, A., Miller, C.T., Solomon, S. E., Bunn, J.Y., & Cassidy, D.G. (under review). Size matters: Community size, HIV stigma, & gender differences. Figure from PEZ Dispenser Seasonal Newsletter.

Table 9. Positive Test Results Obtained Through Vermont CTR: 1998-2007 [40]

	Number of Positive Test Results[1]	Percent
Sex		
Male	53	76%
Female	17	24%
Race/Ethnicity		
White	51	73%
Non-White	16	23%
Hispanic	≤3[2]	—[3]
Age		
13-19	4	6%
20-29	19	27%
30-39	25	36%
40-49	12	17%
>=50	7	10%
unknown	≤3	—
Exposure category		
MSM	29	41%
IDU	6	9%
Heterosexual, no other risk	17	24%
No acknowledged risk	4	6%
Other	9	13%
Not specified	5	7%
Type of test		
Anonymous	58	83%
Confidential	12	17%
Test history		
No previous test	25	36%
Previously negative	27	39%
Previously positive	10	14%
Previously inconclusive	4	6%
Previously unknown	≤3	—
Not specified	≤3	—

1. Based on 70 positive results obtained from collected forms collected 1998-2007.
2. The Vermont Department of Health does not typically release numbers with values less than or equal to 3.
3. Value is not calculated because of small numbers.

Figure 23. Perceptions of HIV/AIDS Stigma by Sex and Community Size [42]



Although some studies have shown that people living in rural areas do have more negative attitudes towards people with HIV/AIDS than do people living in more urbanized areas, more recent nationwide data suggests that negative attitudes towards people with HIV/AIDS are decreasing.[43, 44] One explanation for changes in expressed HIV/AIDS prejudice is that community members may be motivated to control their prejudice. A person may be internally motivated to control because it is personally important to him or her because of their own standards and values. A person may be externally motivated to control prejudice because they worry about how others will perceive them or because they are aware of politically correct standards not to be

[43] Mondragon D, Kirkman-Liff B, Schneller ES. "Hostility to People with AIDS: Risk Perception and Demographic Factors." Social Science and Medicine 10 (1991): 1137-1142.
[44] Herek GM, Capitanio JP, Widaman KF. "Stigma, Social Risk, and Health Policy: Public Attitudes Toward HIV Surveillance Policies and the Social Construction of Illness." Health Psychology 22 (2003): 533-540.

prejudiced. People who are highly identifiable in their community may be particularly sensitive to external motivations to control prejudice.[45]

Community members who said more people in their community knew who they were, personally, reported more external motivations to control prejudice against people with HIV/AIDS than did people who were not as personally well known. People who believed that others in their community knew who they were, but not personally, and who lived in rural areas were less internally motivated to control prejudice than people living in metropolitan or micropolitan areas who were similarly visible in their communities.[45]

HIV/AIDS Mortality

Since the introduction of Highly Active Anti-Retroviral Therapy (HAART) in 1996, the progression from HIV to AIDS, and from AIDS to death, has slowed considerably for many persons living with HIV in the United States.[46] There were also fewer new HIV infections in the 1990's as compared to new infections the 1980's in the U.S.[47]

Between 2002 and 2006 there were an estimated 565,927 deaths among people with AIDS in the U.S., including 14,627 in 2006 alone.[48] The total number of AIDS-related deaths in the U.S. in 2004 was 16,928; 4 of these deaths occurred among Vermont residents.[8, 48] The number of deaths with HIV/AIDS as the underlying or contributing cause may be underreported in both Vermont and national statistics because the physician completing the certificate may be unaware of the deceased individual's HIV positive status. These numbers may be different than numbers of deaths provided by HIV/AIDS surveillance because surveillance data includes deaths only for people who were Vermont residents at the time of diagnosis. For example, a person who was diagnosed with HIV in another state and later moved to Vermont and became a Vermont resident would be included in vital statistics data but not in HIV/AIDS surveillance data. The data presented in this section is based on vital statistics data so that it may be comparable with rankings of leading causes of death in Vermont.

In Vermont, a decline in HIV-related deaths began in 1995, which is a bit earlier than the national decline in HIV-related deaths. The number of HIV-related deaths in Vermont peaked at 36 deaths in 1994 and declined to 4 deaths in 2004.[8] All Vermont HIV-related deaths were male and between the ages of 45 and 59 in 2004.[8] The number of new AIDS cases in Vermont has also continuously declined during this period.[8, 29]

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[45] Bunn, J.Y., Solomon, S.E., Varni, S.E., Miller, C.T., Forehand, R., & Ashikaga, T. "Urban-Rural Differences in Motivation to Control Prejudice Toward People with HIV/AIDS: The Impact of Perceived Identifiability in the Community." Journal of Rural Health (in press).

[46] Centers for Disease Control and Prevention. *Deaths Among Persons with AIDS through December 2000*. HIV/AIDS Surveillance Supplemental Report, 2002, 8 (no. 1).

