State of Vermont
Integrated Epidemiologic Profile

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GUIDE TO ACRONYMS & ABBREVIATIONS

- **AIDS:** Acquired Immune Deficiency Syndrome, now referred to as "Stage 3" HIV infection
- **APSV:** AIDS Project of Southern Vermont, Brattleboro ASO
- **ARA:** American Rescue Act
- **ARV:** Anti-Retroviral Medication
- **ASO:** AIDS Service Organization
- **BCBS:** Blue Cross/Blue Shield [health insurance company]
- **BIPOC:** Black, Indigenous, People of Color
- **BR APT:** Bedroom Apartment
- **BRFSS:** Behavioral Risk Factor Surveillance System
- **CAG:** Community Advisory Group (VT's Integrated HIV Community Advisory Group)
- **CBO:** Community Based Organization
- **CCC:** Comprehensive Care Clinics [four sites throughout Vermont]
- **CHS:** Vermont College Health Survey
- **CTR:** Counseling Testing & Referral [Vermont's HIV Testing program through October 2017]
- **CVD:** Cardiovascular Disease
- **DEBI:** Disseminating Effective Behavioral Interventions
- **DHMC:** Dartmouth Hitchcock Medical Center, Lebanon NH
- **DSU:** VT's Department of Substance Use [Alcohol and Drug Abuse Programs through 2021]
- **eHARS:** Enhanced HIV/AIDS Reporting System
- **EOC:** Evidence of Care
- **ERA:** Emergency Rental Assistance under the American Rescue Act
- **FMR:** Fair Market Rate, as in Fair Market Rate Rent
- **FPL:** Federal Poverty Level
- **FTM:** Female-to-Male Transsexual/Transgender
- **GBMSM:** Gay and Bisexual Men who have Sex with Men
- **H2RC:** HIV/HCV Resource Center, NH/VT ASO
- **HAART:** Highly Active Anti-retroviral Therapy
- **HIV:** Human Immunodeficiency Virus
- **HCV:** Hepatitis C Virus
- **HOPWA:** Housing Opportunities for Persons with AIDS
- **HRH:** High Risk Heterosexual [risk factor/transmission category]
- **HSH:** VT Department of Health's HIV, STD, and Viral Hepatitis Program
- **HUD:** Housing & Urban Development
- **IDU:** Injection Drug Use
- **LGB:** Lesbian, Gay & Bisexual
- **LGBTQ:** Lesbian, Gay, Bisexual, Transgender, Queer/Questioning
- **MAT/SUD:** Medical Assisted Treatment for Substance Use Disorder
- **MCM:** Medical Cast Management [Service Category]
- **MSA:** Metropolitan Statistical Area (US Census unit of geographic measure)
- **MSM:** Men who have Sex with Men; in state epidemiology data MSM indicates the Transmission Category "Male to Male Sexual Contact"
- **MTF:** Male-to-Female Transsexual/Transgender
- **MVP:** MVP Healthcare [health insurance company in Vermont's Marketplace]
- **NCHS:** National Center for Health Statistics
- **NESARC:** National Epidemiology Survey on Alcohol and Related Conditions
- **NHAS:** National HIV/AIDS Strategy
- **NHSS:** National HIV Surveillance System
- **NIR:** No Identified Risk [HIV Transmission Category]
- **NMCM:** Non-Medical Case Management [HIV Service Category]
- **NSDUH:** National Survey on Drug Use and Health
- **NVSS:** National Vital Statistics System
- **OTC:** Over the Counter [Medication]

- **PCP:** Primary Care Provider
- **PEP:** Post-Exposure Prophylaxis
- **PLWDHI:** People/Person Living with Diagnosed HIV Infection
- **POC:** People of Color
- **PrEP:** Pre-Exposure Prophylaxis
- **PWID:** People Who Inject Drugs/Person Who Injects Drugs
- **RWHAP:** Ryan White HIV/AIDS Program
- **SDE:** Sexual and Gender Diverse [Population]
- **SDH:** Social Determinants of Health
- **SNAP:** Supplemental Nutrition Assistance Program
- **SSI:** Supplemental Security Income
- **SSP:** Syringe Service Program
- **STD:** Sexually Transmitted Disease
- **STI:** Sexually Transmitted Infection
- **SUDORS:** Vermont's State Unintentional Drug Overdose Reporting System
- **TAH:** Trust for America's Health
- **TAP:** Treatment as Prevention
- **TasP:** Treatment as Prevention
- **TB:** Tuberculosis
- **TNB:** Transgender/NonBinary
- **TRL:** Testing Referral & Linkage [Vermont's HIV Testing program beginning October 2017]
- **US:** United States
- **UVMMC:** University of Vermont Medical Center
- **VDH:** Vermont Department of Health
- **VHC:** Vermont Health Connect
- **VLT:** Viral Load Test
- **VMAP:** Vermont Medication Assistance Program
- **VSAR:** Vermont Social Autopsy Report: 2021 Data Analysis
- **VSHA:** Vermont State Housing Authority
- **VSHNA 2015:** Vermont 2015 Statewide HIV Needs Assessment
- **VSHNA 2021:** Vermont 2021 Statewide HIV Needs Assessment
- **VT:** Vermont
- **VTCARES:** Vermont CARES, Burlington ASO
- **YTD:** Year to Date

EXECUTIVE SUMMARY

The **2023 Vermont Epidemiologic Profile** follows the latest guidance provided by the Centers for Disease Control and Prevention and the Health Resources & Services Administration – the *Integrated Guidance for Developing Epidemiologic Profiles: HIV Prevention and Ryan White HIV/AIDS Programs Planning*, dated March 2022. This profile offers a comprehensive description of Vermont's HIV/AIDS epidemic, structured according to the guidance's core domains:

Domain 1—Characteristics of General Population in Service Area
Domain 2—Epidemiology of HIV in Service Area
Domain 3—HIV Care and Treatment among People with HIV in Service Area
Domain 4—Prevention of HIV in Service Area

A high-level overview of the HIV epidemic from Vermont's **2021 HIV Annual Report** follows:

- Vermont has **728** confirmed People Living with Diagnosed HIV Infection (PLWDHI) as of December 31, 2021, for a case rate of **112.5 per 100,000.** *Of those 728:*
  - **66%** are age 50 or over
  - **60%** were living in Vermont at time of diagnosis
  - **54%** represent the transmission category of male-to-male sexual contact
- All **728 cases** were linked to and received care, with evidence of care within the past 5 years in the form of a viral load test. *Of those 728:*
  - **595 (82%)** were retained in care, with evidence of care in the previous 12 months
  - **562 (77%)** are virally suppressed
- **11** individuals were diagnosed with HIV in 2021. *Of those 11:*
  - **100% (11)** were linked to care within one month
  - **55% (6)** were Stage 3 or "late diagnoses"
  - The **majority** were Male and White, Non-Hispanic

Vermont is a small, rural state with a low overall population, a correspondingly small HIV positive population, and low HIV incidence. The state is primarily rural, largely racially-homogenous, and weighted toward an older age range. Among others, these are essential facts to hold in mind when reviewing the state epidemiologic profile.

Vermont's HIV Surveillance office maintains the integrated HIV programmatic data-sharing and analysis required and recommended by both HRSA and CDC, including but not limited to:

- HIV viral load measurement, including non-detectable results.
- All HIV subtype and HIV nucleotide sequence data from ARV drug resistance testing.
- CD4 and T-lymphocyte counts and percentages, all results.
- Use of HIV-1 nucleotide sequencing data to monitor prevalence of ARV drug resistance and HIV genetic diversity subtypes and transmission patterns.
- Use of cluster detection programs to conduct real-time analysis.
- Reporting of all HIV-related CD4 results (counts and percentages) and all viral load results (undetectable and specific values) to the National HIV Surveillance System (NHSS).

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INTRODUCTION

BACKGROUND: Profile History & Purpose

Vermont's 2023 Integrated Epidemiologic Profile was prepared under the CDC and HRSA's *Integrated Guidance for Developing Epidemiologic Profiles*, March 2022. This document's purpose is to *describe the demographic, social determinants, geographic, behavioral, and clinical characteristics of persons with HIV and other persons who could benefit from HIV prevention* in Vermont, thereby providing a comprehensive tool for use in *allocating HIV prevention and care resources, planning programs, and evaluating programs and policies*. This profile represents a comprehensive update to Vermont's last epidemiologic profile, filed in 2017.

State epidemiology information is circulated to, and informed by, the statewide community planning body, the HIV Community Advisory Group (CAG). At the bimonthly meetings, performance-to-goals data is reviewed for all agencies funded according to state epidemiologic priorities. This updated Epidemiologic Profile will help inform future statewide needs assessments, integrated prevention and care plan completion, and identification and analyses of gaps in service.

GENERAL DESCRIPTION: Data Sources, Strengths and Limitations

Data Sources:

- Behavioral Risk Factor Surveillance System
- CDC HIV Surveillance Reports
- CDC Vermont State Health Profile
- Comprehensive Care Clinics – Vermont's HIV/AIDS infectious disease clinic system
- Emory Coalition for Applied Modeling for Prevention, Emory University
- National Center for Health Statistics Mortality Dataset
- National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Atlas
- National Electronic Disease Surveillance System Base System
- National Survey on Drug Use and Health
- National Vital Statistics System
- Ryan White HIV/AIDS Program Client Level Data Reports
- State MSM Profile: Vermont – Emory University CAMP/CDC
- Trust for America's Health
- United States Census
- Vermont Department of Health
    - eHARS
    - HIV/AIDS Surveillance
    - Funded Agency Quarterly Service Reports
    - HIV Testing Program Data
    - Sexually Transmitted Disease Surveillance
    - CAREWare
    - Evaluation Web
- Vermont 2017 Integrated Epidemiologic Profile for HIV/AIDS Prevention and Care Planning
- Vermont 2016 Integrated HIV Prevention & Care Plan, with Coordinated Statement of Need
- Vermont 2022-2026 Integrated HIV Prevention & Care Plan, with Coordinated Statement of Need
- Vermont Social Autopsy Report: 2021 Data Analysis
- Vermont State Unintentional Drug Overdose Reporting System

- Vermont 2015 Statewide HIV Needs Assessment
- Vermont 2021 Statewide HIV Needs Assessment
- Williams Institute

Data Sources Strengths & Limitations:

HIV Surveillance is part of the **Vermont Department of Health's Laboratory Sciences and Infectious Disease Division**. Vermont's surveillance systems remain strong and VDH prioritizes continuous improvement in data collection, reporting and analysis.

Vermont's low HIV morbidity and small state population limits reporting and analysis in certain categories. The *Health Surveillance Division* at VDH uses a cell suppression rule to preserve anonymity and to ensure meaningful numeric calculations. Throughout this profile, any instance of *five or fewer cases that include demographic information that could be identifying* requires suppression of the data point, and it is replaced with an asterisk. While this stymies analysis in some areas, efforts have been taken to provide the maximum amount of information under these constraints by grouping demographic categories when possible and presenting summary data.

The small nature of the state also increases epidemiologic data accuracy, with direct relationships existing between VDH and all service providers in the state. Surveillance staff are in regular contact with service providers, service providers are seated on the state's HIV Community Advisory Group, and the VDH's *HIV, STI, Viral Hepatitis Program* communicates directly with providers throughout Vermont regarding PLWDHI and those newly diagnosed.

HIV data reported through medical providers, laboratories, and HIV service providers are of high accuracy. The reported data are limited to individuals that *have been in-* or *are currently in-* care. HIV surveillance data is also provided through Quarterly Service Reports from care and prevention grantees, VDH's HIV Community Advisory Group, and the Vermont Statewide HIV Needs Assessments, completed every five years as circumstances have allowed.[1]

A primary population of interest to epidemiologic concerns is HIV-positive individuals who know their status but are not engaged in care, and HIV-positive individuals who are not aware of their status. The first category is a difficult-to-reach population that presents one of the largest limitations to Vermont's *HIV Needs Assessments* despite considerable effort. Locating VT PLWDHI who are not already in care has proved difficult. The latter population is by definition unidentified, and is the primary population sought in the state's targeted HIV testing efforts. Vermont's small size and rural nature limit the usefulness of estimation models to calculate a projected number of "HIV infected but unaware" but the CDC's estimation in this regard is found in this document on page 32.

Another data limitation worth noting is that the HIV program works with multiple data systems that operate with different definitions and sets of data variables collected. For example, HIV surveillance data is housed separately from other infectious disease surveillance data, presenting a challenge when compiling comprehensive comorbidity data. Although every effort is made to ensure accurate person matching between different data systems, the inherent nature of working with multiple databases means there are opportunities for data to not align appropriately.

[1] Among the extensive impacts the COVID-19 pandemic had on the state's HIV program, the Needs Assessment was delayed a full year and took place in 2021.

Comorbidities outside of other infectious diseases, such as mental health and substance use-related diagnoses, are not currently possible to ascertain due to lack of access to that diagnosis information. The COVID-19 pandemic called attention to data infrastructure struggles, with the Trust for America's Health publishing recommendations on increased and sustained funding to meet the need for improving a "fractured and outdated public health data infrastructure" running on "antiquated data systems."[2]

Vermont participates in national health surveys, including the *Behavioral Risk Factor Surveillance System (BRFSS),* the *Youth Risk Behavior Survey,* and the *National Survey on Drug Use and Health (NSDUH)*, the results of which provide an overview at a state level of many data points of interest to HIV care and prevention.

A limitation of these survey data sources is their central structure, based in self-report. This is of higher concern for reported data on sensitive, personal, and often stigmatized topics such as HIV, sexual behavior, and drug use. As population-based studies, generalization of data from these surveys is limited for targeted, higher-risk subpopulations. Men who have Sex with Men (MSM) and People Who Inject Drugs (PWID) are numerically-limited populations, with reporting from the latter category further complicated by the illegality of most injection drug use. HIV testing attitudes overall in the community may be generalized from the BRFSS data, but these broader surveys may reveal little about the reach of targeted testing efforts in higher risk communities.

Further limitations include:

- As a random telephone survey, *BRFSS* is limited to reaching individuals with telephone access and reliable cellphone reception, which often precludes individuals in specific rural locations throughout the state, and those struggling with poverty and/or substance use.
- Self-report data raises concerns of self-selection and recall bias.
- Self-report data is vulnerable to individuals' perceptions of what is appropriate to reveal. When response trends diverge along demographic lines such as gender, education or socioeconomic status, it raises the question: does a given population *have a higher or lower rate* of a given risk behavior than other populations, or is that given population *more or less likely to report* participation in those risk behaviors.
    - A well-known example in research is that men consistently report more sexual partners in a 12-month period than women. This could be because men do have more sexual partners than women, but it could also be that women are disinclined to report multiple sexual partners, even in an anonymous survey, due to societal pressure and judgement. This applies to multiple categories, not just participation in higher-risk behaviors for HIV transmission.

Strengths present in all of these risk survey sources include their anonymous nature, which presents less judgement and encourages more honest answers, and the sheer size and reach of the sample sets.

For the purposes of this profile, a strength of Vermont's data from these surveys includes the state's repeated selection of questions that pertain to sexual risk behaviors and that inquire about sexual orientation and gender identity. As a result of the inclusion of sexual orientation questions, Vermont has been able to cross reference data and inform this profile a great deal, given the primary burden of HIV in Vermont – over half – is within the Men who have Sex with Men community.

[2] Trust for America's Health. The Impact of Chronic Underfunding on America's Public Health System: Trends, Risks, and Recommendations, 2022.

Acquisition of sexual and gender minority data faces limitations in the collection, combination and assessment of transgender data in various data sets. Currently, there is no one standardized method of collecting and categorizing transgender populations and risk factor data nationwide, even among research conducted on sexual and gender minorities. Lesbian, Gay, and Bisexual are all designations of sexual orientation while Transgender is a designation of gender identity, offering no information regarding an individual's sexual orientation. This presents complications in both the estimation and representation of transgender populations, and the accuracy of sexual orientation reporting. Transgender individuals are routinely counted only in the category of "LGBTQ community."

These limitations, while working with small subsets of populations and low numbers in a state such as Vermont, are pertinent to HIV epidemiology and need to be raised here for consideration. Transgender individuals – male-to-female (MTF), female-to-male (FTM), and those identifying outside the binary – are at higher risk for HIV infection for a variety of reasons including biology, common sexual behaviors, use of injection equipment for hormones, reduced sexual self-efficacy due to body dysphoria, sex work, and vulnerability to abusive sexual/relationship experiences. MTF transgender individuals have been demonstrated to be at higher risk throughout the history of the HIV epidemic, particularly transwomen of color. While information is limited on FTM transgender individuals and HIV, similar higher-risk factors are present among MSM FTMs that are present in the state's cisgender MSM community. This has been confirmed by data gathered by Vermont MSM prevention efforts with FTM individuals who identify as gay, bisexual or queer.

In Vermont, data on transgender identity has been collected and individuals identifying as transgender have been counted within the LGBTQ population data set. Additional research within the VDH *BRFSS* records indicates that an estimated one percent of Vermont respondents identified as transgender.

A considerable strength in Vermont's data is the state's consistent best use of the tools it does have, and prioritization of the HIV epidemic. While at times it can be difficult to generalize the data, it is valuable information for a broader picture of Vermont's HIV epidemic.

Profile Strengths & Limitations:

Overall, this Profile provides a strong body of data to examine the HIV epidemic in Vermont, within the constraints of the available data sources. Utilizing every tool available, the best picture of HIV epidemiologic data is assembled here and interpreted.

Low incidence states such as Vermont are limited by a lack of available resources for extensive measurement projects specific to HIV and higher-risk populations. The statewide 2015 HIV Needs Assessment and 2021 HIV Needs Assessment both studied the care concerns of the HIV positive population in-depth, but did not have resources for the same level of investigation with members of higher-risk HIV negative populations including MSM, the younger queer population, and heterosexuals at higher risk. The COVID-19 pandemic curtailed the reach of the 2021 HIV Needs Assessment to the extent that the assessment was redesigned to accommodate the limitations COVID presented.

As in other states, the COVID-19 pandemic had lasting impact on the state's HIV program, in the areas of surveillance, programming, and service delivery. A primary limitation of this profile must be identified as its time period – the 2017 to 2021 five-year stretch included two years of the pandemic, with the CDC reporting the first laboratory-confirmed case of the 2019 Novel Coronavirus in the US on January 20, 2020.

The impact of COVID-19 has been well-recorded for the medical community at large, hospital systems, schools, corporations, and on the US public health departments and infrastructure. DeSalvo, et al., summarize this in their article "Public Health COVID-19 Impact Assessment: Lessons Learned and Compelling Needs":

> "Chronically inadequate funding, workforce shortages, and outdated infrastructure limit the [public health] sector's capacity to address existing population health needs and its flexibility to respond to emergency situations. COVID-19 has newly exposed and further exacerbated these long-standing challenges... While health departments have been foundational to the nation's response to the pandemic (e.g., guidance development, testing and tracing) the sector has experienced numerous challenges with causes both old (e.g., gaps in information technology) and new (e.g., politicization and mistrust of public health leaders and guidance). From the subversion of public health's mandate to the malignment of public health officials to the neglect of public health capabilities, the pandemic has illustrated the need for structural reforms to restore the public health sector's foundational role in American communities."[3]

Vermont Department of Health's ***Laboratory Sciences and Infectious Disease Division*** was impacted for an extended period of time. All members of Vermont's HIV/STI/Viral Hepatitis Program staff, including surveillance, were assigned to COVID emergency response for the duration, and HIV work along with other programming was reduced to the bare minimum. This echoed the experiences of public health departments around the nation throughout the pandemic, variously reported in studies and articles as: requiring staff to perform "double duty without a commensurate increase in resources;" placing "extraordinary pressure" on public health officials and "stretching the system to the brink of its capacity;" creating "reduction[s] in HIV and hepatitis health department staff;" and in a phrase capturing the sometimes-surreal impact of the pandemic, "requir[ing] public health agencies to [manage] two divergent realities during the pandemic."[4,5,6,7,8]

These statements are not hyperbole. The sheer amount of public health staffing and effort diverted from assigned programs to cover COVID-19 duties was staggering.[9] Across HIV care and treatment, HIV prevention, and hepatitis programs, the "single greatest challenge" to health departments in meeting programmatic and reporting goals was the detailing of staff to COVID-19 response:

> "The detailing of staff is a particularly acute problem for HIV prevention programs, with more that 90% of jurisdictions reporting staff being detailed to the COVID-19 response... Staff

[3] DeSalvo, Karen MD, MPH, MSc, et al. "Public Health COVID-19 Impact Assessment: Lessons Learned and Compelling Needs." National Academy of Medicines, *NAM Perspectives*. 2021. Published online 2021, April 7. Accessed December 2023.
[4] Ibid.
[5] Center for Innovation and Engagement: NASTAD's Health Equity Team, https://ciehealth.org/the-covid-19-pandemics-impact-on-health-departments/. Accessed December 2023.
[6] Gilligan, Peter, Ph.D. "Impact of COVID-19 on Infectious Diseases and Public Health." *American Society for Microbiology*. https://asm.org/articles/2022/february/impact-of-covid-19-on-infectious-diseases-and-publ. Accessed December 2023.
[7] "The Impact of Chronic Underfunding on America's Public Health System: Trends, Risks, and Recommendations, 2022." Trust for America's Health. https://www.tfah.org/report-details/funding-report-2022. Accessed December 2023.
[8] Leider, et al. "The Exodus Of State And Local Public Health Employees: Separations Started Before And Continued Throughout COVID-19." *Health Affairs Vol. 42, No. 3: Public Health During Covid-19 & More.* March 2023.
[9] Gilligan, in "Impact of COVID-19…": "A survey of over 26,000 U.S. public health workers, conducted in spring 2021, reported that 90% of participants spent at least some time on the COVID-19 public health response, while slightly more than 50% spent more than half of their work time on COVID-19-related activities; 59% worked over 40 hours per week, and 12% worked more than 60 hours per week on COVID-19-related activities."

> detailing directly impacts health departments' ability to implement and scale up successful HIV prevention programs."[10]

Beyond COVID's occupation of Health Department staff and energies, broader changes occurred as well. Health-seeking behaviors and access to HIV testing and community care changed. Community HIV testing was suspended by mandate due to social distancing requirements and virus proximity regulations. People from all communities were resistant to leave their homes and were fearful of entering hospitals, clinics, and primary care offices; this was true for individuals with HIV facing COVID with a potentially compromised immune system. Due to the ease of COVID contagion, people were encouraged not to come in-person to health care facilities, unless it was a health emergency. People were routed through long lines during narrow time windows on specific days of the week, to sit waiting to be tested for COVID through their car window. Telehealth, with many strengths but also some limitations, became commonplace.

For an infectious disease such as HIV, that compromises the immune system and still carries stigma and generates fear, this environment created isolation and alienation among individuals at higher risk.

VDH is concerned that Vermont's low incidence numbers from 2020 and 2021 may well reflect societal shifts of the pandemic when HIV testing was not available to many at highest risk. Less HIV testing occurred overall and fewer people in higher-risk populations were seeking care of any sort. The ability of HIV prevention providers to "walk a client" to a referral for additional testing and care, something historically embedded in Vermont's continuum of care, was reduced. Vermont's diagnoses of HIV were the lowest they have been in years, in both 2020 and 2021. Furthermore, even as in-person testing in community-based settings returned in 2022, the preliminary data indicates 2022 will have total HIV diagnoses in the single digits and 2023 shows indications of continuing the trend.[11]

Risk behaviors for HIV were impacted by COVID, but the full extent of *how* is not known and difficult to determine for a small, rural state. Certain trends such as increased substance use during the pandemic have been widely documented across the US, and Vermont saw increases in number of drug overdoses both fatal and non-fatal, and increases in the number of young adults both initiating, and increasing use of, marijuana and alcohol, specifically in the age range of 21 – 25 years.[12]

Indications from national research on impact on sexually transmitted infection testing and diagnoses can be extrapolated to Vermont. Pinto, et al., summarized the effects on chlamydia and gonorrhea testing and positivity in a study published in May 2021 in the *American Journal of Preventive Medicine*:

> "Chlamydia and gonorrhea testing reached a nadir in early April 2020, with decreases (relative to the baseline level) of 59% for female patients and 63% for male patients. Declines in testing were strongly associated with increases in weekly positivity rates... From March 2020 through June 2020, an expected 27,659 (26.4%) chlamydia and 5,577 (16.5%) gonorrhea cases were potentially missed. …These findings should serve as a warning for the potential sexual and reproductive health implications that can be expected from the overall decline in testing and potential missed cases."[13]

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[10] Center for Innovation and Engagement: NASTAD's Health Equity Team, https://ciehealth.org/the-covid-19-pandemics-impact-on-health-departments/

[11] VDH HIV Surveillance preliminary data, December 2023.

[12] VDH Data Brief: Substance Use in Vermont during COVID-19, June 2021.

[13] Pinto, et al. "Impact of the COVID-19 Pandemic on Chlamydia and Gonorrhea Screening in the U.S." *American Journal of Preventive Medicine*. VOL 61, ISSUE 3, P386-393. September 2021.

An editorial in *AIDS Behavior* from August 2020 presents the perspective that has featured in risk and prevention discussions here in Vermont:

> "The integral role of sexual health in many people's lives… suggests it is implausible to expect sexual contacts to cease for months or years in response to social distancing and stay-at-home guidelines while awaiting new vaccines and therapeutics."

This topic has been assessed to a limited degree through Vermont's 2021 HIV Needs Assessment, and results indicated that sexual activity with new partners was occurring during the pandemic. Vermont has no remaining gay clubs/bars and much interpersonal connection is established through online apps, especially during winter months. An analysis of the continued potential for risk that addresses root causes comes from the same editorial from *AIDS Behavior*.

> "Among the core lessons to emerge from the HIV response is the failure of sex-negative, stigmatizing, and ideologically driven approaches that defy science (e.g., abstinence-based interventions). …[U]nilateral proscriptions around sex fail to capture the complexity of many Gay and Bisexual MSM's (GBMSM) sexual lives. …Calls to shut down sexual network apps used by GBMSM in the context of the COVID-19 pandemic fail to account for their role in promoting health and social support."[14]

As always, the Epidemiologic Profile guides the direction of HIV programming in VT. The factors and concerns raised here are an integral part of the HIV landscape the state will be working with for the foreseeable future.

[14] Newman, Peter and Adrian Guta. "How to Have Sex in an Epidemic Redux: Reinforcing HIV Prevention in the COVID-19 Pandemic." *AIDS and Behavior. Notes From The Field.* Published: 04 June 2020. Volume 24, pages 2260–2264 (2020).

CORE EPIDEMIOLOGIC QUESTIONS AND ANSWERS

SECTION 1. Domain 1 - Characteristics of General Population in Vermont

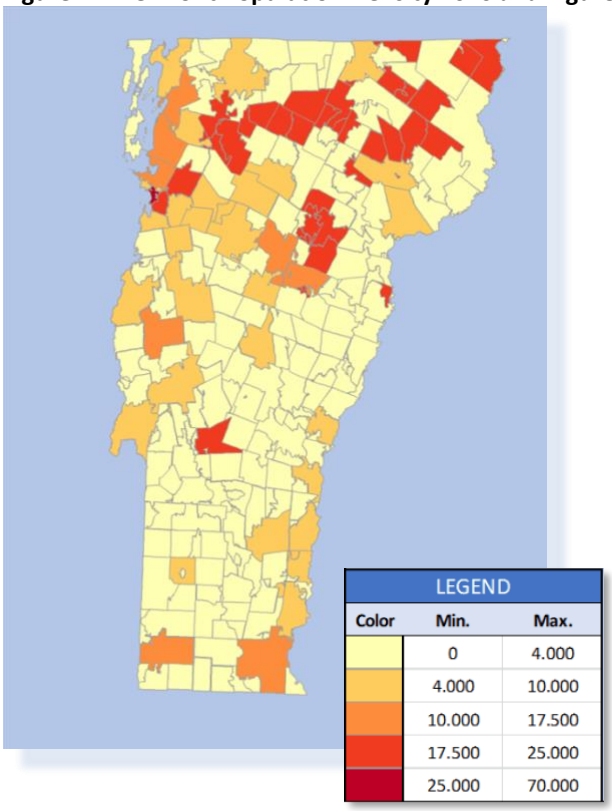
⇒ **CORE QUESTION 1.1:** What are the **demographic characteristics** and **social determinants of health** among the general population in Vermont?

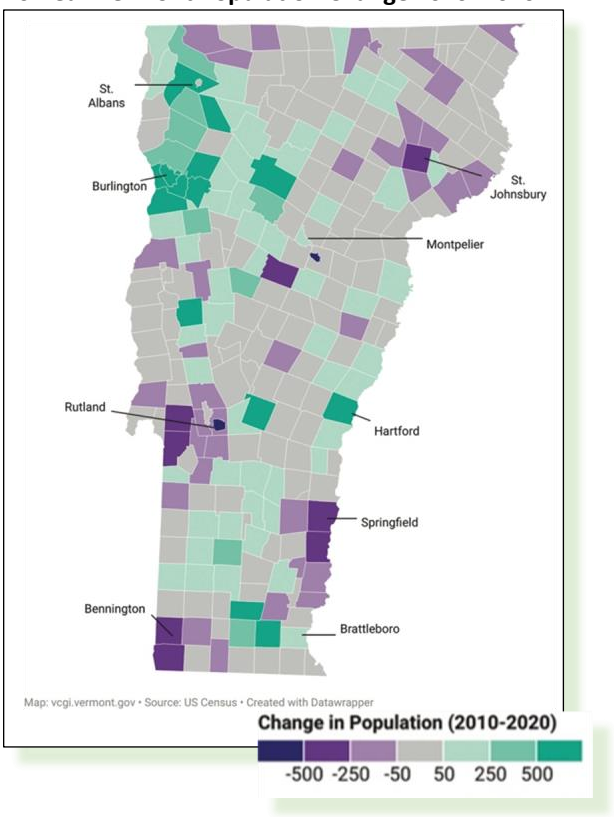
Vermont State Demographic Characteristics

Vermont is a small, rural state – 9,216 square miles that average 68 people per square mile. With a total Census-estimated population of 647,064 residents as of July 2022, Vermont is second only to Wyoming as the US state with the lowest population.[15] Vermont's 14 counties range in population size from 5,900 to 168,000. There is one city over 44,000 people, and four cities over 10,000. The one large city – Burlington – qualifies as a *Metropolitan Statistical Area* (MSA) for the US Census.

Following that single MSA, VT has 22 *urban areas*, one *urbanized area*, and 21 *urban clusters*. Of 121 incorporated areas such as cities and towns, 86% (104) meet the Census definition of rural – under 2,500 people in residence.[16] More than one quarter of Vermonters live in Chittenden County, with Rutland County the second most populous.

Figure #1: Vermont Population Density 2020 *and* **Figure #2: 10-Year Vermont Population Change 2010 -2020**





While the US Census recommends the decennial census as the most accurate, and that is reflected in the two charts above, a review of Vermont's population changes during the COVID-19 pandemic is a

[15] U.S. Census Estimates, 2021.
[16] Vermont State Health Assessment 2018; U.S. Census.

matter of interest, due to impact on social determinants of health, especially housing. VT experienced an influx of people moving from other states during the pandemic, a great number of whom bought homes. Home sales to out-of-state buyers are reflected in **Chart #1**, adjacent.

Chart #1. VT Residential Property Sales to Out-of-State Buyers, 2017 – 2021

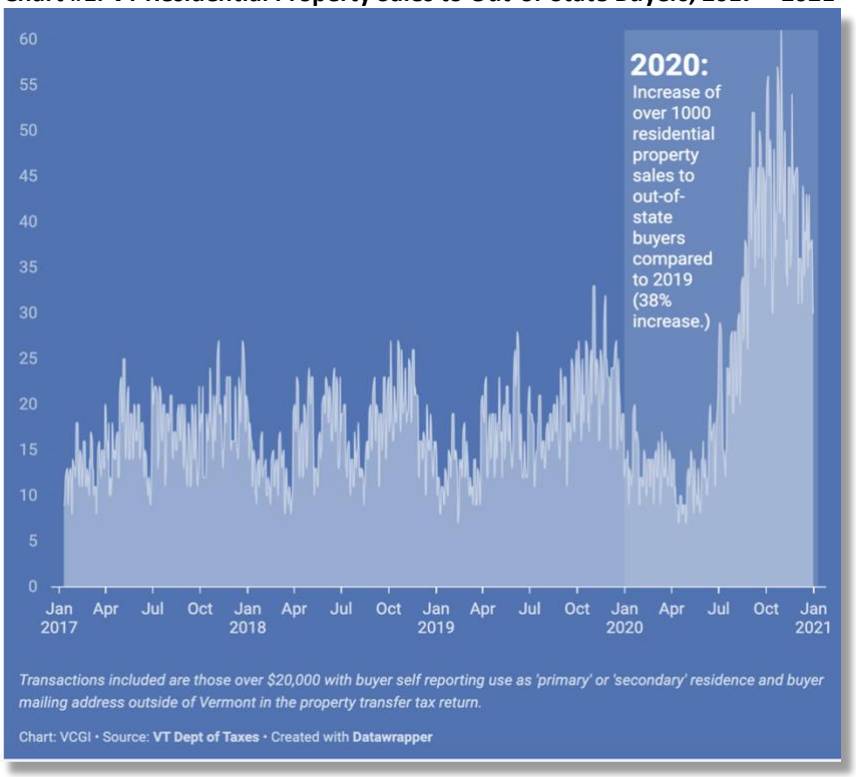
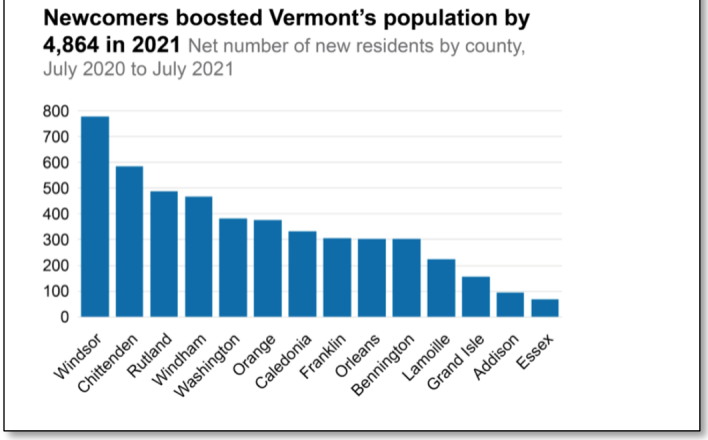


Chart #2, below, indicates the increase in actual population, during the **July 2020** to **July 2021** timespan.[17,18] Following the COVID-19 incursion, less migration occurred in the latter half of 2021 but from 2021 to 2022, there was no corresponding decrease. Vermont gained an additional 2,000 people in the **July 2021 to July 2022** period.

Home sales to out-of-state residents decreased in the second year of the pandemic, according to data from the VT Department of Taxes, with approximately 4,000 home sales reporting out-of-state buyers in 2022, compared with approximately 5,200 in 2021.[19] This remains higher than pre-pandemic purchases. The rapidly-increasing home prices exacerbated an existing affordable housing crisis and rents across the state rose, described in more detail in this profile's review of Vermont's social determinants of health.

Chart #2. VT Population Increases During COVID-19 Pandemic



The tables below present Vermont's overall adult demographics, as reported through the Behavioral Risk Factor Surveillance System, year ending 2021.

[17] Wertlieb, Mitch and Karen Anderson. "Long known for its dwindling population, Vermont sees a recent uptick in new residents." Vermont Public, August 24, 2022. https://www.vermontpublic.org/local-news/2022-08-24/long-known-for-its-dwindling-population-vermont-sees-a-recent-uptick-in-new-residents Accessed 2023.
[18] Cooney, Melissa. "Report: Data backs Vermont's pandemic population growth." WCAX, Jul 26, 2022. https://www.wcax.com/2022/07/26/report-data-backs-vermonts-pandemic-population-growth/
[19] Petenko, Erik. Vermont population barely grew in 2nd hear of pandemic." VTDIGGER. April 3, 2023. https://vtdigger.org/2023/04/03/vermont-population-barely-grew-in-2nd-year-of-pandemic/. Accessed December 2023.

Table #1. Vermont Demographic Characteristics, Year Ending 2021, Adults 18 years and Older

Demographic Characteristics, 2021		Percent
Sex	Male	49%
	Female	51%
Age	18-24	13%
	25-44	29%
	45-64	32%
	65+	26%
Education Level	High School or Less	36%
	Some College	28%
	College or More	35%
Household Income Level	Low (<$25K)	13%
	Middle ($25K-<$50K)	25%
	High ($50K-<$75K)	19%
	Highest (≥$75K)	42%
Disability	No Disability	75%
	Any Disability	25%

Demographic Characteristics, 2021		Percent
Race/ Ethnicity	White	93%
	Hispanic	2%
	Asian, Native Hawaiian, Pacific Islander	1%
	Alaskan Native, American Indian	1%
	Black	1%
	Multi-racial	1%
	Other race	1%
Sexual Orientation	Heterosexual	90%
	Bisexual	6%
	Lesbian/Gay	2%
	Other sexual orientation	2%
Gender Identity	Cisgender	99%
	Transgender	1%

Demographic Characteristics, 2021		Percent
Pregnancy Status	Pregnant	4%
	Not Pregnant	96%
Veteran Status	Veteran	9%
	Non-Veteran	91%
Marital Status	Married	51%
	Never Married	23%
	Divorced	13%
	Widowed	6%
	Unmarried Couple	6%
	Separated	1%
Employment Status	Employed	62%
	Retired	22%
	Unemployed	5%
	Unable to Work	5%
	Student	5%
	Homemaker	2%
Homeowner Status	Own	74%
	Rent	21%
	Other Arrangement	5%
Children Under 18 Years of Age in the Home	No Children	72%
	One Child	12%
	Two Children	11%
	Three Children	3%
	Four or More Children	2%

Age

The 2021 Behavioral Risk Factor Surveillance System (BRFSS) bases its percentages on just the *adult population*, 18 years and over. The 2021 US Census, calculating all VT residents and not just adults over 18, places 20.6% of VT's population 65 or above, versus 16.8% of the US population, shown in **Chart #3**. As viewed in whole through the Census, Vermont's age demographic skews older than the national average, with a median age of 43 years, versus a national median age of 38.[20] Census data also highlights Vermont's lower-than-average population aged 18 and below, 22.5% versus the national 27.9%. Five year trends indicate that the skew toward an older age ranges continues to increase at 1 to 2% per year.

Race/Ethnicity

Vermont has a homogenous racial composition – the state's population has remained over 90% White throughout its history. For year ending 2021, BRFSS data indicates 93% of

Vermont Demographics of Note:

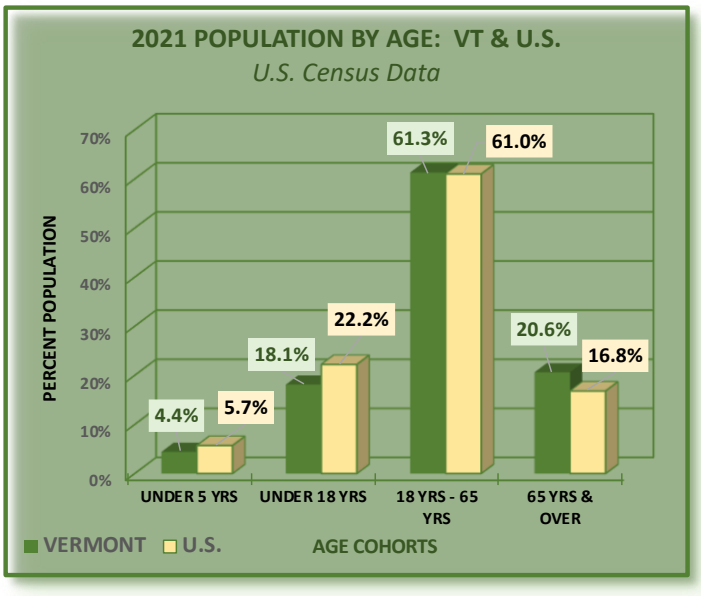
- ***Two thirds** of the state's adult population is **over 45 years of age** (58%).*
- *Vermont is **racially homogenous** with 93% of the adult population identifying as White.*
- *The percent of Vermonters with an education level of "high school or less" (36%) is **approximately equal** to the percent with an education level of "college degree or higher" (35%).*
- ***Over one third** of Vermonters (38%) **earn $50,000 or less** per year.*

[20] VT State Health Assessment 2018.

the adult population (>18 years) is White; US Census data indicates 94.2% of the total population is White.[21]

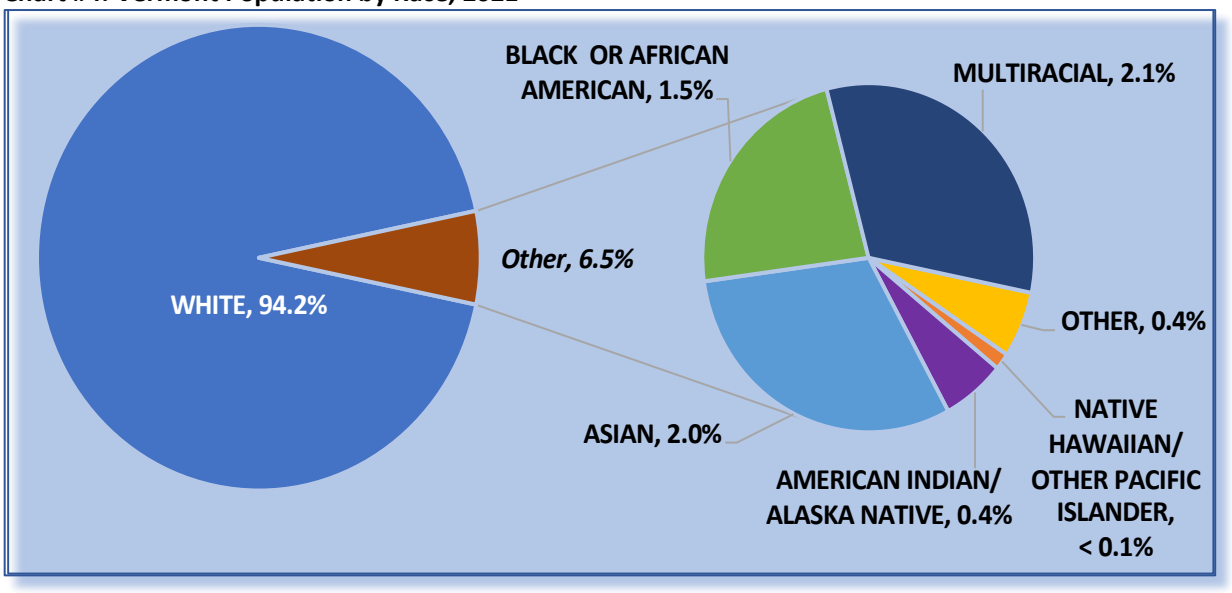
While BRFSS statistics looking only at adults allocate 1% to all other racial identities, US Census data indicates that for VT's entire population, other race representation begins with Asian at 2% of the population and Two-or-More Races at 2.1%, followed by African American at 1.5%. Individuals identifying as Hispanic or Latino make up 2.2% of VT's population, and White, Non-Hispanic make up 92.2%.[22]

Chart #3. Adult Population by Age, Vermont & United States



While VT is among the states with the lowest rates of population diversity, the Black, Indigenous, and People of Color (BIPOC) communities are seeing slow increases. Each year indicates incremental increases across BIPOC demographics. In addition, the Census population data does not include thousands of temporary Vermonters, including students, seasonal employees and residents, and undocumented farm workers who support the state's agricultural industry and frequently represent BIPOC.[23] The agriculture industry—an economic mainstay in Vermont—relies on immigrants for 10% of its employees.[24]

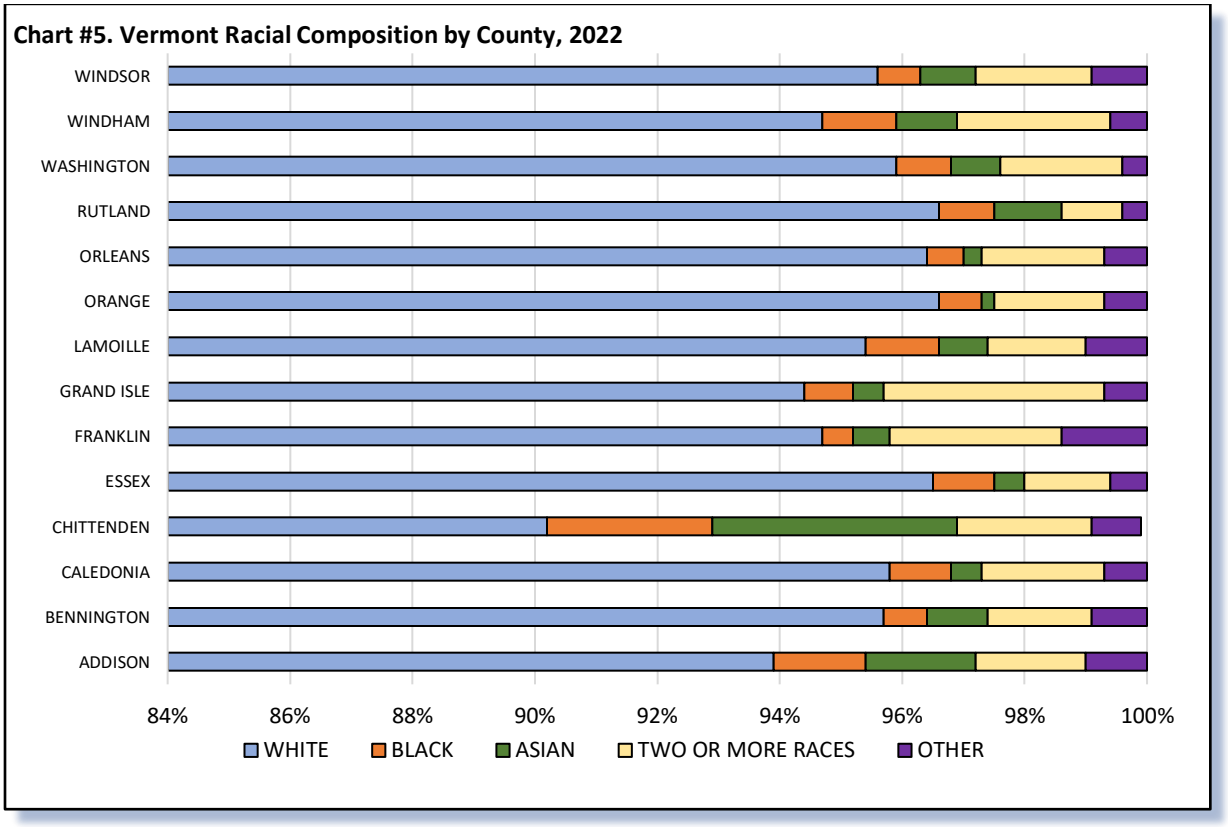
Chart #4: Vermont Population by Race, 2021



[21] U.S. Census, most current race estimates of July 2021.
[22] Ibid.
[23] VT State Health Assessment 2018. Vermont Department of Health. Accessed November 2022.
[24] American Immigration Council.

Vermont's racial make-up by county is displayed in the charts below, followed by the combined data table. Chittenden County has the highest rate and number of BIPOC residents, at 10% (16,265) of the county's population of 162,646 individuals. This is followed by Addison County and Grand Isle County, both recording 6% of their population as BIPOC. In the case of Grand Isle, it is important to note that it has the second to lowest population of all Vermont counties, and as discussed in relevant places throughout this Profile, small absolute values can render large swings in percentages. While Grand Isle has close to 500 individuals identifying as BIPOC, a county such as Windsor has 2,400 – but this is a smaller percentage of Windsor's overall higher population.[25]

Chart #5 here indicates the percentages of all races in each county, with shaded bars.