[47] The Henry J. Kaiser Family Foundation. *HIV/AIDS Policy Fact Sheet: The HIV/AIDS Epidemic in the United States*. July 2002. Available at http://www.kff.org/hivaids/upload/3029-071.pdf. Accessed on 2/7/08.

[48] "Estimated numbers of deaths of persons with AIDS, by year of death and selected characteristics, 2002-2006 and cumulative—United States and dependent areas." In *HIV/AIDS Surveillance Report, 2006*. Centers for Disease Control and Prevention

In 2004, HIV was ranked 29th (tied with both diseases of the appendix and hyperplasia of prostate) as a leading cause of death. Between 2000 and 2004, HIV was ranked 10th among 25-44 year olds in Vermont.[8] In the United States, HIV was ranked as the 6th leading cause of death among White 25-34 year olds and White 35-44 year olds.[49] In Vermont between 2000 and 2004, HIV was ranked 20th among 45 to 64 year olds as a leading cause of death, compared to being ranked 9th among White 45-54 year olds in the U.S. population (see Table 10 and Table 11).[8, 49]

Table 10. Ranking of 10 Leading Underlying Causes of Death of Vermont Residents Aged 25-44 Years, 2000-2004 [8]

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	% OF ALL RESIDENT DEATHS
1	ACCIDENTS	260	1.02%
2	MALIGNANT NEOPLASMS	186	.73%
3	INTENTIONAL SELF-HARM	136	.53%
4	DISEASES OF HEART	121	.47%
5	CHRONIC LIVER DISEASE AND CIRRHOSIS	30	.12%
6	ASSAULT (HOMICIDE)	22	.09%
7	DIABETES MELLITUS	21	.08%
8	CEREBROVASCULAR DISEASES	20	.08%
9	CONGENITAL MALFORMATIONS, DEFORMATIONS AND CHROMOSOMAL ABNORMALITIES	19	.07%
10	HUMAN IMMUNODEFICIENCY VIRUS (HIV)	18	.07%

Table 11. Ranking of 10 Leading Underlying Causes of Death of Vermont Residents Aged 45-64 Years, 2000-2004 [8]

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	% OF ALL RESIDENT DEATHS
1	MALIGNANT NEOPLASMS	1553	6.08%
2	DISEASES OF HEART	805	3.15%
3	ACCIDENTS	243	.95%
4	DIABETES MELLITUS	158	.62%
5	CHRONIC LOWER RESPIRATORY DISEASES	155	.62%
6	INTENTIONAL SELF-HARM	149	.58%
7	CHRONIC LIVER DISEASE AND CIRRHOSIS	108	.42%
8	CEREBROVASCULAR DISEASES	106	.42%
9	INFLUENZA AND PNEUMONIA	30	.12%
10	CONGENITAL MALFORMATIONS, DEFORMATIONS AND CHROMOSOMAL ABNORMALITIES	28	.11%
20	HUMAN IMMUNODEFICIENCY VIRUS (HIV)	10	.04%

[49] "Deaths, percentage of total deaths, and death rates for the leading causes of death in selected age groups, by race and sex: United States, 2004." In *Deaths: Leading Causes for 2004*. November 20, 2007. Centers for Disease Control and Prevention, Division of Vital Statistics.

Comparing the characteristics of persons living with HIV/AIDS to characteristics of people for whom HIV/AIDS was an underlying cause of death can provide information about the differences or disparities among population groups. For example, if the proportion of persons dying with HIV/AIDS in a particular group is higher than the proportion living with HIV/AIDS in the same group, then this may indicate a lack of access to health care or lack of effective treatment in that group.

It does not appear that there are large differences among those living with HIV/AIDS at the end of 2004 and those dying from HIV/AIDS between 1997 and 2004 (see Table 12). There was a somewhat greater proportion of men dying from HIV/AIDS (87.5%) than men who were living with HIV/AIDS (82.1%). Also slightly more people between the ages of 30 and 39 years old died from HIV/AIDS between 1997 and 2004 (29.6%) than were living with HIV/AIDS at the end of 2004 (24.3%). The opposite can be said for people with HIV/AIDS aged 20-29 years old. A greater proportion of people in this age group were living with HIV/AIDS (7.1%) than were dying from HIV/AIDS (1.6%).

Table 12. Deaths among Persons with HIV/AIDS in Vermont (1997-2004) and Persons Living with HIV/AIDS (2004) [8, 29]

	Deaths among persons with HIV/AIDS, 1997 – 2004 (N = 64)		Persons living with HIV/AIDS, 2004 (N = 453)	
	Number	%	Number	%
Sex				
Male	56	87.5	372	82.1
Female	8	12.5	81	17.9
Race/Ethnicity				
White, non-Hispanic	57	89.1	378	83.4
Non-White	5	7.8	50	11.0
Hispanic	≤3	—	20	4.4
Unknown			5	1.1
Age group				
<13	≤3	—	≤3	—
13-19	≤3	—	≤3	—
20-29	≤3	—	32	7.1
30-39	19	29.6	110	24.3
40-49	30	46.9	205	45.3
50+	14	21.9	101	22.3