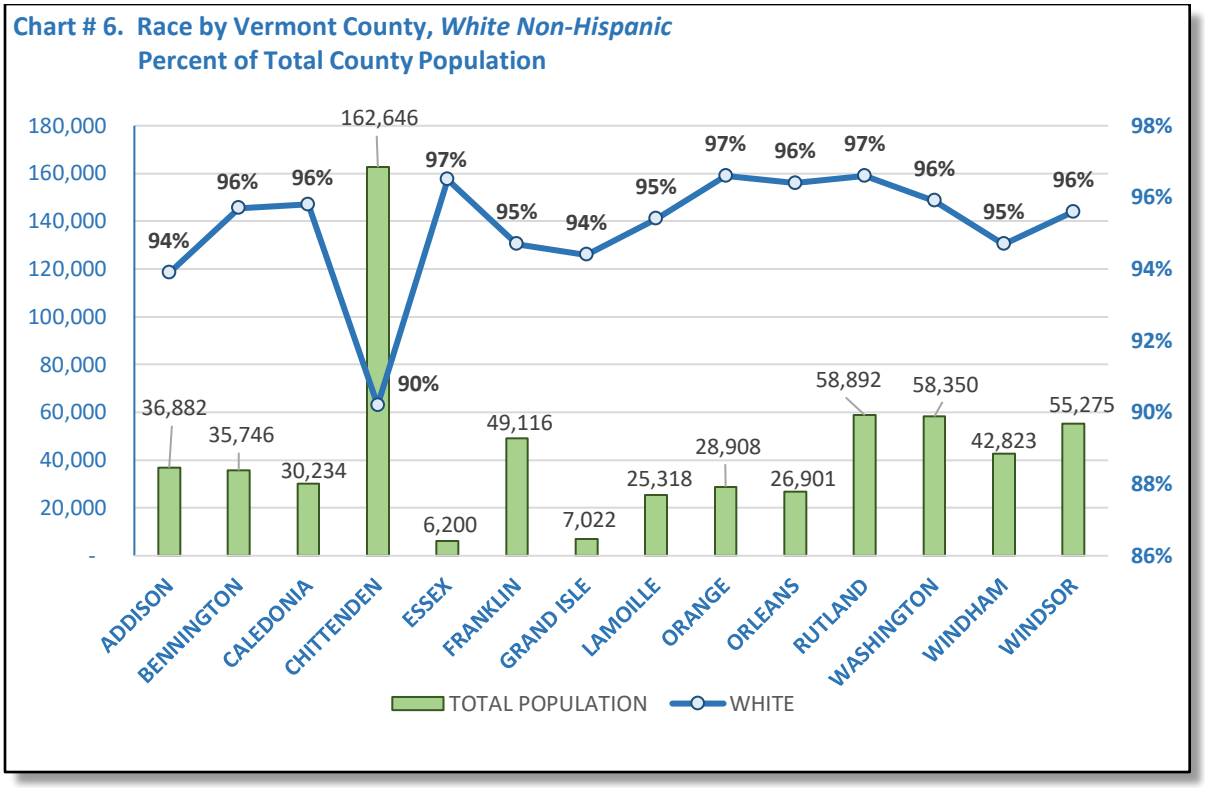


The five line-and-bar charts (**Charts #6 – #10**) that follow present a *bar* representing each individual county's total population by number [left Primary Y Axis], and a *line* representing the percent of that population represented by each race [right Secondary Y Axis]. The charts present, respectively, #6 *White Non-Hispanic*, #7 *Black*, #8 *Asian*, #9 *Two or More Races*, and #10 *Other Races*, which includes *American Indian/Alaskan Native*, *Native Hawaiian and other Pacific Islander*, and *Other Race*, all at below 1% across Vermont counties. For visual clarity, the data label of *total county population* is only called out on the representative bars in the first chart, as these values remain static across all five charts.

Given the small percentages, it is important in each chart to **note the scale** of the Secondary Y Axis. For instance, in **Chart #6**, Chittenden County is striking, and the chart visually conveys that this county is the

[25] "Most Diverse Counties in Vermont." Stacker.com. October 2021. https://stacker.com/vermont/most-diverse-counties-vermont. Accessed December 2023.

state's most diverse – an accurate conclusion. However, it is equally important to note that the percent of White residents is still 90% in Chittenden County. While this is a "lower" number for Vermont counties, it is still high. In **Chart 6** the Secondary Y Axis runs from **85% to 98%**, and in **Charts 7 – 10**, the scale remains **below 5%.**



While Chittenden has the largest population in the state by a sizeable margin, and therefore would perhaps be expected to be the county with the largest BIPOC population, one aspect of the increased BIPOC presence there is Vermont's participation in refugee resettlement. Since the 1980s, Vermont has resettled a total of approximately 8,000 refugees, almost all of them in Chittenden County (Bose, 2020). The largest groups of refugees in Vermont are from Bhutan, Bosnia, Vietnam, Myanmar, Somalia, Afghanistan, Burundi, Congo Brazzaville, Democratic Republic of Congo, Sudan, Kosovo, Iraq, and Syria (Bose, 2020).[26] Vermont ranks sixth in the nation for refugee arrivals per 100,000 state population, at 310. As with many Vermont statistics, Vermont ranks high on this list, as the state resettles a high number of refugees in comparison to its own small population.[27]

[26] "Refugee Resettlement in Small Cities." Migration Policy Institute. www.migrationpolicy.org/data/state-profiles/state/demographics/VT. Accessed December 2023.

[27] Immigration Research Initiative. www.immresearch.org/publications/refugee-resettlement-per-capita-which-states-do-the-most/. Accessed December 2023.

Chart # 7. Race by Vermont County, Percent *Black* of Total County Population

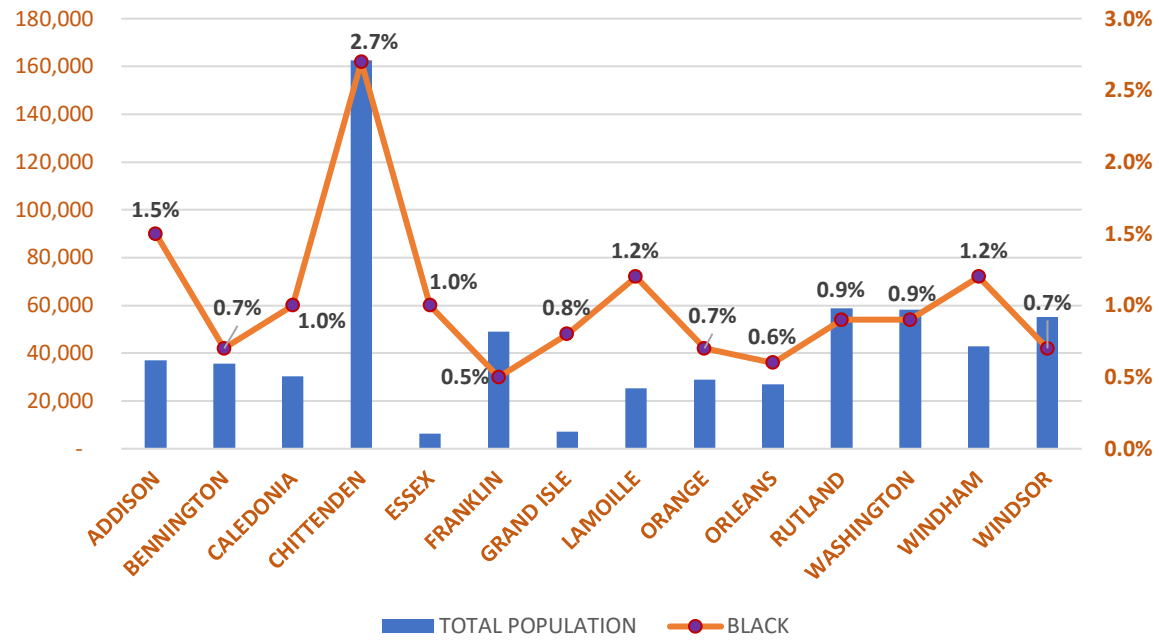


Chart #8. Race by Vermont County, *Asian* Percent of Total County Population

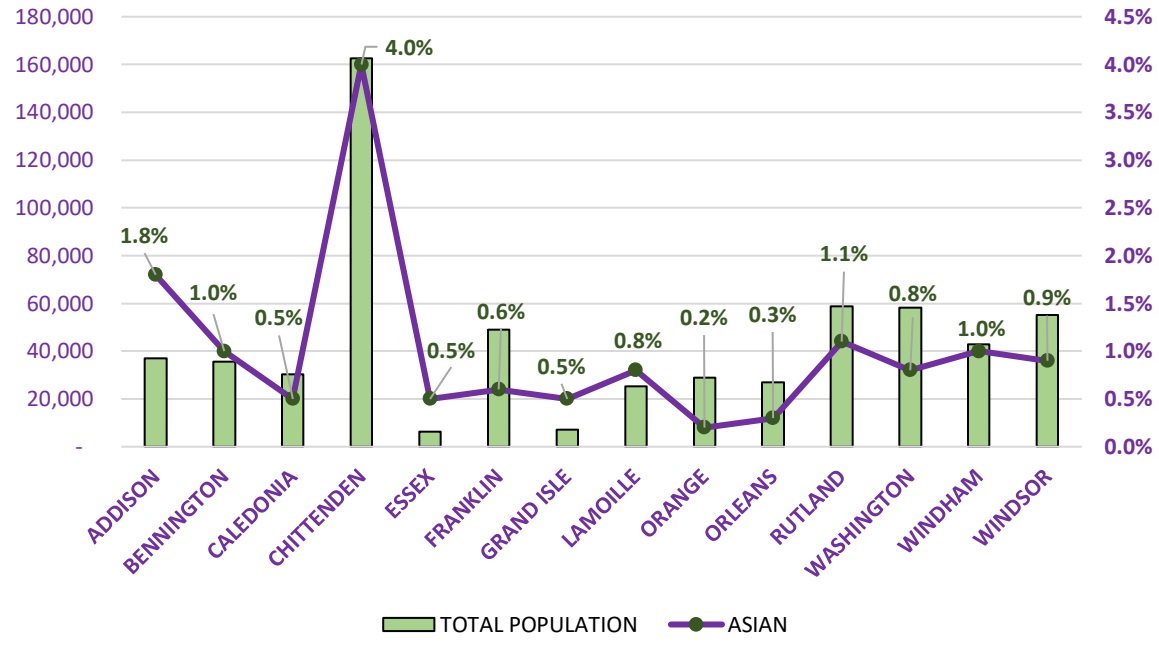


Chart #9. Race by Vermont County, *Two or More Races*
Percent of Total County Population

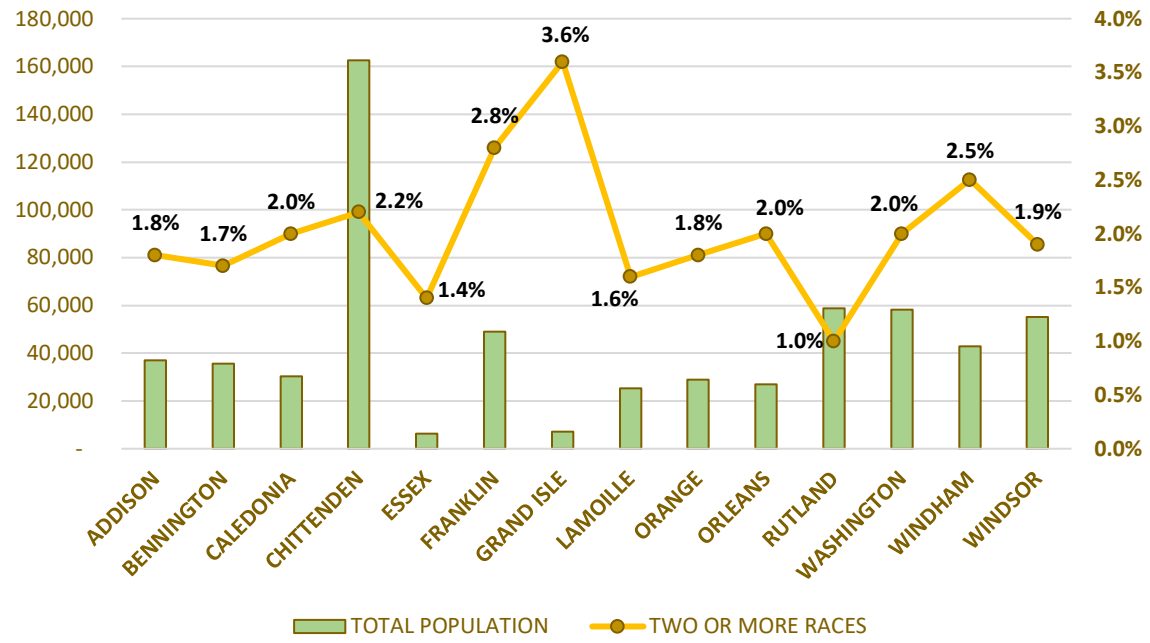


Chart #10. Race by Vermont County, *Other Races*
Percent of Total County Population

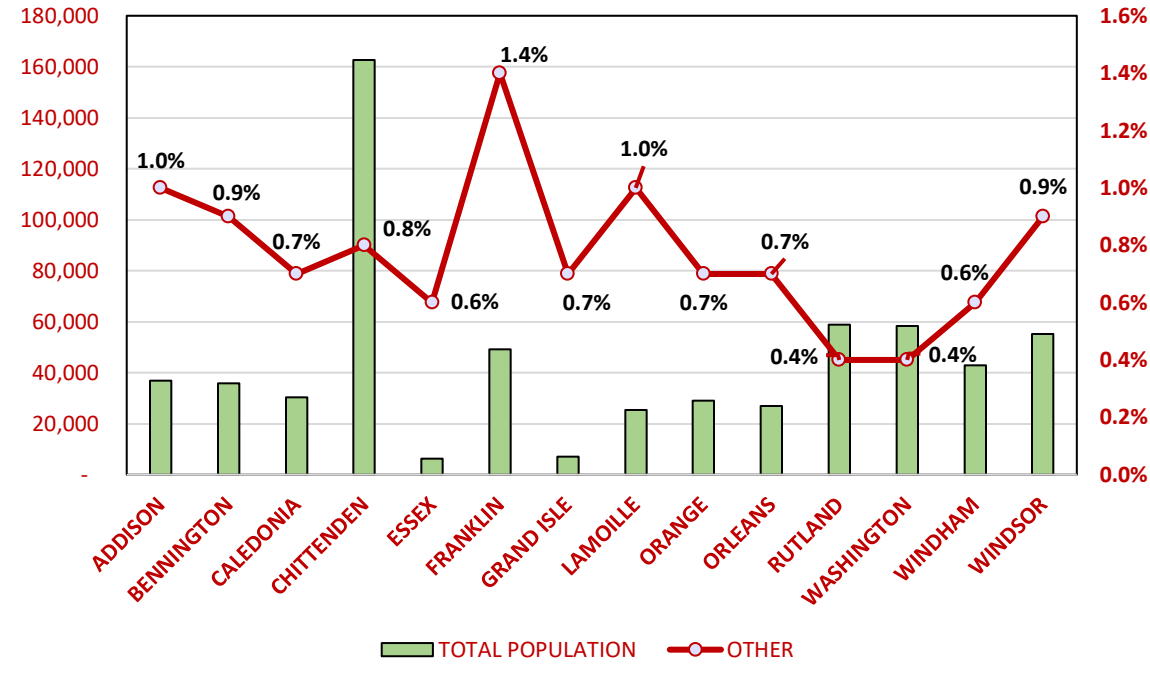


Table #2. Vermont Population, Race Data by County							
COUNTY	TOTAL POPULATION	WHITE	BLACK	ASIAN	TWO OR MORE RACES	OTHER*	TOTAL BIPOC
ADDISON	36,882	94%	2%	2%	2%	1%	6%
BENNINGTON	35,746	96%	1%	1%	2%	1%	4%
CALEDONIA	30,234	96%	1%	1%	2%	1%	4%
CHITTENDEN	162,646	90%	3%	4%	2%	1%	10%
ESSEX	6,200	97%	1%	1%	1%	1%	4%
FRANKLIN	49,116	95%	1%	1%	3%	1%	5%
GRAND ISLE	7,022	94%	1%	1%	4%	1%	6%
LAMOILLE	25,318	95%	1%	1%	2%	1%	5%
ORANGE	28,908	97%	1%	0%	2%	1%	3%
ORLEANS	26,901	96%	1%	0%	2%	1%	4%
RUTLAND	58,892	97%	1%	1%	1%	0%	3%
WASHINGTON	58,350	96%	1%	1%	2%	0%	4%
WINDHAM	42,823	95%	1%	1%	3%	1%	5%
WINDSOR	55,275	96%	1%	1%	2%	1%	4%

***OTHER:** In this table the OTHER category includes American Indian/Alaskan Native, Native Hawaiian and other Pacific Islander, and Other Race. Those categories represented fewer than 1% in all counties.*

Nativity

As of 2021, 4.36% of Vermont residents were born outside of the country, approximately 28,000 people. This is lower than the nationwide average of 13.6% foreign-born citizens. In 2021, the most common birthplace for foreign-born residents of Vermont was Canada, followed by China, Bosnia and Herzegovina. Also as of 2021, 5.5% of Vermont households reported speaking a non-English language at home as their primary shared language, also lower than the national average of 21.5%. The most common non-English languages spoken as primary language in households are French (including Cajun), Spanish, and Nepali, Marathi, or Other Indic Languages.[28]

Sexual Orientation and Gender Identity

For 2021, BRFSS records indicate Vermont's population is 99% cisgender and 1% transgender. Sexual orientation breakdown totaled 90% heterosexual, 6% bisexual, 2% gay or lesbian, and 2% other sexual orientation.

Education, Employment and Income

BRFSS 2021 data indicates that equally as many Vermonters have an education level of "high school or less" (36%), as have a level of "college degree or higher" (35%), with 28% reporting having had "some college." Overall, 2021 US Census data indicates 93.9% of VT adults aged 25 and older had at least a high school education and the percent of Vermonters with a Bachelor's degree or higher is 40.9%, incrementally rising over the last five years (from 36.8%).[29]

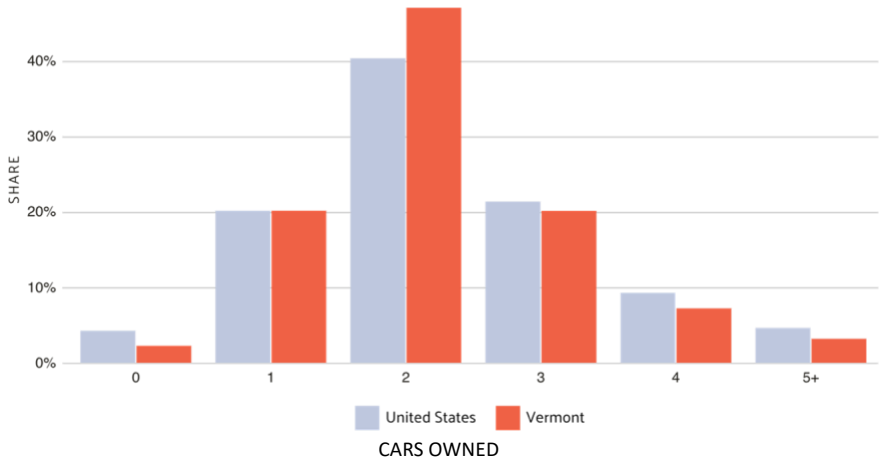
[28] Data from the Census Bureau ACS PUMS 5-Year Estimate.
[29] U.S. Census.

The 2021 data from both the BRFSS and the US Census report six in ten VT adults (62%) were employed, followed by 5% unemployed, 22% retired, and 5% currently unable to work.[30] After a peak of 14% during the height of the COVID pandemic, the state's unemployment rate dropped back to pre-pandemic levels for 2021, resting at 2.8%.

Over one in ten (13%) Vermont adults live in households earning less than $25,000/year. Vermont's rate of persons in poverty stands at 10.3%. After dropping during the pandemic, VT household median income rose to $76,079 for 2021. Income Tax Returns for the same year indicate 52% of VT residents filing a tax return had an Adjusted Gross Income of less than $50,000 per year.[31] While the 2020 BRFSS results reported that 9% of VT adults were unable to pay their mortgage, rent or utilities during that year, no similar data was provided in the 2021 BRFSS.[32]

The largest industries by revenue in Vermont are 1) Hospitals, 2) Life Insurance & Annuities and 3) Tourism, which generated, respectively, $3.2 billion, $3.0 billion and $3.0 billion in 2022. The top three sectors by total employment are Real Estate and Rental and Leasing, Healthcare and Social Assistance, and Manufacturing. Major sectors of employment in Vermont include Healthcare and Social Assistance, Educational Services and Retail Trade. [33] The Commissioner of Labor, in the October 2022 VT Economy Update, identified the most in-demand industries in VT as manufacturing, construction, healthcare, tourism, and hospitality, with job availability statewide in these professions.[34]

Chart #11. Car Ownership, Vermont and United States, by number of cars, 2021



Car ownership in Vermont averages two cars per household, at well over 40% of the population. Vermonters working outside the home commute on average 23 minutes to their place of work. In 2021, 72% of Vermonters *drove alone* to work, followed by 11.4% who *worked at home*, and 8.43% who *carpooled*.[35] Both the high percentage of dual car ownership and commuter rates demonstrate Vermont's lack of public transportation infrastructure and reliance on automobiles, a factor that creates barriers for vulnerable populations to accessing health and social services, among others.

[30] Behavioral Risk Factor Surveillance System, 2021.
[31] VT Income Tax Data: 2019 Vermont Personal Income Tax Returns – Counts. Accessed August 2023. https://tax.vermont.gov/sites/tax/files/documents/income_stats_2021_state.pdf
[32] BRFSS, 2021.
[33] Vermont – State Economic Profile. IBISWorld. https://www.ibisworld.com/united-states/economic-profiles/vermont. Accessed December 2023.
[34] "Vermont's unemployment rate increases 23%." PRESS RELEASE, October 21, 2022, Mathew Barewicz, E&LMI Director, VT Department of Labor. Accessed November 2022.
[35] Data from Census Bureau ACS 5-year Estimate.

Health

Viewed as a whole, the majority of VT adults report *Good to Excellent Physical Health* for the year ending 2021, with only 12%, or one in eight, reporting *Fair or Poor*. Disparities emerge with correlative factors, however. As shown in **Chart #12**, *Fair or Poor Health* is reported at higher rates by adults with lower education (20%), lower income (32%), and those with a disability (34%). Members of BIPOC populations also report higher rates of *Fair or Poor Health* (18%] than their White counterparts. Geographically, results are spread equally across the state, with only Bennington County reporting statistically higher-than-state-average *Fair or Poor Health* (16% vs 12%).

When health is broken out into **Physical Health** and **Mental Health**, similar discrepancies appear and other disparities arise, as demonstrated in the detail **Charts #13 – 16**, and the overview **Chart #17**. Note that Chart #17 and the data broken out from it in Charts #13 – 16 represent Vermonters reporting *Poor Health*, distinguished as *Physical Health* or *Mental Health*, whereas **Chart 12** shows those reporting *Fair or Poor Health* as an overall health measure, with no distinction between physical and mental.

While 10% of Vermonters overall identify *Poor Physical Health*, 16% identify *Poor Mental Health*. Differences in rates emerge in the same categories above – poor physical and mental health are reported at higher rates by individuals with less education and lower income.

Chart #12. Vermont Adults With Fair Or Poor Health, 2021

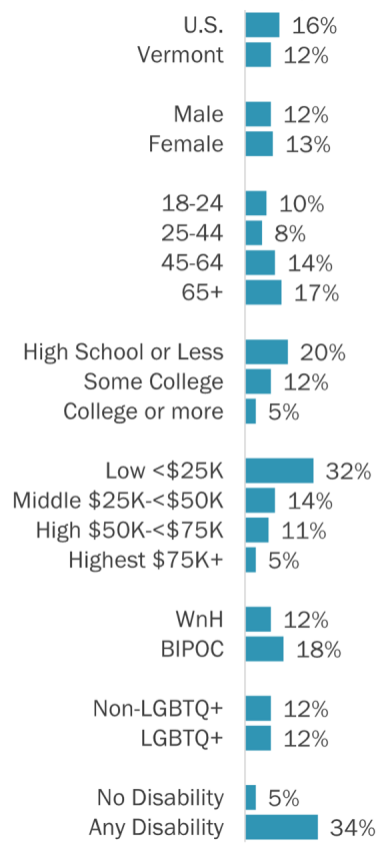


Chart #13. Vermonters Reporting Poor Mental Health, by Education Level, 2021

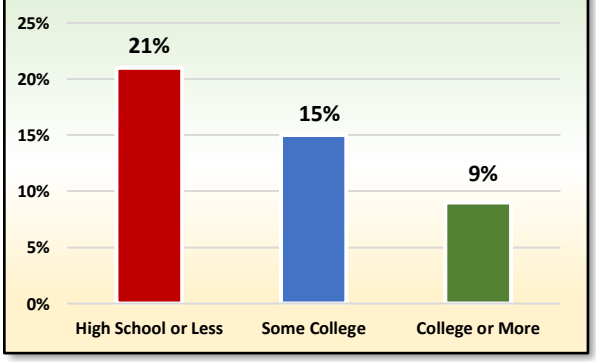
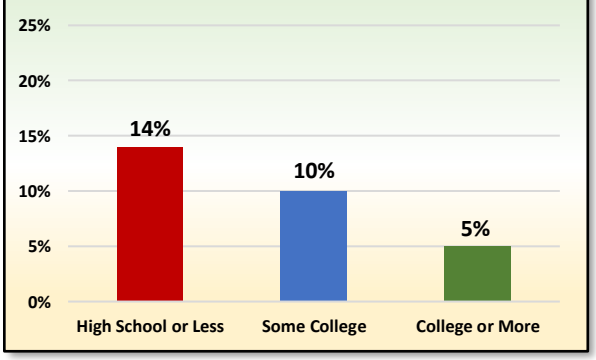
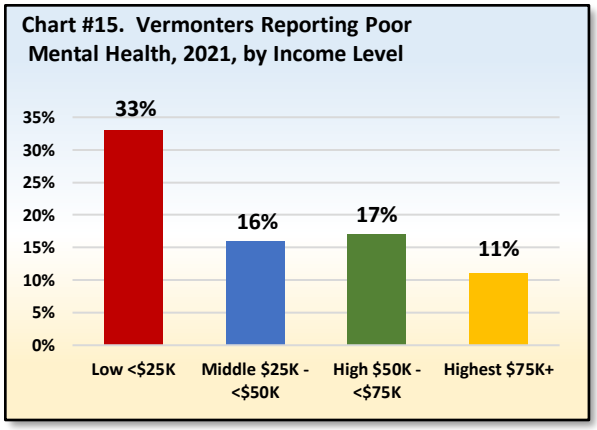
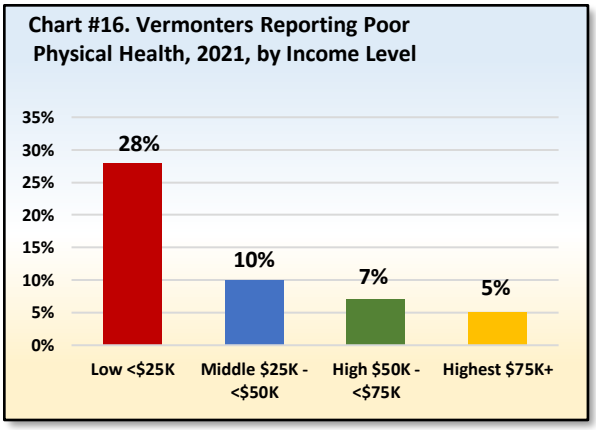


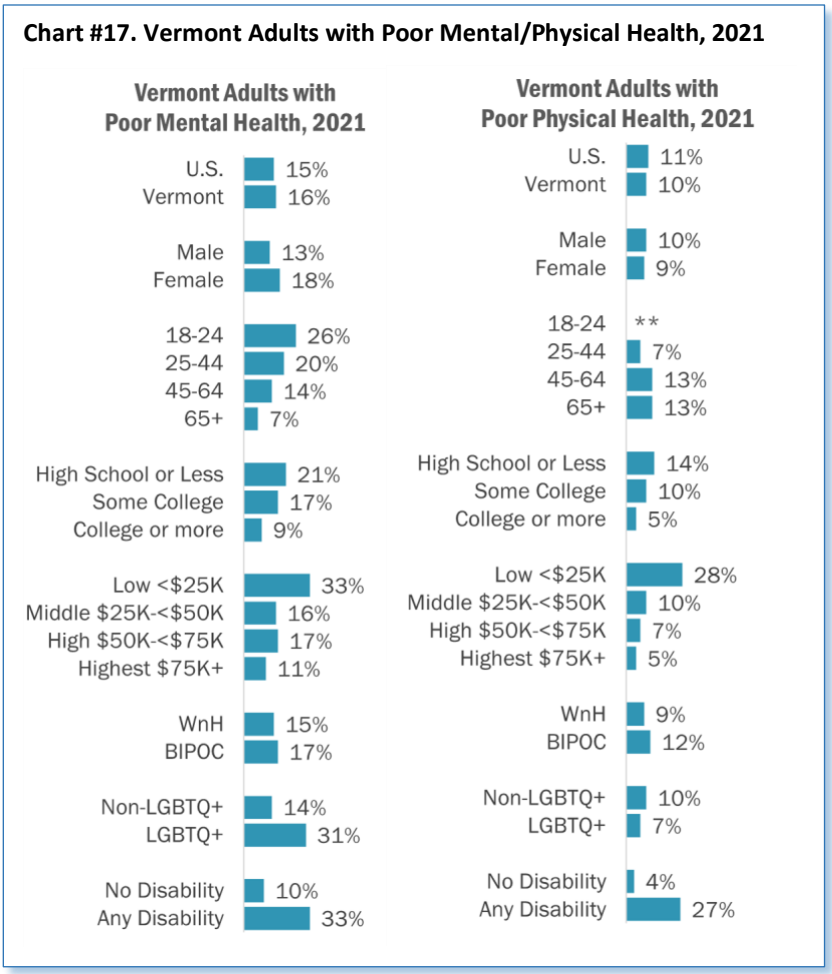
Chart #14. Vermonters Reporting Poor Physical Health, by Education Level 2021



The largest disparities are seen in health and income data. In comparison to the highest income bracket ($75,000+), low income Vermonters report *Poor Mental Health* at rates 22% higher (33% vs 11%), and *Poor Physical Health* at rates 23% higher (28% vs 5%).





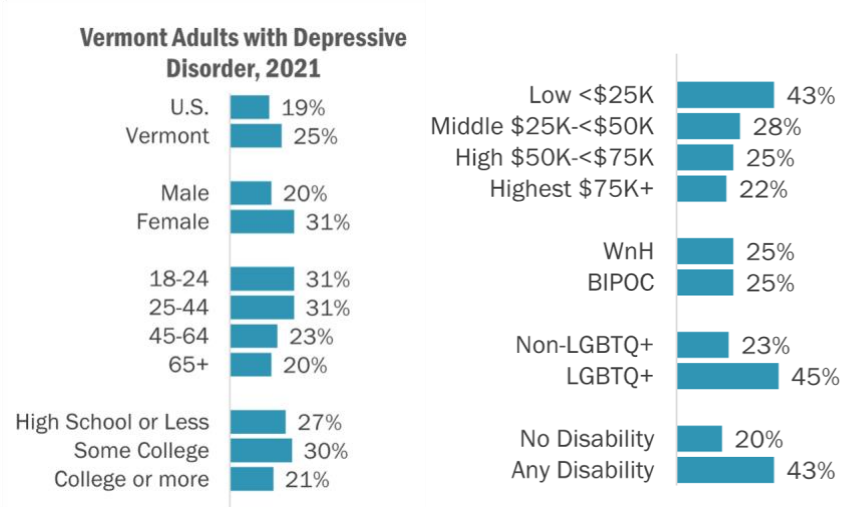


As **Chart #17** indicates, BIPOC report higher rates of both poor physical and mental health than White counterparts, but BRFSS categorizes the differences as statistically insignificant, at 3% and 2% higher, respectively. Sexual orientation/gender identity did present a statistically significant disparity, with 31% of LGBTQ+ Vermonters reporting *Poor Mental Health*, versus 14% non-LGBTQ. Physical health was reversed, with non-LGBTQ+ people reporting higher rates of *Poor Physical Health*, though at a statistically insignificant level of 3% (10% of non-LGBTQ+ versus 7% of LGBTQ+). This confirms the **Chart #12** data indicating Vermonters reporting overall *Fair or Poor Health* is equivalent between LGBTQ+ and non-LGBTQ+ populations (12% each).

Age was a common factor in mental health analysis. Younger age ranges reported higher rates of *Poor Mental Health*, with the percent decreasing in each age bracket. Adults 18 to 24 years of age were **four times more likely** to report *Poor Mental Health* (26%) versus Vermonters over 65 (7%). Adults aged 25 to 44 fared little better, with 20% reporting *Poor Mental Health*, along with 14% of adults 45 to 64 years.

By contrast, 7% of adults aged 25-44 years reported *Poor Physical Health*, versus 13% of both older age cohorts – adults aged 45-64 years and 65+ years. Adults reporting any disability reported poorer physical and mental health, with 27% reporting *Poor Physical Health* versus 4% of Vermont adults with no disability, and 33% reporting *Poor Mental Health*, versus 10% of Vermont adults with no disability.

Chart #18. Vermont Adults with Depressive Disorder, 2021



As one of the most common mental health disorders in the United States, Depressive Disorder is a condition that demonstrates health disparities. One quarter (25%) of Vermont adults report depressive disorder, above the national average of 19%. Vermont women are 11% more likely to experience depressive disorder (31% versus 20% of Vermont men), as are younger people (ages 18-24 and 25-44 both at 31% vs 23% for those aged 45-64, and 20% for those aged 65+).

Greater discrepancies appear among those with low income, with disabilities, and LGBTQ+ individuals. Vermonters in the lowest income bracket (<$25,000) report depression at twice the level of those in the highest bracket (<$75,000), 43% versus 22%. LGBTQ+ Vermonters also experience depressive disorders at twice the rate of non-LGBTQ+ residents, at 45% versus 23%. Those with disabilities are more than twice as likely to experience depressive disorder than those with no disability, 43% versus 20%.

*LGBTQ Vermonters are **twice as likely** to report poor mental health then their non-LGBTQ counterparts, and **twice as likely** to report Depressive Disorder.*

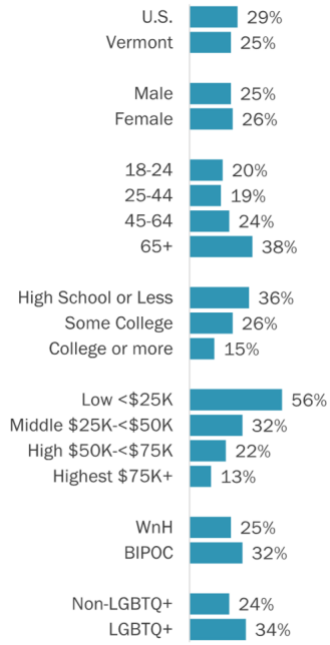
Disability

Vermont has a statistically lower rate of disability than the US as a whole, at 25% of the state's population, versus 29% of the national population. Older Vermonters are more likely to have a disability than younger. Vermonters with less education and lower income are more likely to have a disability and there are statistically significant *increases* in rates of disability with each *decreasing* income range and education level, with individuals with high school or less education experiencing more than double the rates of disability as those with a college degree.

Income-based disparities are larger, with those in the lowest income categories experiencing disability at four times the rate as those in the highest income category (56% versus 13%). These factors – disability and lower income – are often seen together, due to the difficulty many disabled individuals have with full-time employment, and consequent lower income, creating a cause-and-effect loop that can be difficult to parse.

BIPOC experience higher rates of disability than White Vermonters (32% to 25%). Just over one third (34%) of LGBTQ+ adults reporting a disability, vs one quarter (24%) of their heterosexual and cisgender counterparts.

Chart #19. Vermont Adults with a Disability, 2021



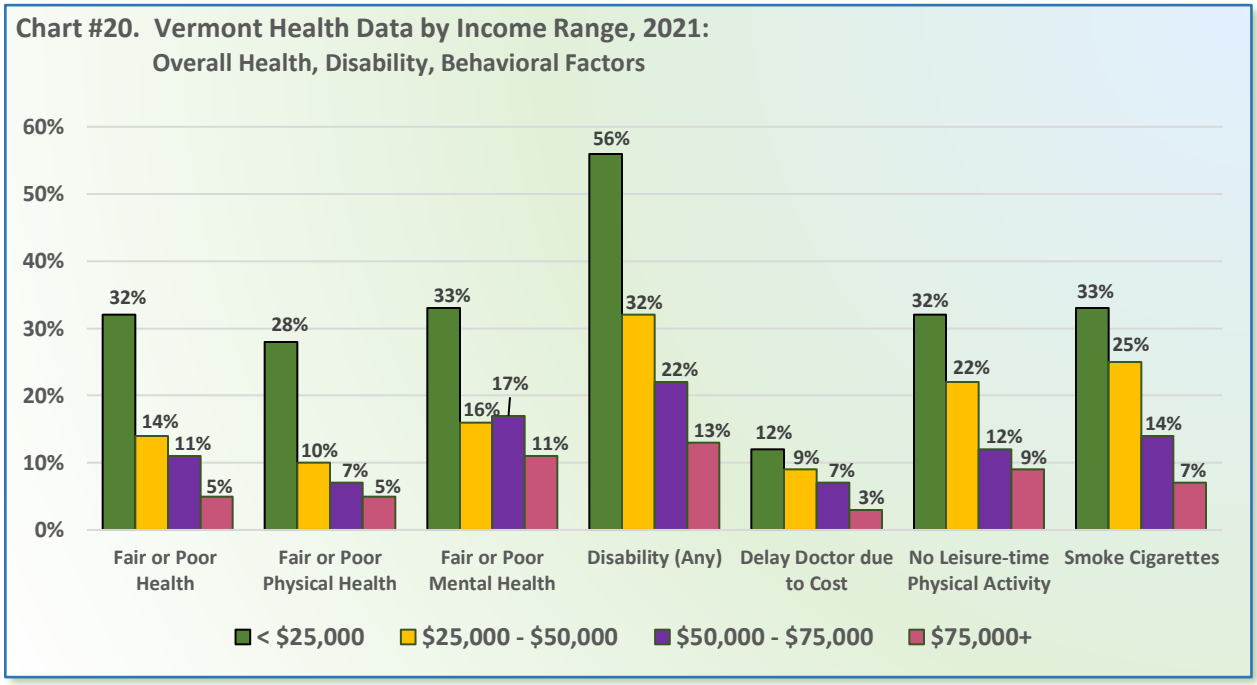
Vermont Social Determinants of Health

Economics: Income, Poverty & Employment

Income disparity is the most prominent negative social determinant of health in Vermont. While health plan coverage has improved with the Vermont Health Connect insurance marketplace, individuals at the lowest income levels suffer higher rates of poor physical and mental health, chronic conditions, and disability across the board. Despite gains in insurance coverage, large health disparities by income are still seen. [**Charts #20, #21, #22**]

Similar to the conflation of disability and lower income, the factors of cause and effect are difficult to separate on the face of the statistics – are people with lower incomes more likely to become ill, or do people who have more health difficulties have low incomes due to the costs of health care and limited ability to work? Social Determinants of Health research indicates both are at play, with rising health care costs, but that there are many social and cultural factors placing people living in poverty and at lower income levels at higher risk for a variety of illnesses and conditions, including those exacerbated by the stress poverty induces. The cycle of poverty affecting health and illness affecting income creates "a negative feedback loop sometimes referred to as the health-poverty trap."[36]

Chart #20. Vermont Health Data by Income Range, 2021: Overall Health, Disability, Behavioral Factors



[36] "Health, Income, & Poverty: Where We Are & What Could Help." *Health Affairs Health Policy Brief*. October 4, 2018.

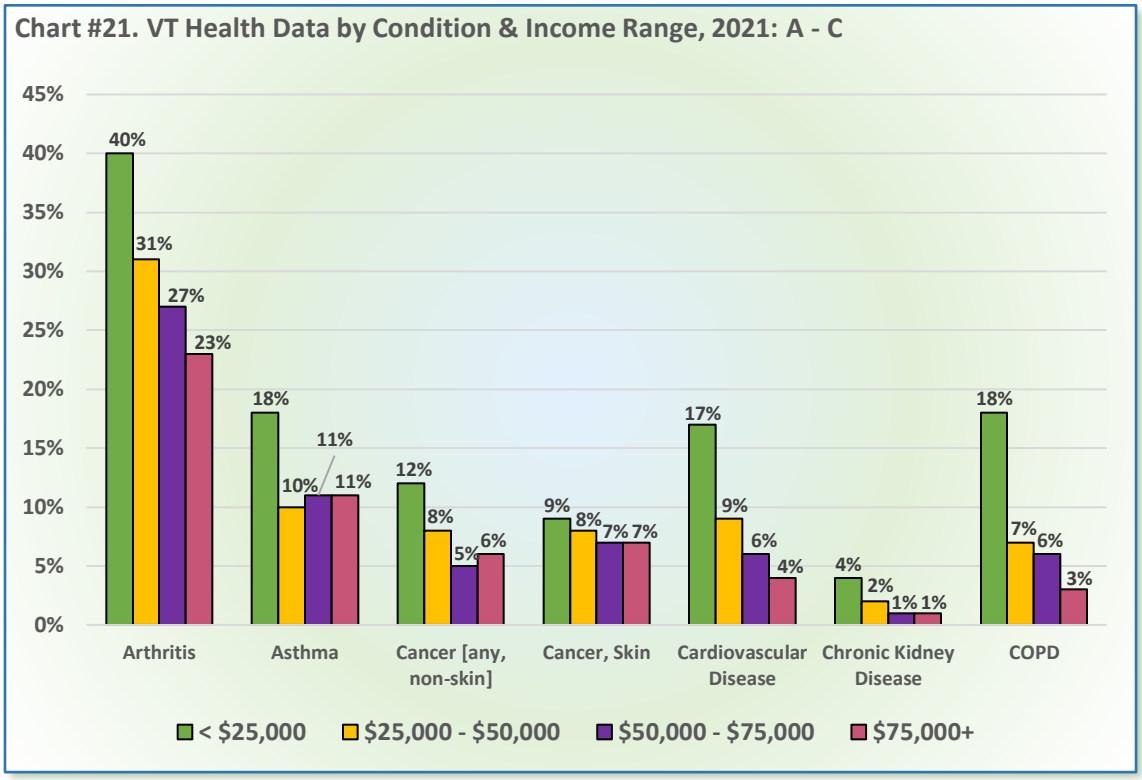


Chart #21. VT Health Data by Condition & Income Range, 2021: A - C
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
40%
31%
27%
23%
18%
10%
11%
11%
12%
8%
5%
6%
9%
8%
7%
7%
17%
9%
6%
4%
4%
2%
1%
1%
18%
7%
6%
3%
Arthritis
Asthma
Cancer [any, non-skin]
Cancer, Skin
Cardiovascular Disease
Chronic Kidney Disease
COPD
< $25,000
$25,000 - $50,000
$50,000 - $75,000
$75,000+

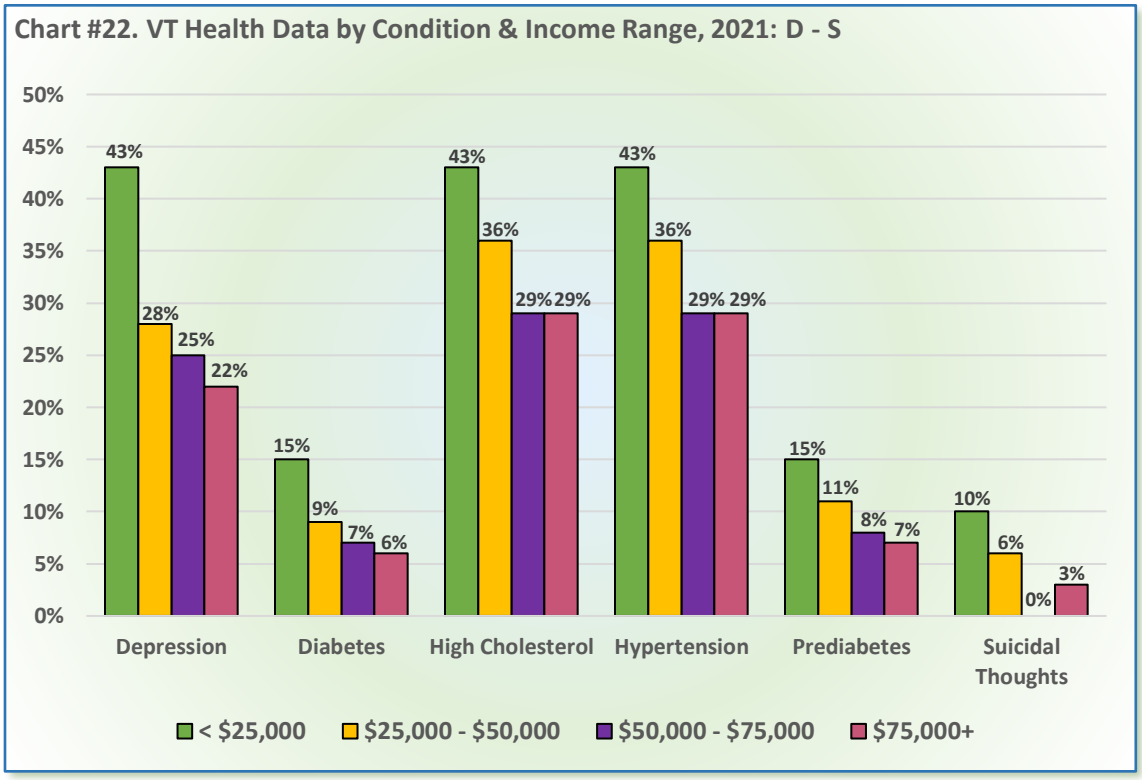
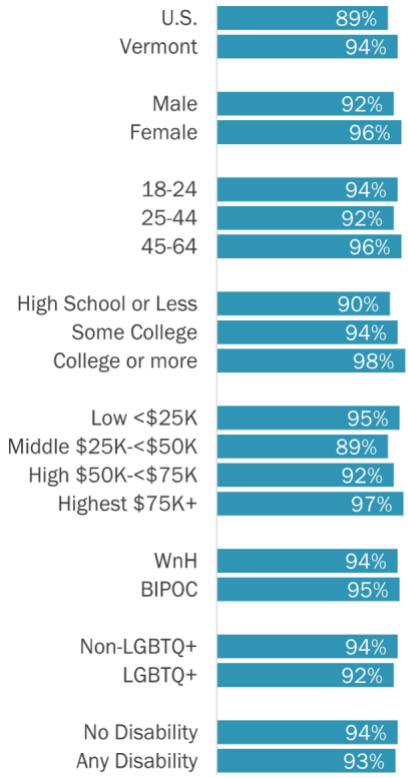


Chart #22. VT Health Data by Condition & Income Range, 2021: D - S
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
43%
28%
25%
22%
15%
9%
7%
6%
43%
36%
29%
29%
43%
36%
29%
29%
15%
11%
8%
7%
10%
6%
0%
3%
Depression
Diabetes
High Cholesterol
Hypertension
Prediabetes
Suicidal Thoughts
< $25,000
$25,000 - $50,000
$50,000 - $75,000
$75,000+

Other economic factors in Vermont would be expected to have a positive impact on health, such as a low unemployment rate. However, a higher-than-average cost of living and a longstanding affordable housing crisis both increase the negative impact of the Vermont economy on individual health for low income households.

Chart #23. Vermont Adults 18-64 with Medical Health Plan 2021



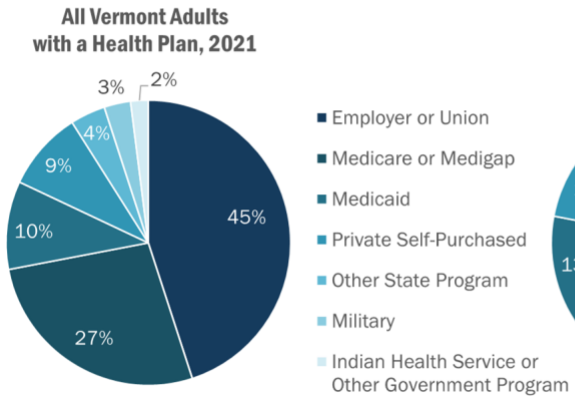
Health Care/Health Insurance

The majority of Vermonters report access to health care, with 94% reporting a medical health plan and 90% a Primary Care Provider. The latter is a 5% improvement, encouraging for regions with shortages of PCPs.

Male Vermonters are statistically less likely to have a PCP, but the proportion of adults reporting having a PCP increases with age. Those aged 18-44 were statistically less likely to have a PCP than those 45-64, and 65+. Adults with a college degree are more likely to have a PCP than those with a high school education or less, and adults in homes with the highest incomes are more likely to have a PCP than those with middle incomes. There were no statistically significant differences by race, ethnicity, sexual orientation, gender identity, or disability status.

Vermont's 94% health plan coverage is higher than the US average of 89%, and for 2021 has reached or risen above 90% for every demographic category except *middle income Vermonters making $25,000 to $50,000 per year*, which stands at 89%. This demonstrates gains in coverage among those with less education, BIPOC, and adults aged 25-44 years. The middle income category rose as well, from 85% to 89%. None of these gains rank as statistically significant but they do echo upward trends that have continued over the past five years. Just under three quarters (72%) of adult Vermonters report routine doctor's visits, similar to the national

Chart #24. All Vermont Adults with Health Plan vs Vermont Adults 18 – 64 with Health Plan, 2021



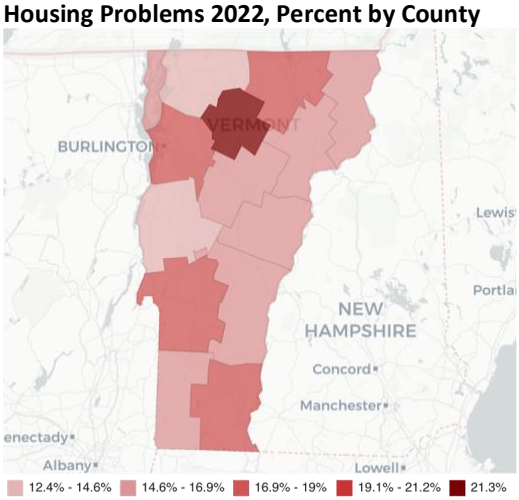
average of 74%.[37] Only 6% reported not visiting a doctor due to cost. More low income (12%), BIPOC (11%), and LGBTQ+ (13%) Vermonters did not see a doctor when needed due to expense. Through a variety of direct report, from the statewide HIV Needs Assessments and consistent reports by providers and CAG, a lack of LGBTQ+ competent providers in the state also has a negative impact on the LGBTQ+ population's willingness and/or ability to see a doctor when needed.

Of residents who purchase health insurance through VT's exchange, 90% qualified for subsidies in 2022.[38] With the American Rescue Plan extended through 2025, this high percentage is likely to continue. The state's two primary insurers – Blue Cross Blue Shield and MVP Healthcare – have both filed for increased rates in 2024 and Vermont regulators have released information indicating they will allow Vermont Health Connect plans for individuals and small groups to increase an average of **at least 11.4% and as much as 14%**, depending on the insurer and type of plan.[39] **Chart 24** indicates the source of Vermonters' health plans, with the majority of all adults, as well as for adults limited to those under 64, receiving their health plan through their employer or union. The first pie indicates all adults and demonstrates the pie slice for Medicare, at 27%. The second pie reflects only adults under 64 years.

Housing

Vermont has a documented high cost of living statewide, and has for many years. The *World Population Review* ranks it as the tenth most expensive state to live in the US overall, with costs 17% above national average.[40] Housing is a prime factor in cost of living and VT has the eighth-highest housing costs in the country, with a single-family home costing on average $299,998. Simultaneously, it has the lowest housing affordability in the US, with 15% of residents making a wage that could support purchasing a new home.[41] As of 2022, 16.8% of residents were living with severe housing problems, with darker counties in **Chart #25** indicating higher severity.[42] Owning a home in VT brings attendant high property taxes, with over 70% of Vermonters paying $3,000 or more per year, compared with just over 40% of homeowners nationwide.[43] **Chart #26** provides a visual of Vermont's property tax rates compared to the US.

Chart #25. Vermonters Living with Severe Housing Problems 2022, Percent by County



[37] Trust for America's Health. *The Impact of Chronic Underfunding on America's Public Health System: Trends, Risks, and Recommendations, 2022*.

[38] Jickling, Katie, "American Rescue Plan cuts health insurance costs for thousands of Vermonters." *VTDigger*. 4/6/2021. Accessed Nov 2022.
https://vtdigger.org/2021/04/06/american-rescue-plan-cuts-health-insurance-costs-for-thousands-of-Vermonters/
https://info.healthconnect.vermont.gov/sites/vhc/files/doc_library/OE%20article_8%20Things%20to%20know.pdf
https://www.healthinsurance.org/obamacare/beware-obamacares-subsidy-cliff/

[39] "Green Mountain Care Board reduces health insurance rate requests for small group and individual & family plans for 2023." Press Release, Green Mountain Care Board. August 4, 2022. https://vtdigger.org/2023/08/08/vermont-regulators-trim-health-insurance-premium-increases/#

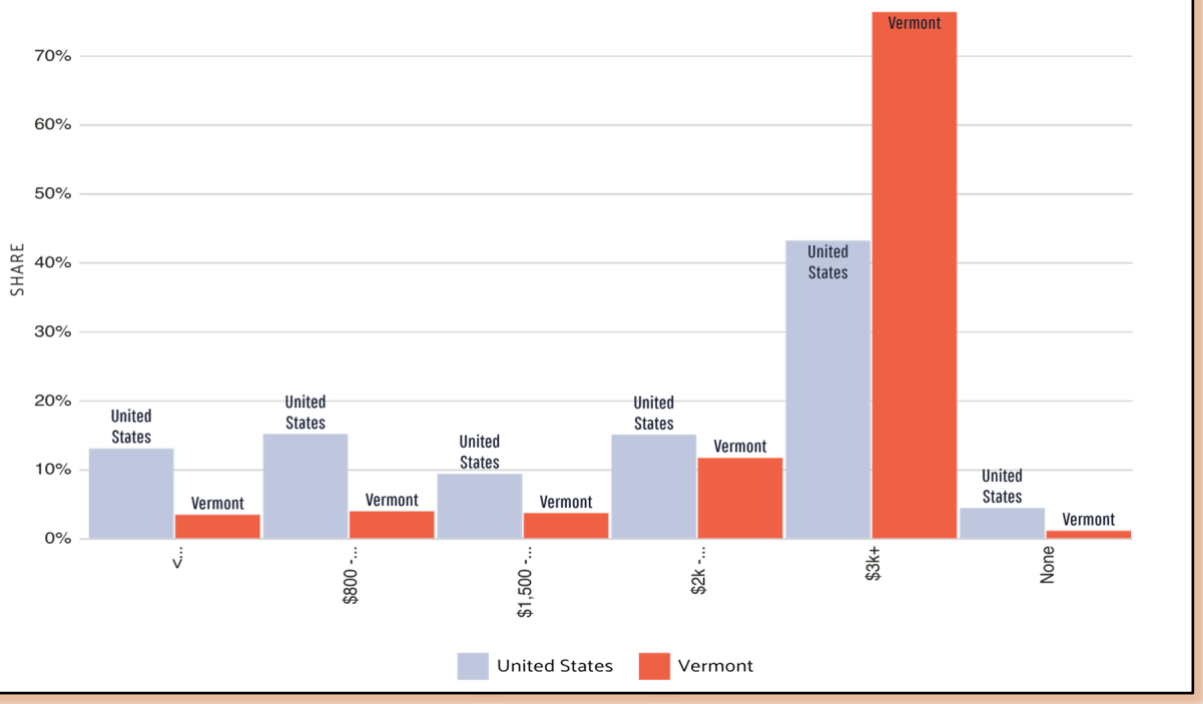
[40] "Most Expensive States to Live In." World Population Review. Accessed November 2022.
https://worldpopulationreview.com/state-rankings/most-expensive-states-to-live-in

[41] Ibid.

[42] US Census.

[43] US Census.

Chart #26. Property Tax Paid in Vermont and United States, US Dollars, 2021



VT's housing crisis has continued to worsen. Pre-pandemic Census estimates identified one quarter of VT renters spent at least half of their income on housing, and another quarter spent between 30% and 50% of income on rent. The *National Low Income Housing Coalition's* 2022 update of "Out Of Reach: The High Cost of Housing," reported VT's Fair Market Rent (FMR) for a two-bedroom apartment was $1,217 and factored that to afford this rent, while paying 30% of income on housing, a household would need to earn $4,055 monthly or $48,664 per year, translating to a 40-hour work week at $23.40 per hour.

This $23.40 per hour "housing wage" is the eighth most expensive housing wage for the rural US, and the 16th most expensive in the nation overall. VT's minimum wage is currently $12.55 per hour, and the average wage of Vermont renters is $16.47 per hour.[44,45] This housing wage varies by county in VT, with the five most expensive areas noted in **Table #3**. Following that, **Table #4** breaks down the current Fair Market Rate and the rent each described income level could afford.[46] Again, affordability here is based on housing cost absorbing no more than 30% of total income.

Table #3. Vermont's Most Expensive Rents Compared to Housing Wage, 2022

Most Expensive Rental Areas	Housing Wage Required
Burlington-South Burlington MSA* (Located in Chittenden County)	$ 28.85
Washington County	$ 22.00
Addison County	$ 21.48
Windham County	$ 20.94
Lamoille County	$ 20.40

**MSA = Metropolitan Statistical Area; HUD Metro Fair Market Rate Area*

VT follows a trajectory playing out nationwide coming out of the COVID-19

[44] *Out of Reach 2022: the High Cost of Housing*. National Low Income Housing Coalition, 2022. https://nlihc.org/oor
[45] Ibid.
[46] Ibid.

pandemic. Between 2014 and 2018, the number of housing units nationwide renting for under $600 dropped around half a million units per year, while units renting for higher than $1,000/month increased by just under 5 million.[47] This came about on top of VT's existing affordable housing crisis that has been growing for decades.[48]

In a November 2022 news series on the housing crisis, the Director of Burlington's Community & Economic Development Office quoted from a City of Burlington annual report that summarizes the present situation accurately. "Rampant real estate speculation is contributing to gentrification and attendant displacement, destabilization of neighborhoods, and the loss of affordable housing." That report was published in 1986.[49]

Prior to the COVID-19 pandemic, home prices were rising, up 5.8% between 2018 and 2019.[50] Overall VT home prices increased 19% during the pandemic, rising demand driving prices. Homes sold for asking price or above, after fewer than 30 days on the market and often immediately upon appearing on market, to affluent out-of-state buyers moving from urban centers to VT. COVID-19 fear drove people out of high infection areas temporarily or permanently, and VT was appealing with its' lower rates of

Table #4. Fair Market Rate vs Affordability in Vermont Housing, 2022

Fair Market Rate Rent

***Fair Market Rate* Rent (FMR):** Monthly rent an apartment or home is likely to receive in a given town or county. FMR is often estimated based on *how much renters are able and willing to pay* and *what other landlords in the area are charging for similar properties*.

Vermont: Statewide and Selected Counties	1 BR APT FMR	2 BR APT FMR
VT Statewide Average - 2022	$820	$1,100
Burlington Average - November 2022	$1,600	$2,400
Montpelier Average - November 2022	$1,100	$1,500
Brattleboro Average - November 2022	$1,250	$1,550
Rutland Average - November 2022	$1,100	$1,500

Vermont Rent Affordability Comparison

Affordable? What VT residents can afford per month, based on the identified income level and maintaining a housing expense of ***30% of income***.

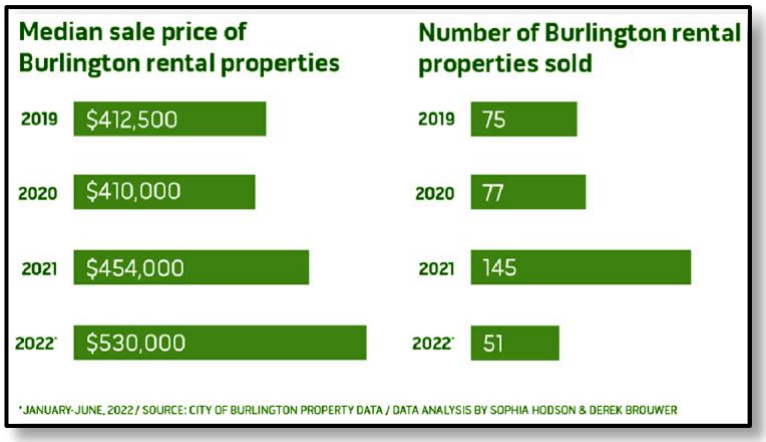
Individual Income Level	Affordable
VT official statewide median income - $63,477	$2,304
The > 50% of VT workers earning < $50,000 annual gross *(calculated at $45,000)*	$1,125
Full-time job at VT Mean Renter Wage of $16.47/hr = $34,250 annual gross	$856
Full-time job paying VT minimum wage of $13.18/hr = $27,400 annual gross	$685
VT Supplemental Security Income recipient	$268

[47] *America's Rental Housing 2020*. Joint Center for Housing Studies of Harvard University. 2020. https://www.jchs.harvard.edu/sites/default/files/Harvard_JCHS_Americas_Rental_Housing_2020.pdf
[48] Lamdin, Courtney, "Locked Out: Vermont's Housing Crisis." *Seven Days Vermont*. November 30 2022.
[49] Ibid. Brian Pine, as quoted.
[50] Abrami, Alex. "Low inventory drives high demand in VT's real estate market during coronavirus pandemic." *Burlington Free Press*. May 28, 2020.

COVID-19 infection compared to other areas.[51,52] As the pandemic continued, more people worked from home, further afield from employers' locations. Nationwide industry began to accept this as part of the new normal.

Resort area towns (Stowe, Dover) saw fast, large jumps in home price growth, likely linked to second-home purchases, but similar trends spread statewide to areas outside the traditional second-home towns. Some counties saw home prices leap 35%. During the summer of 2021, the for-sale home inventory was 47% lower than that same period in 2019.[53] This housing market impacted renters, and housing as a social determinant of health. Rents move in tandem with the housing markets and continue to increase statewide. An already crunched rental market grew more so as the remote-work dynamic became more common. The ability to live further from work drove prices higher in areas that were previously more affordable, due to their distance from concentrated employment opportunities.

Chart #27. Burlington Rental Price and Sales Data, 2019 – 2022



Investors added another layer, making up 2% of home buyers in VT in 2016, but rising to 17% in 2021, the largest relative increase of any state in the nation.[54] VT homes purchased as investments, either existing apartment buildings or homes bought with intention to convert to rental units, were obtained at some of the highest of the pandemic selling prices. Higher purchase price translated into an increase in cost passed forward to tenants, new or existing.[55] Renters are at risk of displacement when new owners don't renew standing leases, or implement rent increases a current tenant cannot meet.

In 2022, VT had the lowest rental vacancy in the country during the first quarter, 2.5% – less than half the national average. Chittenden County, VT's most populous county, was estimated in June 2022 as having a rental vacancy rate of 0.4%. Burlington, Chittenden County's and VT's largest city and only metropolitan statistical area, has seen rents increase over 30%.[56] The most current data indicates that in September 2022, as compared to September 2021:

- home prices in VT were up 15.7%
- number of homes sold was down 7.4% (882 homes sold vs 952)
- 43% of those homes sold above list price, down 1.4% from 2021, indicating high demand, multiple offers, and bidding wars continue.[57]

[51] Ibid.
[52] Watson, Mia. "Vermont home prices increase 19% during pandemic." Vermont Housing Finance Agency. February 16, 2022.
[53] Abrami. "Low Inventory."
[54] Thys, Fred. "Percentage of VT homes bought by investors surged in 2021." *VTDigger*, September 5 2022. https://vtdigger.org/2022/09/05/percentage-of-VT-homes-bought-by-investors-surged-in-2021/
[55] Brouwer, Derek. "Renters' Prison: How a Merciless Market of Unchecked Rent Hikes Traps VT Tenants." Locked Out Series, Part 6. *Seven Days*. July 6, 2022, Updated July 28, 2022.
[56] Ibid.
[57] Redfin. https://www.redfin.com/state/VT/housing-market. Accessed November 2022.

As of October 1, 2022, VT's federally funded Emergency Rental Assistance program began to be phased out, funding depleted. Part of the American Rescue Act, this funding provided an average rental payment of $960/month to approximately 12,600 households during the pandemic. The ERA stopped taking new applications for rent and other housing-related expenses at that time, and rental assistance for existing beneficiaries was reduced based on their incomes. Assistance for beneficiaries with incomes 31% to 80% of median income were reduced to 70% benefit on October 1, then 50% on November 1, ending on November 30. For lower income beneficiaries, their assistance was reduced to 70% on October 1, and was to remain at that level until the funding ran out.[58]

[58] "VT's pandemic rental aid program being phased out, September 1, 2022." Associated Press. https://apnews.com/article/covid-health-VT-be3d7f6e64b182e381f682b3dc729b9b

SECTION 2. Domain 2 - Epidemiology of HIV in Vermont

⇒ **CORE QUESTION 2.1:** What is the epidemiology of HIV and the distribution of HIV-related disparities or health inequities in Vermont?

Epidemiology of HIV in Vermont, Year End 12/31/2021

Infected-but-Unaware

Vermont does not traditionally report on **infected-but-unaware**. Nationwide calculations and formulas for undiagnosed infection become less accurate when applied to a small rural state. As noted by the CDC in previous documentation of infected-but-unaware calculations, "estimates for jurisdictions with < 60 diagnoses per year" are considered "numerically unstable."[59] VT diagnoses well under 60 infections per year; diagnosing above 20 cases is unusual.

However, the CDC does provide estimates of undiagnosed infections for Vermont. The following data is from CDC's *Estimated HIV Incidence and Prevalence in the United States, 2017–2021*, *Estimated HIV Prevalence among persons >13 by AREA OF RESIDENCE Tables*.[60]

Table #5. Vermont Infected-But-Unaware Estimates, 2017 – 2021

YEAR	Estimated living with diagnosed or undiagnosed HIV	Estimated living with diagnosed HIV	Estimated Infected-but-Unaware
2017	730	668	**62**
2018	740	686	**54**
2019	750	694	**56**
2020	750	697	**53**
2021	760	714	**46**

Prevalence & Incidence

As of December 31, 2021, 728 People Living With Diagnosed HIV Infection (PLWDHI) are known to be residing in Vermont. The state's case rate stands at 112.5 persons per 100,000 population based on July 2021 Census population estimates (Vermont total population calculated at 645,972).[61] This represents an increase of approximately 5 people per 100,000 over the five-year period 2017 – 2021. **Table #6** provides the range of epidemiological data including the demographics of gender, race, age, and transmission category.

Vermont surveillance diagnosed 11 people with HIV in 2021, for which no report could be identified in another jurisdiction. Eleven diagnoses in one year is consistent with recent trends, including 2020 and 2019 diagnoses of 12 and 10, respectively. This returns Vermont to the trend of low number of new infections the state experienced before a spike of 18 diagnoses in both 2017 and 2018.

However, data concerns due to COVID-19 limitations must be taken into consideration for both 2020 and 2021 data. Community-based testing through ASOs and CBOs was unavailable from March of 2020 through April of 2022, due to a combination of state mandated closures and staff attrition.

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[59] Prevalence of Diagnosed and Undiagnosed HIV Infection — United States, 2008–2012. *Morbidity and Mortality Weekly Report*. June 26, 2015. 64(24);657-662.

[60] Estimated HIV Incidence and Prevalence in the United States, 2017–2021: Tables. *HIV Surveillance Report*. 2021, Volume 34. Centers for Disease Control.

[61] Census.gov QuickFacts. Accessed 3.17.2023. www.census.gov/quickfacts/fact/table/VT,US/PST045222

Table #6. Vermont Epidemiological Data Table, 12/31/2021			
CATEGORY	**# PLWDHI**	**% TOTAL PLWDHI** [728]	
TOTAL	**728**	**100%**	
GENDER			
MALE	590	81%	
FEMALE	129	18%	
TRANSGENDER	9	1%	
RACE			
PEOPLE OF COLOR	185	25%	
WHITE	543	75%	
AGE			
13 to 24 Years	19	3%	
25 to 34 Years	57	8%	
35 to 44 Years	105	14%	
45 to 54 Years	175	24%	
55 to 64 Years	232	32%	
65+ Years	140	19%	
TRANSMISSION CATEGORY			
Male: 590 PLWDHI	**# PLWDHI**	**% Total PLWDHI** [728]	**% Male PLWDHI** [590]
Male-to-male sexual contact	389	53%	66%
Injection drug use (IDU)	36	5%	6%
Male-to-male sexual contact/IDU	46	6%	8%
High Risk Heterosexual Contact	22	3%	4%
Other/No Identified Risk	97	13%	16%
Female: 129 PLWDHI	**# PLWDHI**	**% Total PLWDHI** [728]	**% Female PLWDHI** [129]
Injection drug use (IDU)	29	4%	22%
Heterosexual contact	40	5%	31%
Other/No Identified Risk	60	8%	47%
Transgender: 9 PLWDHI	**# PLWDHI**	**% Total PLWDHI** [728]	**% Trans* PLWDHI** [9]
All Transmission Categories	9	1%	100%

While the Vermont Syringe Services Programs (SSPs) statewide were exempted from the governor's closure orders due to the necessary public health nature of their work, the HIV and hepatitis C testing ordinarily available through the SSPs was curtailed due to proximity concerns when conducting tests. Delivery of syringe services was altered to allow for social distancing, but conducting tests was not possible. HIV testing remained available at hospitals, but many people were reluctant to go to hospital and clinic facilities during the peak of COVID-19 infections, and were in fact discouraged from going to provider offices.

Of the eleven new diagnoses of the 2021 calendar year, the majority were Male and White, Non-Hispanic. Due to VT's small population, demographic data on a number as small as eleven individuals

cannot be released at a granular level.[62] Even without granular data, however, the majority findings of VT's HIV epidemic can be seen to continue the historical trend of most affected populations – White Non-Hispanic Males who identify as Men who have Sex with Men. MSM Sexual Contact remains the most common transmission category, at over half (53%) of total HIV cases, and over two thirds (66%) of HIV cases among men.[63] With the exception of the "No Identified Risk" category, the next most common transmission category is Injection Drug Use, followed by Heterosexual Contact.

The profile's next four sections analyze the state epidemiology data according to these parameters:

1. **All Vermont PLWDHI, Year End 12/31/2021**
2. **Vermont New HIV Diagnoses, 12 Month Period Ending 12/31/2021**
3. **All Vermont PLWDHI, 5-Year Trend Analysis, 2017 – 2021**
4. **Vermont New HIV Diagnoses, 5-Year Trend Analysis, 2017 – 2021**

For each designated time frame and period, the areas of **Gender**, **Age**, **Race**, **Transmission** and **Location/Residence** are analyzed and as much detail as possible is noted in charts and data tables. Following those four summaries are additional data on **Clusters and Outbreaks**, **Comorbidities,** and **Deaths**.

1. ALL VERMONT PLWDHI, YEAR END 12/31/2021

The following data reflects the 728 PLWDHI residing in Vermont as of December 31, 2021.

All VT PLWDHI 12/31/2021: Gender

VDH HIV surveillance data indicates 81% of Vermont's PLWDHI are male (590 cases), and 18% (129 cases) are female, with 1% reported as transgender. This data can be partially expanded upon by the *RWHAP Annual Client Level Data Report 2021*, the data for which is gathered for all clients served by RWHAP Parts A, B, C, and D during calendar years 2017 through 2021. In this data, 513 clients served are identified as male, 105 as female, and 13 are identified as transgender, 6 transmale and 7 transfemale.[64]

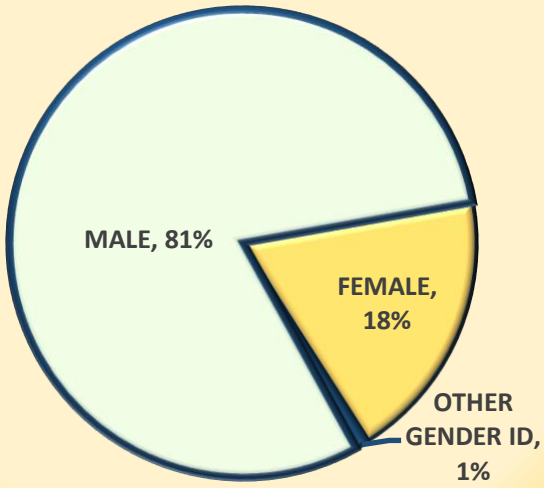
The discrepancy between the total numbers served is due to the counting of RWHAP client-level data based on *provider location* rather than *client location*, with "clients receiving services in multiple states… not included in state-specific totals."[65] While HRSA states "these clients make up less than 2% of the total RWHAP population" nationwide, Vermont's size, rural nature, and number and location of medical centers is likely to increase the percentage of Vermont clients who receive services out of state, to above the national average. Vermont's close proximity to the Dartmouth Hitchcock Medical Center (DHMC) based in Lebanon, NH, presents a high-quality treatment option within insurance provider's approved network, and for residents of southern Vermont, Boston, MA, is the same travel time/distance as Burlington, VT. Additional providers in Albany, NY, may be closer to those living in the southwestern portion of Vermont.

Of particular interest, however, is that the RWHAP data indicates a higher number of transgender clients than general surveillance. Reasons for this may include, among others, transgender clients potentially leaving the state between 2017 and 2020, and therefore not present in 2021 surveillance, and the

[62] State Policy Data Restrictions: "Vermont Department of Health's HIV, STD, Viral Hepatitis Program has a policy that due to small population size, potentially identifying cross-tabulations shall not include entries with ≤5 cases. Data tables have cell suppression and only summarized statements can be made."
[63] 2021 HIV Annual Report. January 2023. Vermont Department of Health.
[64] Ryan White HIV/AIDS Program Annual Client-Level Data Report 2021. Published December 2022. Health Resources and Services Administration. ryanwhite.hrsa.gov/data/reports.
[65] Ibid.

nuances of gender reporting. Some reporting systems do not have an option for *transmale* versus *transfemale*, offering only *male, female* or *transgender*. Under these circumstances, a portion of the transgender community is more inclined to report as *male* or *female*, rather than simply *transgender*. If the further specification of *transmale/transfemale* is offered, transgender patients may opt for that level of specificity, but transgender numbers are likely to remain underreported, based on the legitimate choice of *male* or *female* by a transgender individual who has transitioned. No individual is required to disclose birth sex, and only two states in the nation do *not* allow amended birth certificates. This topic is raised in this profile to increase the awareness that the trans population is present at a growing number among Vermont's HIV epidemic.

Chart #28. All Vermont PLWDHI 12/31/2021: Gender, by Percent; *n = 728*



All VT PLWDHI 12/31/2021: Age

The average age of PLWDHI living in Vermont is 61 years. The majority of VT PLWDHI, **66%**, are **over age 50**, and **51%** are **over age 55**. By contrast, 45% of current VT PLWDHI were diagnosed between ages 20 and 35, and 62% were diagnosed before age 40. This emphasizes Vermont's ongoing concentration of PLWDHI in the **50+ age range**, a trend noted nationally as well in the Ryan White HIV/AIDS Program Annual Client-Level Data Report 2021.[66]

Table #7. All PLWDHI as of 12/31/21: Current Age by Number & Percent

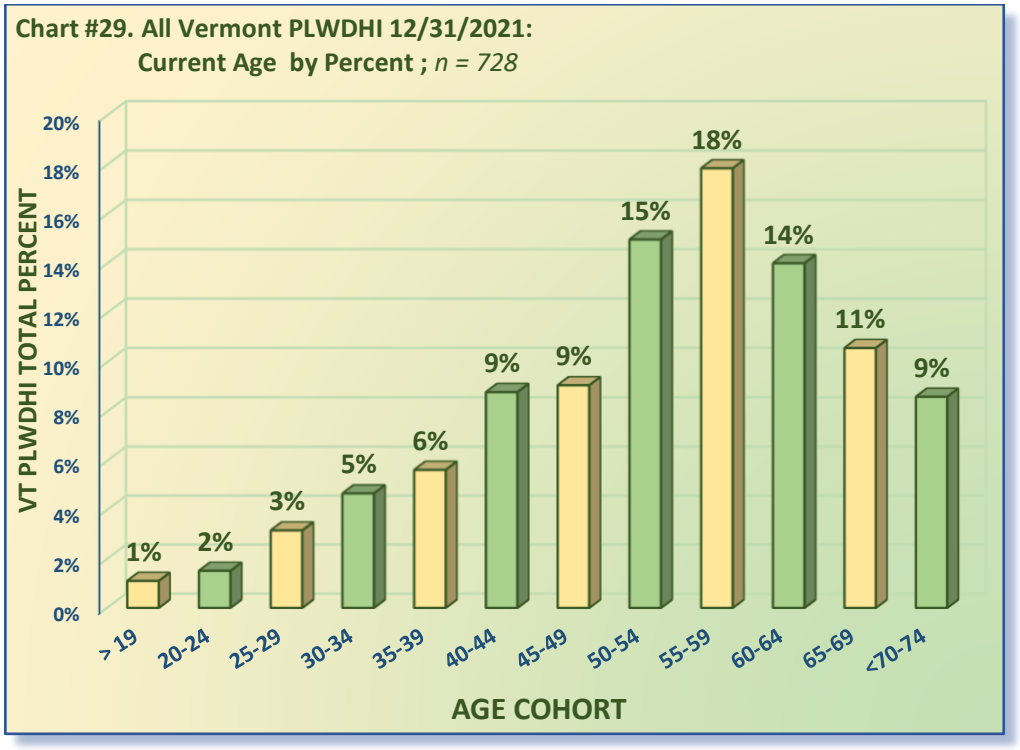
CURRENT AGE	NUMBER	PERCENT
< 19	8	1%
20-24	11	2%
25-29	23	3%
30-34	34	5%
35-39	41	6%
40-44	64	9%
45-49	66	9%
50-54	109	15%
55-59	130	18%
60-64	102	14%
65-69	77	11%
> 70	63	9%
TOTAL	**728**	**100%**

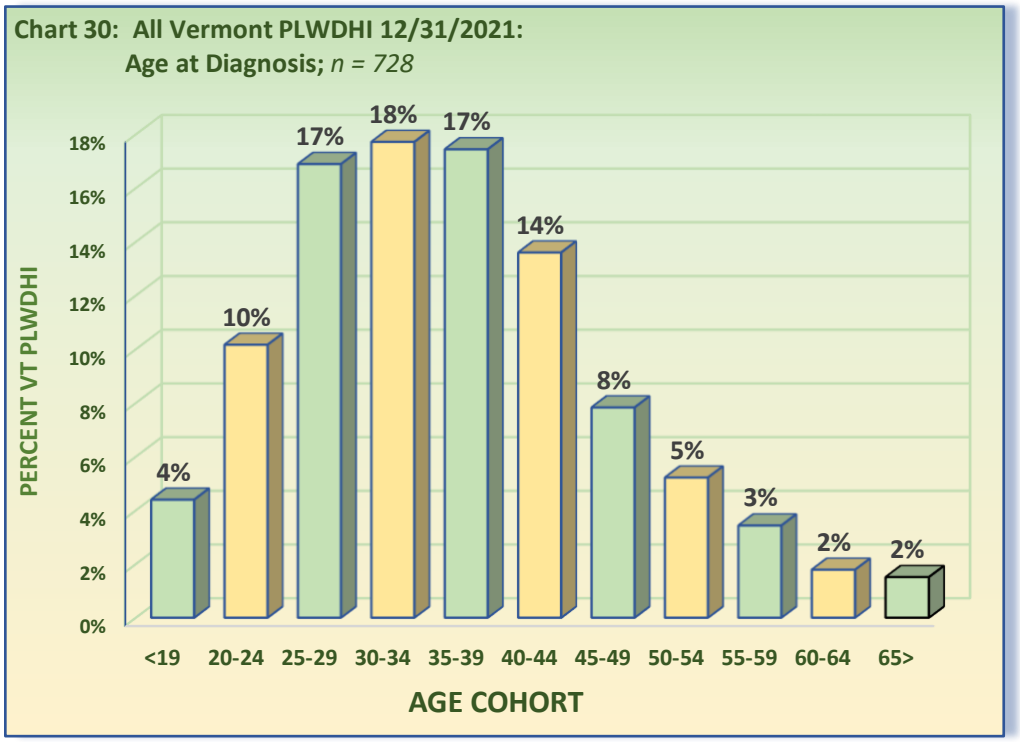
Table #8. All PLWDHI 12/31/21: Age at Diagnosis by Number & Percent

AGE AT DIAGNOSIS	NUMBER	PERCENT
<19	32	4%
20-24	74	10%
25-29	123	17%
30-34	129	18%
35-39	127	17%
40-44	99	14%
45-49	57	8%
50-54	38	5%
55-59	25	3%
60-64	13	2%
65>	11	2%
TOTAL	**728**	**100%**

[66] Ryan White HIV/AIDS Program Annual Client-Level Data Report 2021. Published December 2022. Health Resources and Services Administration. ryanwhite.hrsa.gov/data/reports.

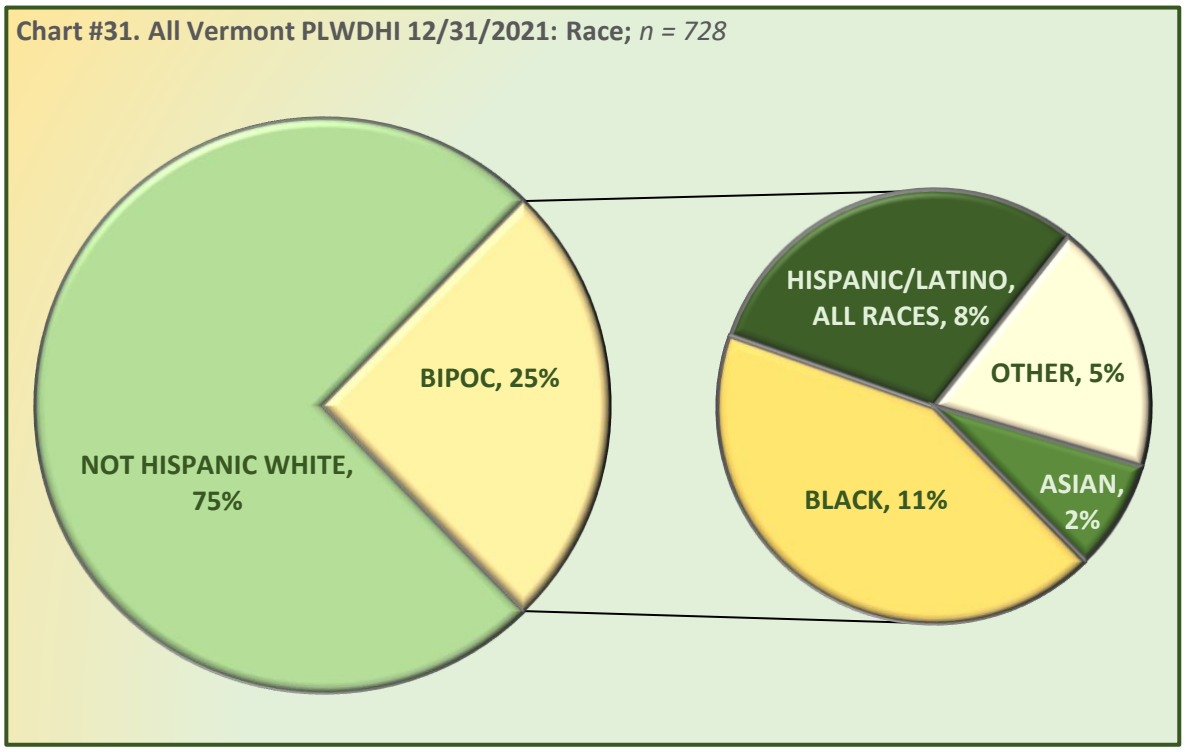
This demonstrates this population is remaining healthier and living longer. At the same time, the rising number of PLWDHI over age 50 represents a rise in those most likely to experience increased service utilization, lower income, and co-occurring conditions with additional medications.





All VT PLWDHI 12/31/2021: Race

As has historically been the case, the majority of PLWDHI in Vermont select White, Non-Hispanic as their race, 75% as of the close of 2021. Of the 25% that represent People of Color, the majority are Black/African American, followed by Hispanic/Latino of all Races, Other, and Asian. The Other category here represents individuals identifying in categories that totaled fewer than 2% of the total, including multiracial, Native American Alaskan Native, Native Hawaiian Pacific Islander, and Unknown.



The table below provides the number and percent of PLWDHI in Vermont by race, and displays the percentage of representation of each race in Vermont's population as a whole. The fourth column provides the HIV case rate for each race, and indicates that despite the small population representation, Black/African American Vermonters have a case rate **nine times higher** than White Vermonters. This stands as one of the largest health disparities within Vermont's epidemic.

Table #9. All PLWDHI vs Vermont Population, 12/31/2021, by Race, with Case Rate

RACE	NUMBER VT PLWDHI	PERCENT VT PLWDHI	PERCENT OF TOTAL VERMONT POPULATION	CASE RATE PER 100,000 POPULATION
White	543	75%	92.2%	**91** / 100,000
Black	79	11%	1.5%	**814** / 100,000
Hispanic/Latino	56	8%	2.2%	**393** / 100,000
Other*	35	5%	4.6%	**118** / 100,000
Asian	15	2%	2.0%	**116** / 100,000
TOTAL	**728**	**100%**	**	--

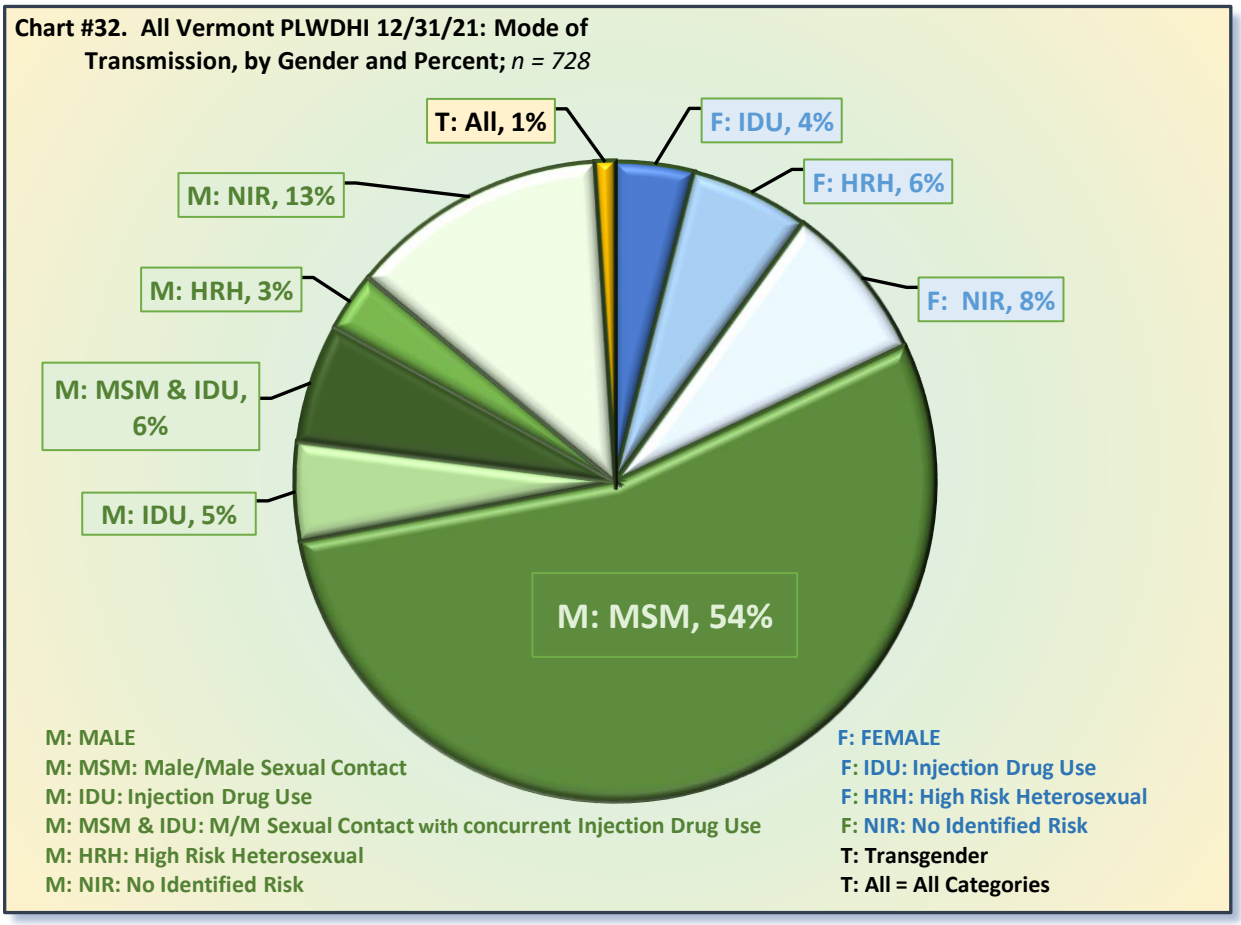
**Other Races includes multiracial, Native American Alaskan Native, Native Hawaiian Pacific Islander, and Unknown, all at below 2.0%.*
***Percent Total exceeds 100% due to differences in categorizing ethnicity of PLWDHI population, versus ethnicity of total Vermont population. State total maps the 2.2% of Vermonters identifying as Hispanic or Latino onto that same populations race identification. PLWDHI calculation counts Hispanic/Latino as a separate category regardless of race.*

Hispanic and Latino Vermonters experience a case rate four times higher than White Vermonters, and both Asian Vermonters and Other Races also experience an increased case rate in comparison to their White counterparts, 1.27 and 1.29, respectively.

All VT PLWDHI 12/31/2021: Transmission

The majority of Vermont's HIV cases fall in the transmission category of male to male sexual contact (MSM). This has been the majority category over many years, and now stands at 54% of all VT PLWDHI as of 12/31/21. The percent of transmission within the wider community of men who have sex with men (MSM) rises to almost two-thirds (60%) of all cases, when the *male-to-male sexual contact* transmission category is added to that of *male-to-male sexual contact with concurrent IDU* (6%). The total rate of transmission via IDU alone is 9%, which moves to 15% when the IDU transmission alone is combined with the *MSM with concurrent IDU* category (6%). Transmission via heterosexual contact is 9% total across genders, and makes up 4% of all male cases. The *Other* transmission category was 21% for 2021, consistent with the past 5 years, and includes individuals with no *identified* and no *reported* risk. **Chart #32** provides the transmission data for all PLWDHI combined as of year ending 12/31/2021, and **Charts #33** and **#34** break out Male and Female data.

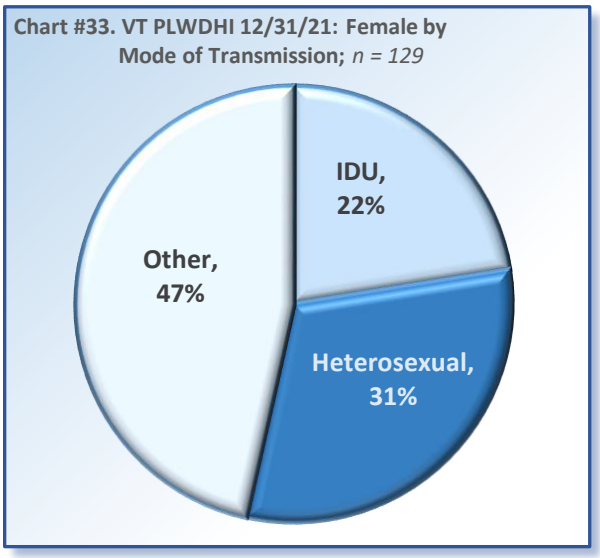
Chart #32. All Vermont PLWDHI 12/31/21: Mode of Transmission, by Gender and Percent; *n = 728*



When the women who make up 18% of Vermont's total PLWDHI population are broken out and studied separately, 31% of female transmission is reported as *heterosexual contact*, 22% as *IDU*, and 47% as *Other/No Identified/No Reported Risk*. However, data from the RWHAP Annual Client Level Data Report

for 2021, again provides some additional illumination. Of 88 women in the Client Level Data, 65 are reported as heterosexual contact transmission.[67] The same client level data indicate that for VT's transgender population, sexual contact can be stated to be the common risk factor.[68]

The total of nine transgender individuals in the surveillance numbers presents a total too small to break out further, and the client level data for the 13 trans-identified population indicated sexual transmission for all clients.



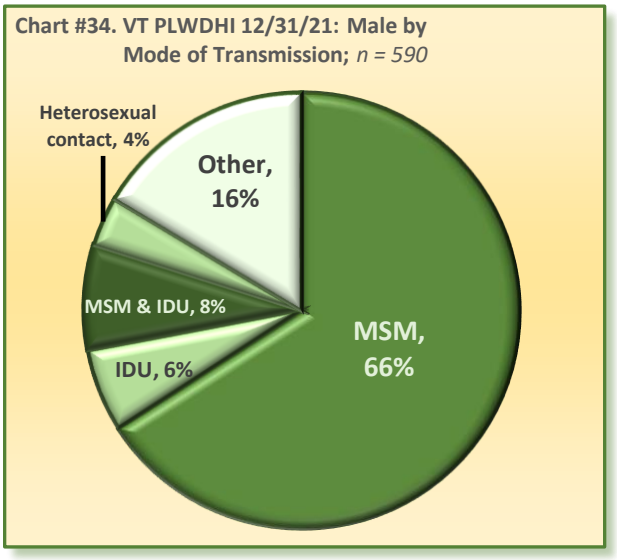


Table #10. All VT PLWDHI 12/31/21: Mode of Transmission, by Gender, Number and Percent

Mode of Transmission Category	Male PLWDHI Number	Male PLWDHI Percent
IDU	36	6%
Male to Male Sexual Contact	389	66%
MSM & IDU	46	8%
Heterosexual Contact	22	4%
Other/Not Identified	97	16%
TOTAL	**590**	**100%**

Mode of Transmission Category	Female PLWDHI Number	Female PLWDHI Percent
IDU	29	22%
Heterosexual Contact	40	31%
Other/Not Identified	60	47%
TOTAL	**129**	**100%**

All Mode of Transmission Categories	Trans* PLWDHI Number	Trans* PLWDHI Percent
TOTAL	**9**	**100%**

All VT PLWDHI 12/31/2021: Residence

Two-thirds of Vermont's current PLWDHI population (422, or 60%) resided in the state at the time of diagnosis. Regardless of location of diagnosis, just over half (397, or 54%) received a concurrent Stage 3 (AIDS) diagnosis at time of diagnosis, while 331 were diagnosed with HIV infection only.

[67] Ibid.
[68] Ibid.

County of residence data indicates that the large majority of PLWDHI in Vermont, approximately one third, live in Chittenden County, the most populous county in the state overall and VT's only Metropolitan Statistical Area. **Chart #35** demonstrates that no other county in the state has a similar concentration, with the second highest county being Windham, at 10% of the PLWDHI population.

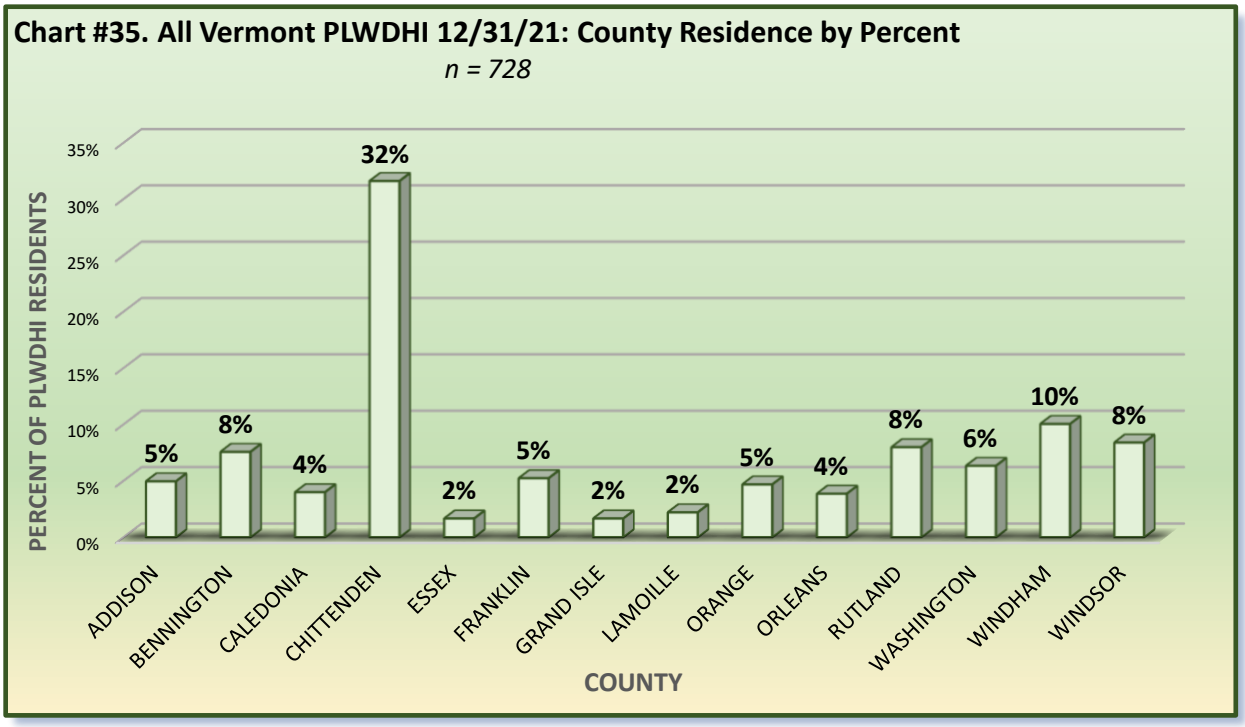


Chart #36 presents VT overall state population patterns and PLWDHI patterns, and indicates that PLWDHI populations follow state distribution closely, with some minor differences.

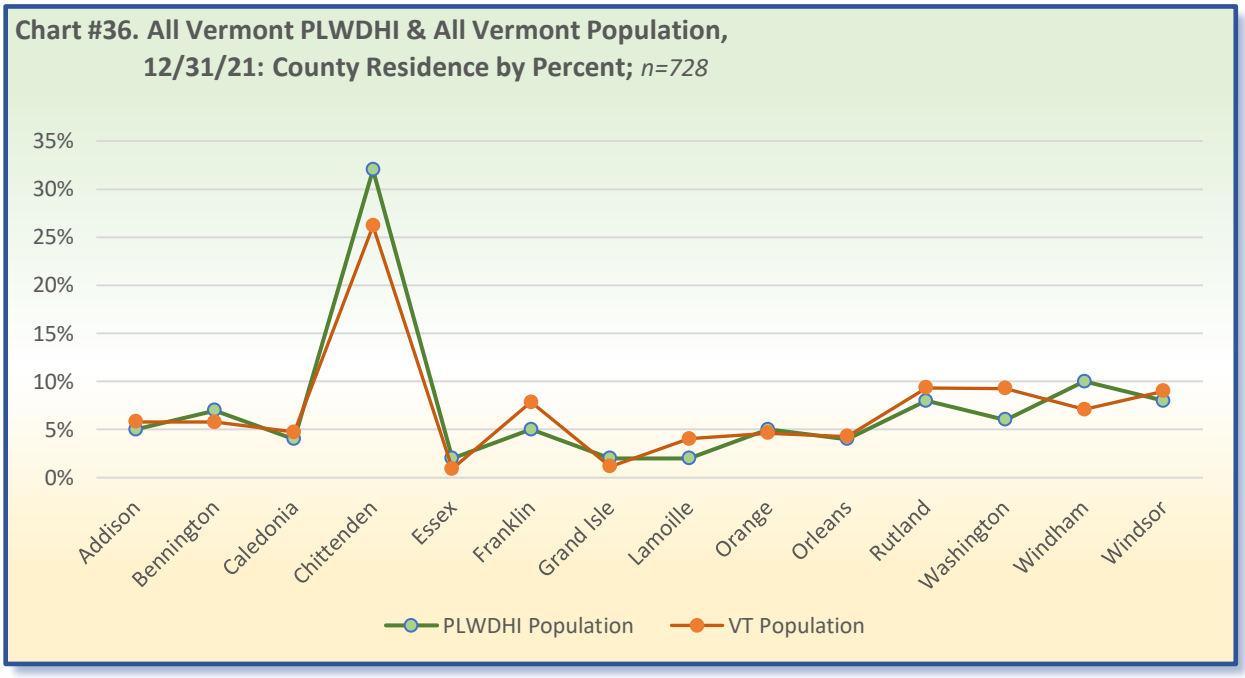


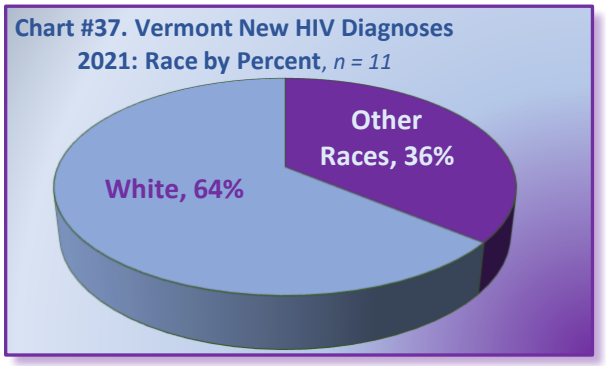
Table #11. All VT PLWDHI 12/31/21: County Residence, Number & Percent		
VT COUNTY	**NUMBER**	**PERCENT**
Addison	36	5%
Bennington	55	8%
Caledonia	29	4%
Chittenden	230	32%
Essex	12	2%
Franklin	38	5%
Grand Isle	12	2%
Lamoille	16	2%
Orange	34	5%
Orleans	28	4%
Rutland	58	8%
Washington	46	6%
Windham	73	10%
Windsor	61	8%
TOTAL	**728**	**100%**

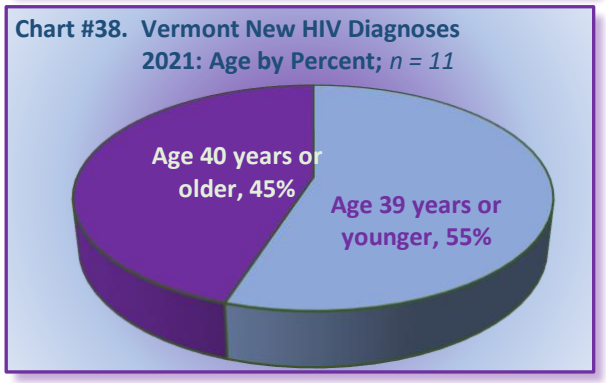
Table #12. All VT Population 12/31/21: County Residence, Number & Percent		
VT COUNTY	**NUMBER**	**PERCENT**
Addison	37,578	6%
Bennington	37,392	6%
Caledonia	30,579	5%
Chittenden	169,301	26%
Essex	5,994	1%
Franklin	50,731	8%
Grand Isle	7,489	1%
Lamoille	26,090	4%
Orange	29,846	5%
Orleans	27,666	4%
Rutland	60,366	9%
Washington	60,048	9%
Windham	45,842	7%
Windsor	58,142	9%
TOTAL	**647,064**	**100%**

2. VERMONT NEW HIV DIAGNOSES, 12 MONTH PERIOD ENDING 12/31/2021

Eleven new HIV infections were diagnosed in 2021, six of which were concurrent diagnoses with Stage 3 (AIDS). Given VT's small population and low incidence, with **11 individuals**, every demographic category has cell values of 5 or fewer. VDH's HIV, STD, Viral Hepatitis Program has a policy that due to small population size, potentially identifying cross-tabulations shall not include entries with ≤ 5 cases.

Data tables therefore have cell suppression, and only summarized statements can be made. In an effort to provide the most data, categories have been combined where possible. If a cell value of 5 or fewer could be combined with another cell value of 5 or fewer to allow for reporting, this was done. The following statements and charts demonstrate what summaries may be made.





VT New Diagnoses 12/31/2021: Gender

The majority of the 11 individuals diagnosed in 2021 were male-identified.

VT New Diagnoses 12/31/2021: Race

64% of the 11 diagnoses were white, 36% were Other Races. This echoes other data in this profile, indicating a high and growing presence of People of Color among VT's HIV epidemic, despite the low percentage BIPOC represent in VT's population overall.

VT New Diagnoses 12/31/2021: Age

45% of the 11 diagnoses were age 40 years or older, and 55% were age 39 years or younger.

VT New Diagnoses 12/31/2021: Transmission

Details cannot be presented on transmission categories, due to data suppression rules preventing release of potentially identifying information.

VT New Diagnoses 12/31/2021: Residence

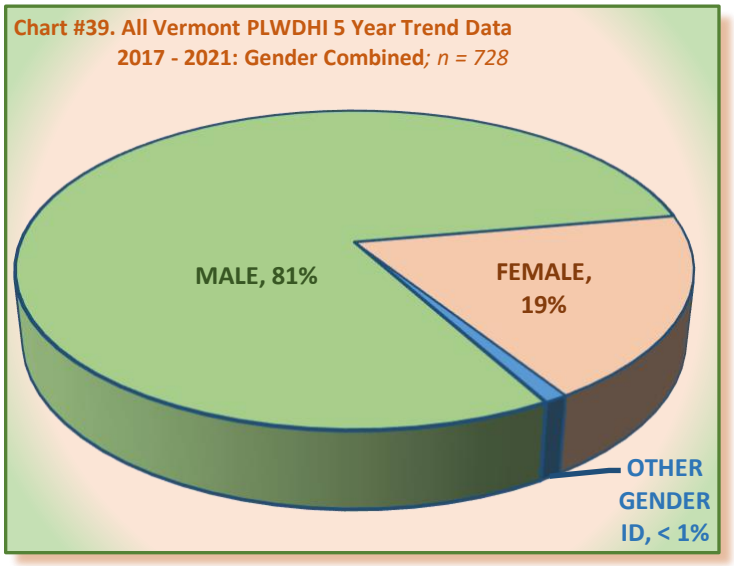
Details cannot be presented on residency, other than all 11 individuals live in Vermont, due to data suppression rules preventing release of potentially identifying information.

3. ALL VERMONT PLWDHI, 5-YEAR TREND ANALYSIS, 2017 – 2021

The five-year trend analysis across categories indicates the consistency of Vermont's epidemic profile. Trends can be isolated, but the percent changes are narrow, and with Vermont's small population, one to two cases can shift a category. Simultaneously, given the small values, incremental trends can be tracked more closely, and do indicate a rise in risk/diagnoses among some populations, including Vermonters identifying on the transgender spectrum, and BIPOC Vermonters.

All Vermont PLWDHI, 5-Year Trend Analysis, 2017 – 2021: Gender

Chart #39 presents five year data on gender, which represents a solid picture of the gender breakdown of Vermont's HIV epidemic. **Chart #40** breaks out the five years, to visualize the comparative changes over time. In this second chart it is notable that while the representation is a 1% change, in a state with 11 to 19 cases diagnosed per year, there is an increase in cases of HIV among Vermonters identifying as transgender. Otherwise, this trend data is further indication that Vermont's HIV epidemic remains largely located among men.



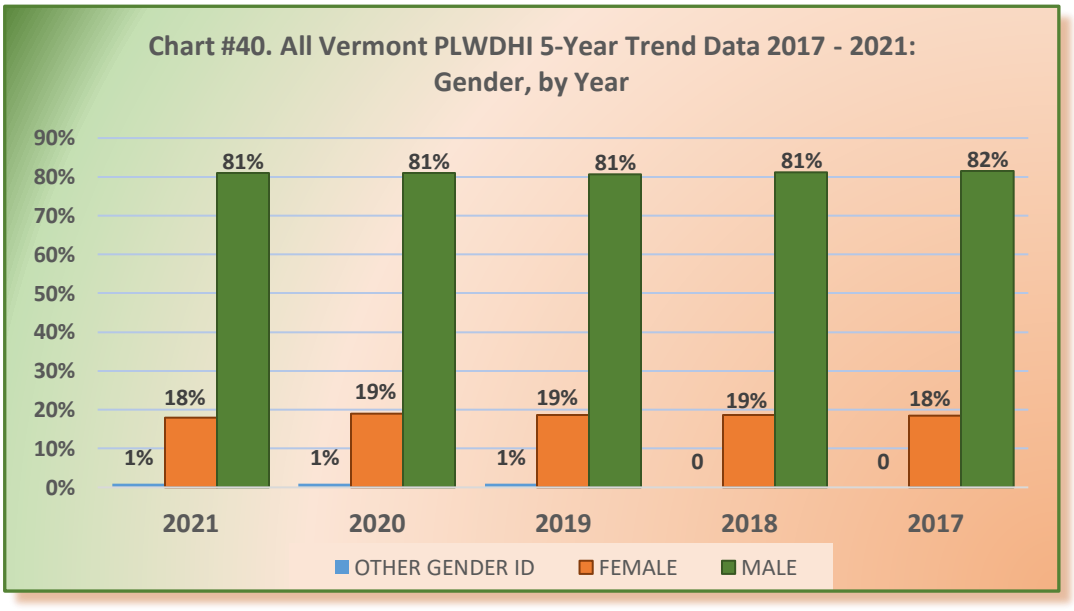


Table #13. All VT PLWDHI 5-Year Trend Data 2017 – 2021: Gender, by Year					
GENDER BY PERCENT	2021	2020	2019	2018	2017
OTHER GENDER ID	1%	1%	1%	0	0
FEMALE	18%	19%	19%	19%	18%
MALE	81%	81%	81%	81%	82%
TOTAL	100%	101%	100%	100%	100%
GENDER BY NUMBER	2021	2020	2019	2018	2017
OTHER GENDER ID	9	6	0	0	0
FEMALE	129	134	133	130	125
MALE	590	567	565	563	553
TOTAL	728	707	698	693	678

All VT PLWDHI, 5-Year Trend Analysis, 2017 – 2021: Race

The large picture of the racial makeup of Vermont's HIV epidemic has also remained steady over the years, but once again an incremental change appears that highlights increased diagnoses among People of Color. By one and two percent, the numbers continue to shift, but with the limited number of diagnoses per year, this does represent trends. In concert with the disparity among case rates, racial disparity is continuing to grow, rather than decrease.

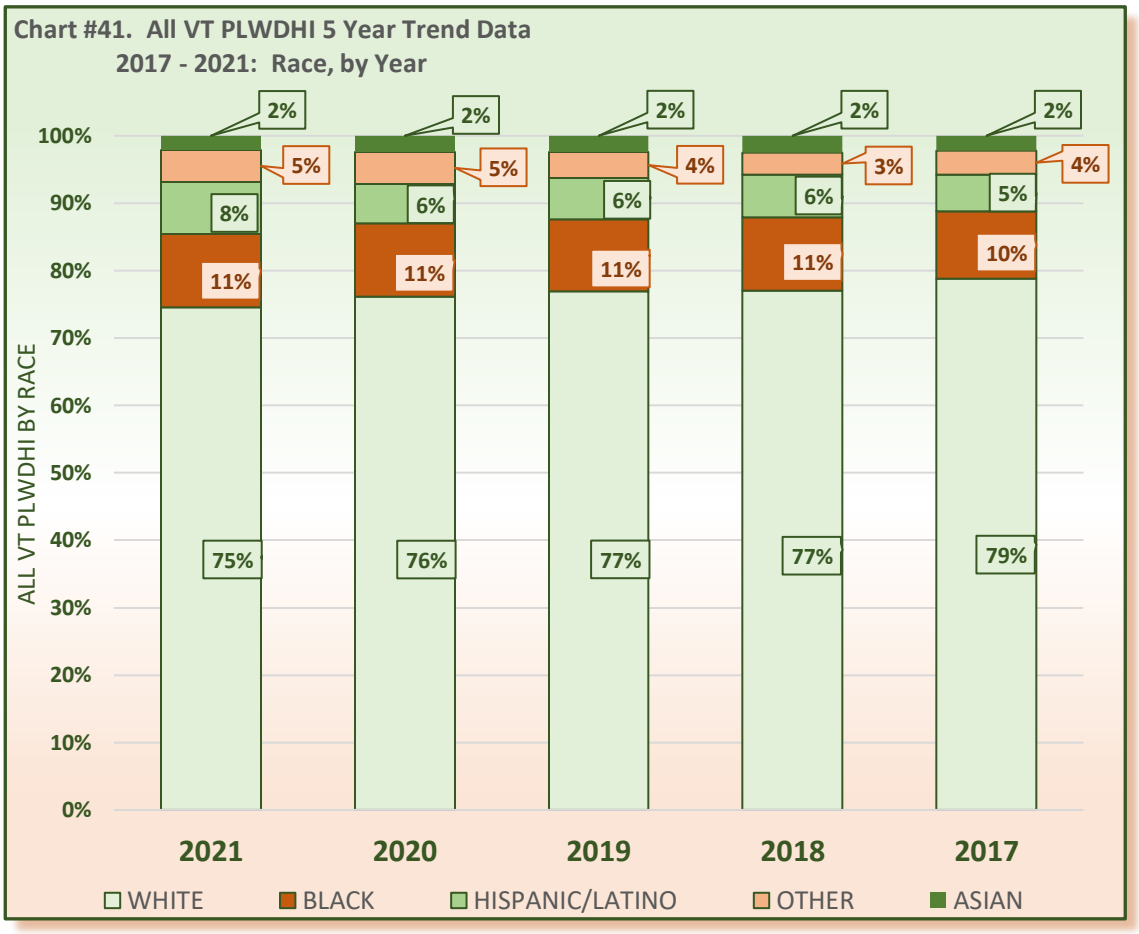
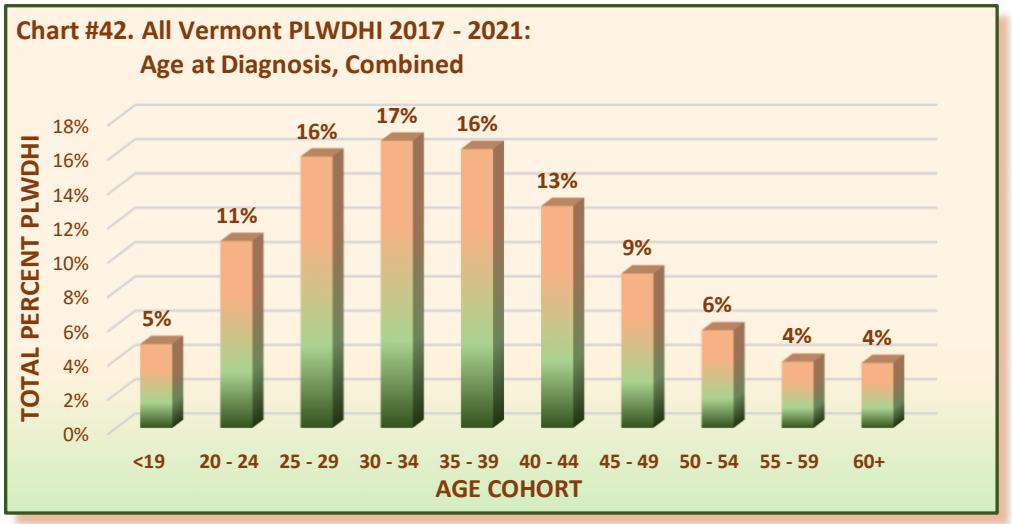
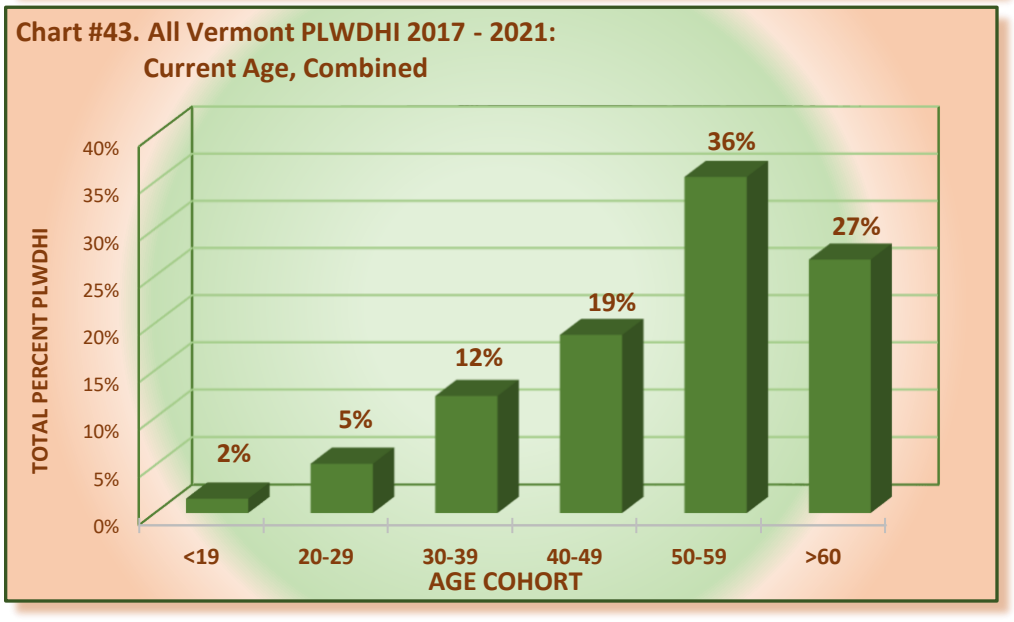


Table #14. All VT PLWDHI 5 Year Trend Data 2017 – 2021: RACE										
BY NUMBER	2021		2020		2019		2018		2017	
WHITE	543	75%	538	76%	537	77%	534	77%	534	79%
BLACK	79	11%	77	11%	75	11%	75	11%	68	10%
HISPANIC/LATINO	56	8%	42	6%	43	6%	44	6%	37	5%
OTHER	35	5%	33	5%	27	4%	23	3%	24	4%
ASIAN	15	2%	17	2%	17	2%	17	2%	15	2%
TOTAL	**728**	**100%**	**707**	**100%**	**698**	**100%**	**693**	**100%**	**678**	**100%**

All Vermont PLWDHI, 5-Year Trend Analysis, 2017 – 2021: Age

Five year trend data for current age of all VT PLWDHI at the end of the calendar year, and at the age of diagnosis, indicate the aging of VT's PLWDHI population, as noted previously. Generally speaking, the age ranges above age 55 continue to account for most of the growth of HIV cases.





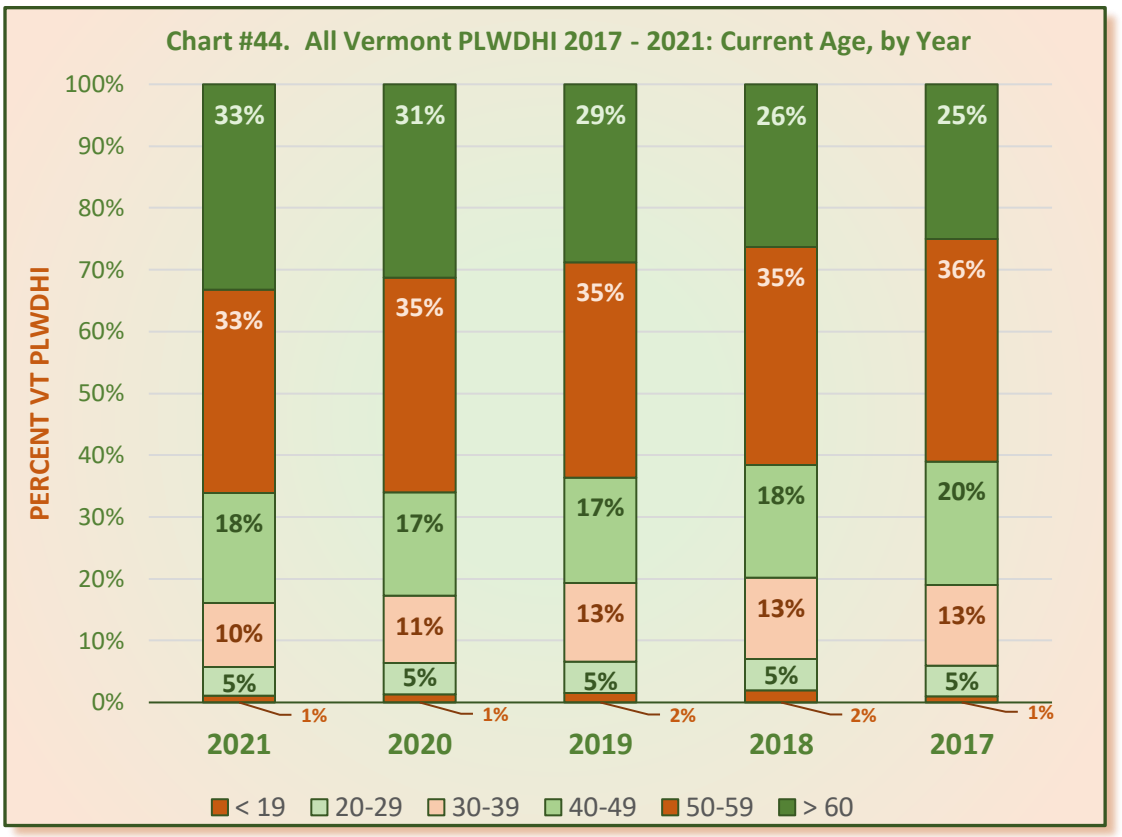


Chart #44. All Vermont PLWDHI 2017 - 2021: Current Age, by Year
PERCENT VT PLWDHI
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
33%
33%
18%
10%
5%
1%
31%
35%
17%
11%
5%
1%
29%
35%
17%
13%
5%
2%
26%
35%
18%
13%
5%
2%
25%
36%
20%
13%
5%
1%
2021
2020
2019
2018
2017
< 19
20-29
30-39
40-49
50-59
> 60

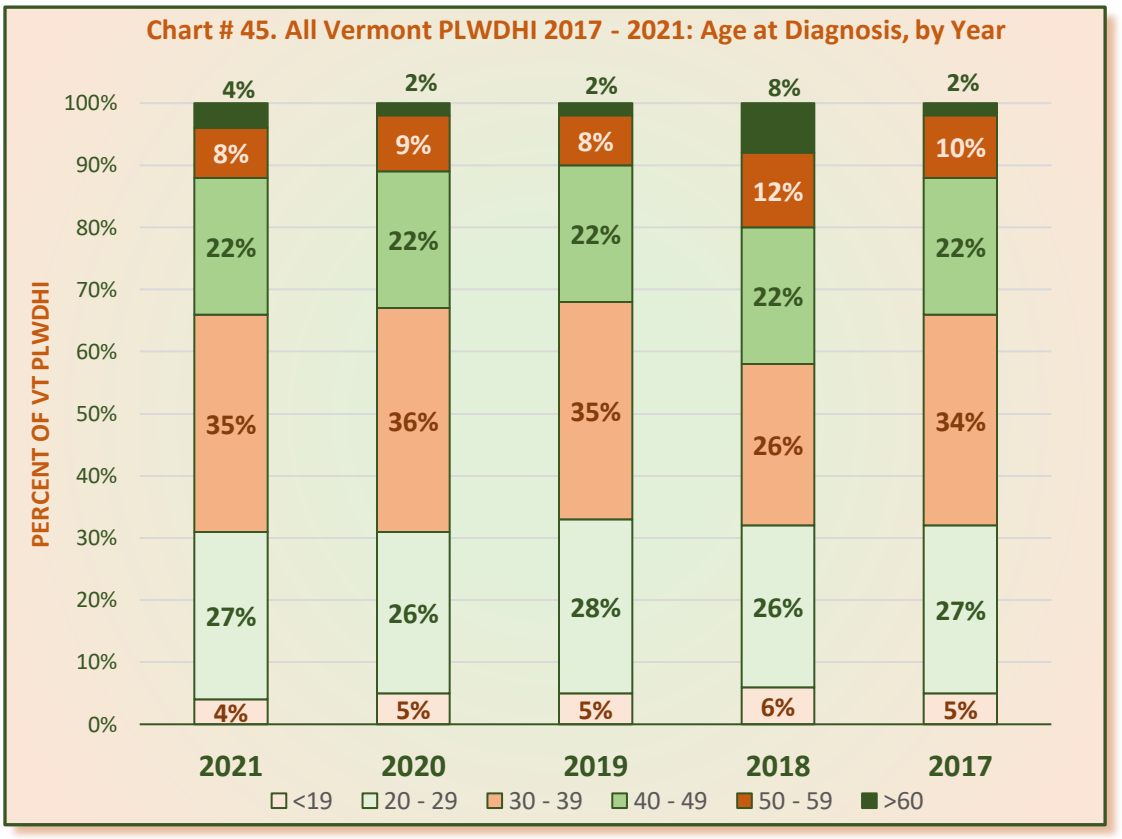
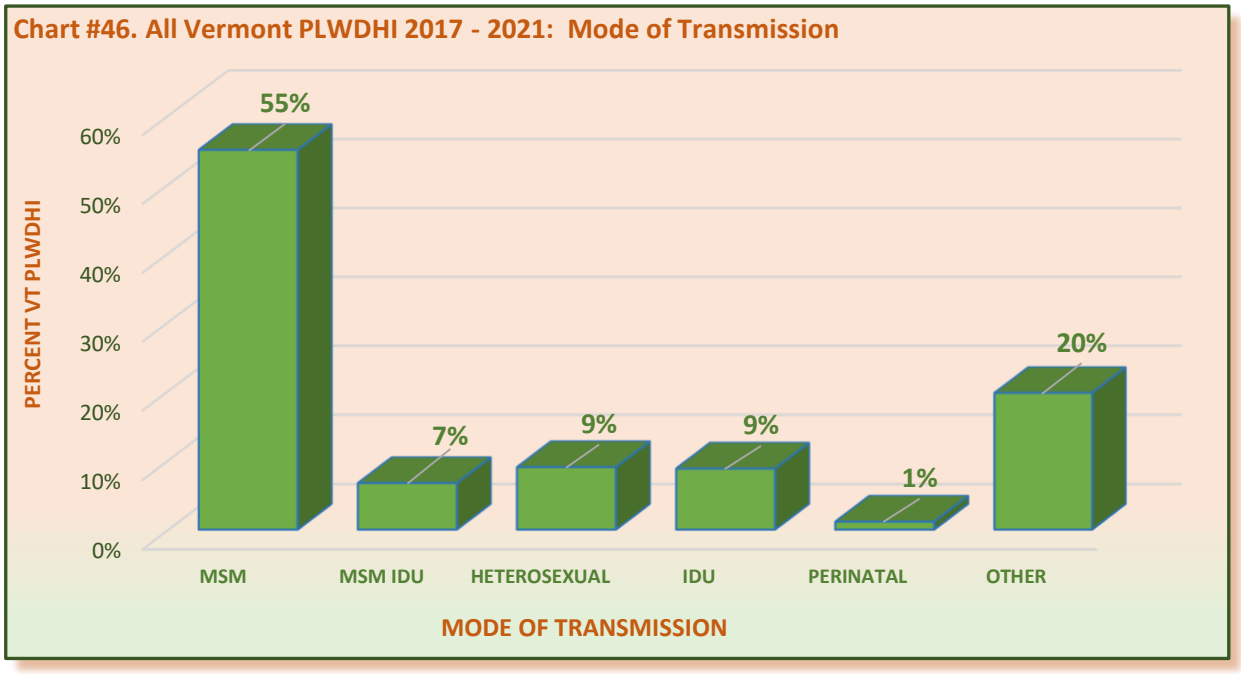


Chart # 45. All Vermont PLWDHI 2017 - 2021: Age at Diagnosis, by Year
PERCENT OF VT PLWDHI
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
4%
8%
22%
35%
27%
4%
2%
9%
22%
36%
26%
5%
2%
8%
22%
35%
28%
5%
8%
12%
22%
26%
26%
6%
2%
10%
22%
34%
27%
5%
2021
2020
2019
2018
2017
<19
20 - 29
30 - 39
40 - 49
50 - 59
>60

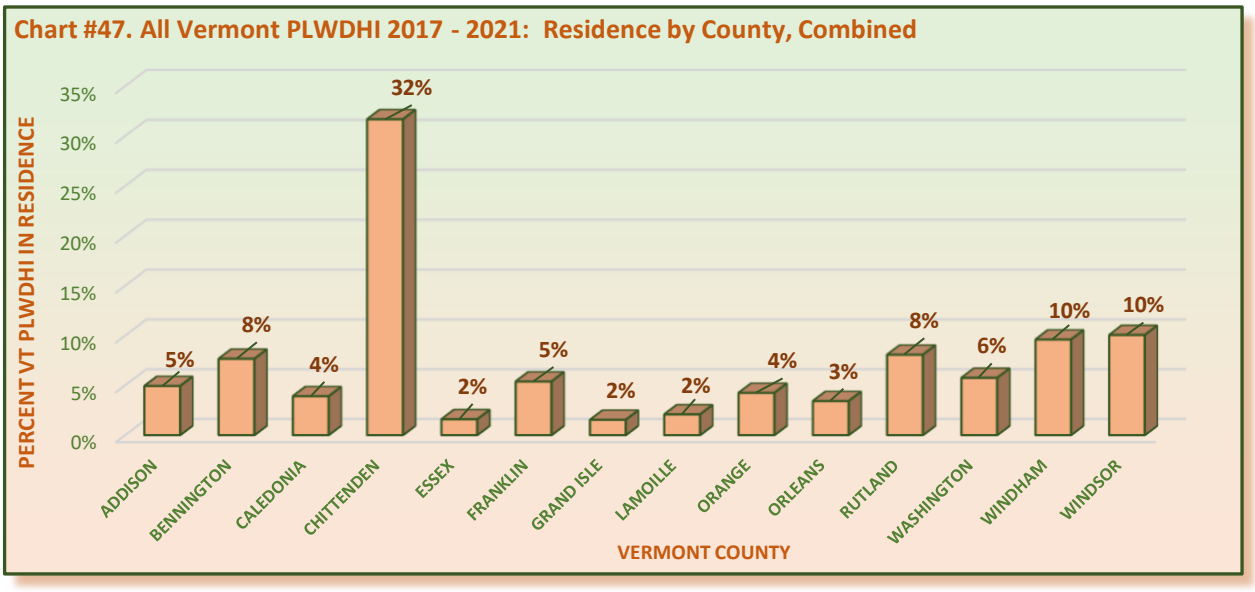
All Vermont PLWDHI, 5-Year Trend Analysis, 2017 – 2021: Transmission

Mode of transmission trends remain consistent, with one percent (1%) changes from year to year in all categories, over the five-year history.

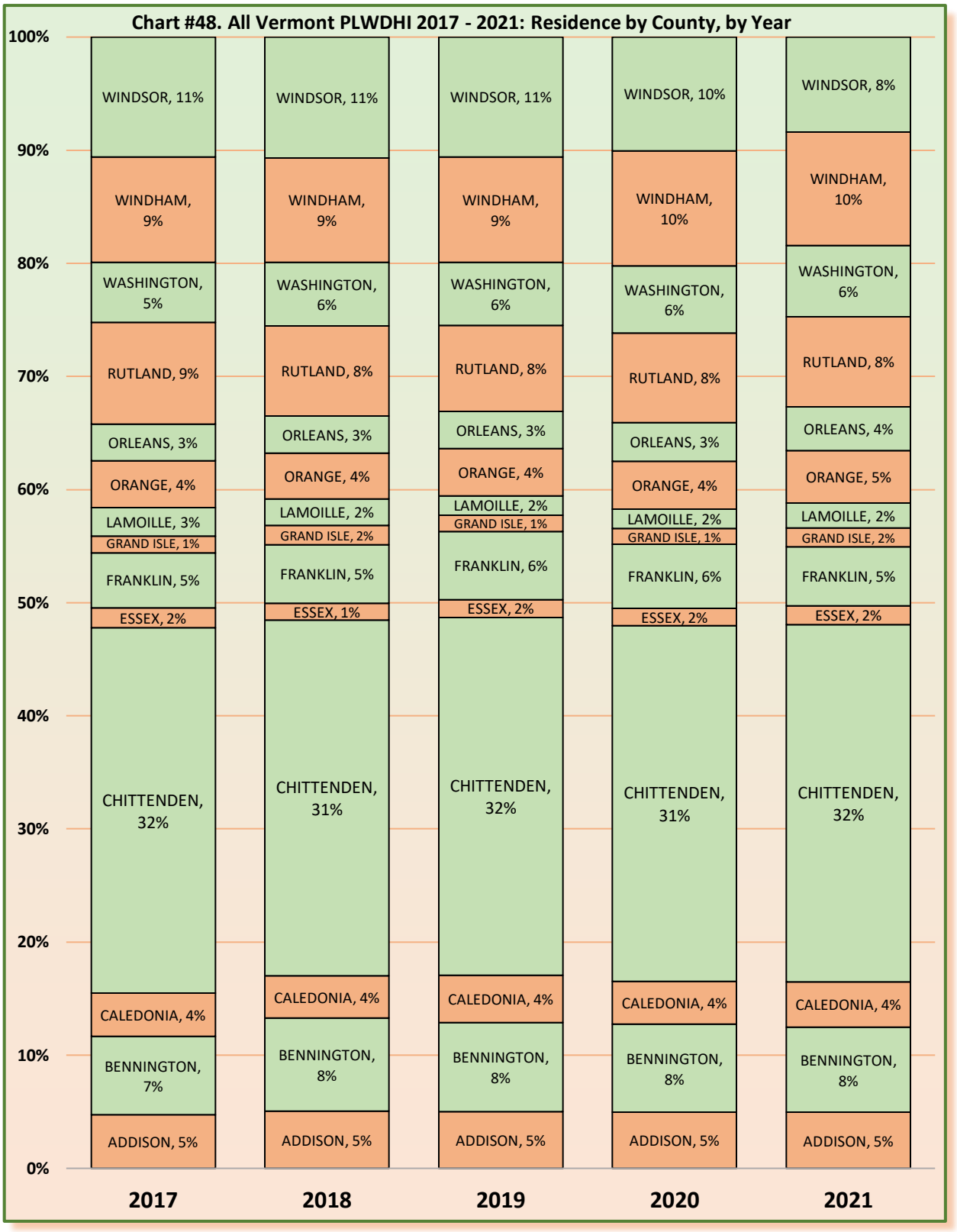


All Vermont PLWDHI, 5-Year Trend Analysis, 2017 – 2021: Residence

County residence has seen changes of one to two percent across the state, throughout the past five years. The majority of VT PLWDHI continue to reside in Chittenden County, the location of Vermont's largest city and only Metropolitan Statistical Area. Only Windsor County sustained a change of 4%, decreasing from 11% of VT PLWDHI to 8% of PLWDHI in residence. As noted, due to low overall numbers, a small number of individuals can have a large impact on percentage changes, especially in counties with less than 10% population concentration. The consistency of the colored bars over the five



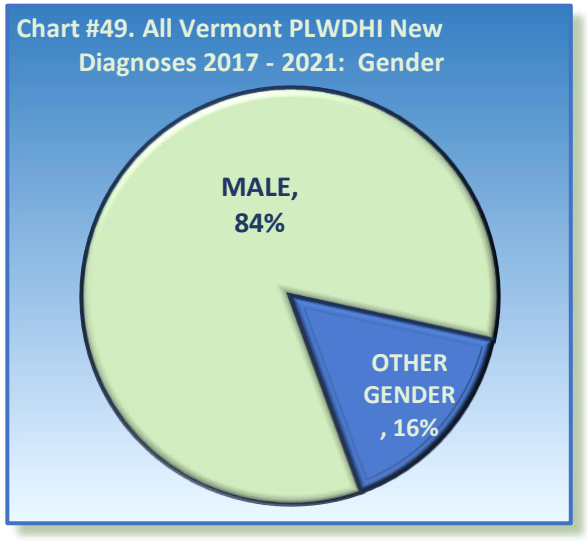
columns representing years on **Chart #48** visually demonstrates how few residential changes there have been from year to year.

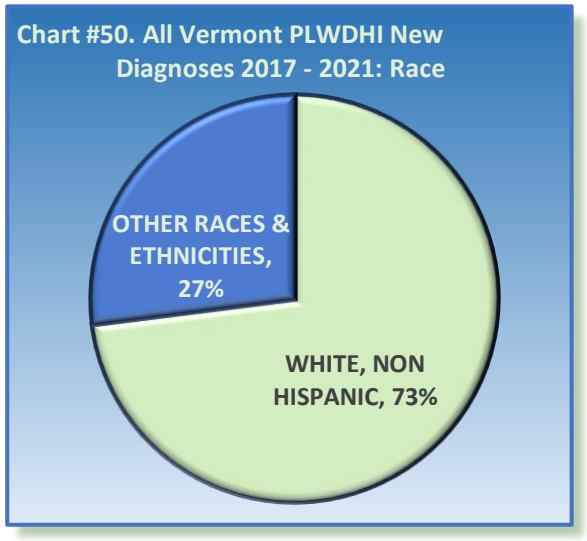


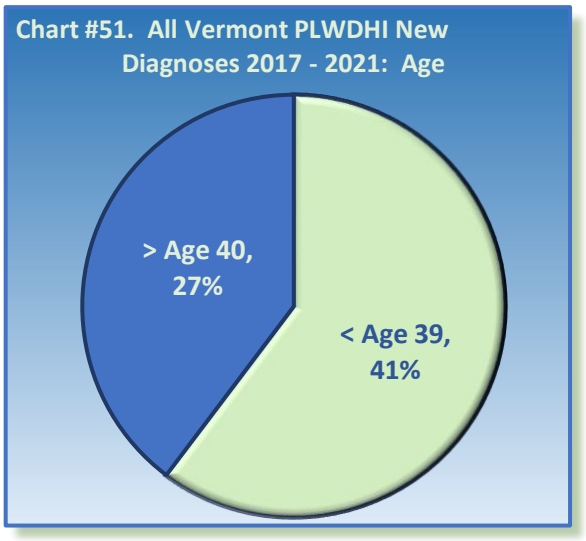
4. VERMONT NEW HIV DIAGNOSES, 5-YEAR TREND ANALYSIS, 2017 – 2021

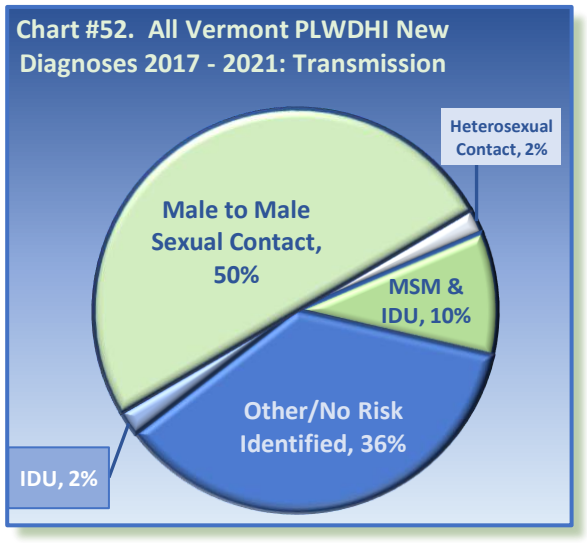
In an effort to display as much data as possible given the small numbers of diagnoses per year, for the five-year trend analysis demographics have been divided into two or more categories with some categories combined to prevent the release of small data points that could be identifying. All charts reflect 5-year totals with no corresponding year-by-year break out, in keeping with VDH policy of suppressing data cells with a value representing 5 or fewer individuals.

Gender, Race, Age and Transmission are all displayed below. County Residence data cannot be displayed at all, due to small data values.









Clusters & Outbreaks, Comorbidities and Deaths

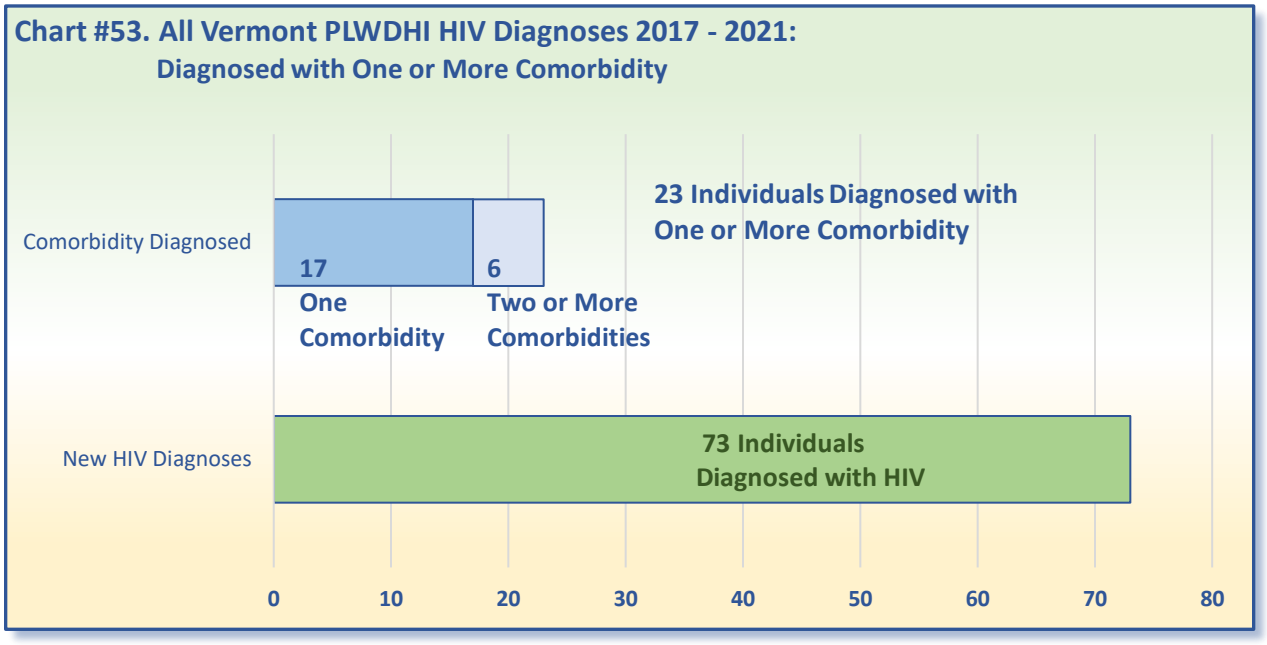
Clusters & Outbreaks

Vermont identified one cluster of HIV cases during the past five-year time period. From the *Clinical Infectious Disease* journal article concerning the cluster: Between January 1, 2017 and December 31, 2018, 38 residents were diagnosed with HIV-1 infection. The mean age was 35.5 years, 79% were male

and 82% were White. Risk factors for HIV-1 included MSM status (79%) and methamphetamine use (21%). Eleven of the 38 (29%) had positive syphilis serology, including four (36%) with neurosyphilis. Sexual networking analysis revealed a ten-person cluster with higher VLs at diagnosis. Phylogenetic analysis showed a cluster of 14 cases with sequences that shared 98%–100% HIV-1 nucleotide identity.[69]

Comorbidities

Due to data collection limitations, comorbidity data reported here is based on the presence of comorbid diseases in the year of HIV infection diagnosis, and the one year following HIV diagnosis. The following information is presented in summarized form only, due to small numbers triggering the state's cell suppression rules. Of **73 HIV diagnoses** in the five-year period of 2017 - 2021, **32% (23)** had comorbidities from the following list of diseases: syphilis, gonorrhea, chlamydia, hepatitis B, and hepatitis C. Of the 23, 6 had two or more comorbidities from that list, representing 8% of the 73 new HIV diagnoses.[70]



The only diseases that can be identified numerically for the five year period include syphilis at 13 cases, gonorrhea at 6 cases, and chlamydia at 7 cases. While cases of hepatitis B and hepatitis C were found, they did not exceed the threshold for data inclusion (6 or more cases). The majority of comorbid cases were categorized as MSM sexual transmission, accounting for 87% (20) of the 23 cases of comorbidity, and 27% of the 73 total new HIV diagnoses.[71]

Deaths

Vermont experienced a total of 51 deaths of individuals with diagnosed HIV infection, regardless of final cause of death, between 2017 and 2021. **Chart #54** displays number of deaths per year. There is a clear upward trend, however, as stated, small numbers can create an impression of larger changes from year to year.

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[69] Singh, Devika; William M. Switzer, Roy Belcher, Daniel Daltry, and Jennifer S. Read. "Identification of a Human Immunodeficiency Virus Type 1 and Neurosyphilis Cluster in Vermont." *Clinical Infectious Diseases.* Published online 8 December 2020. 2021;73(9):e3244–9.

[70] HIV Surveillance, Vermont Department of Health.

[71] Ibid.

Due once again to Vermont's small numbers, little granular data can be released on the demographics of individuals who died. Summary data can be provided by grouping the deaths into categories.

Deaths were primarily among men, 86% in total, across all years. At 18% of all current HIV cases, women accounted for 14% of deaths. All deaths were among cisgender individuals.

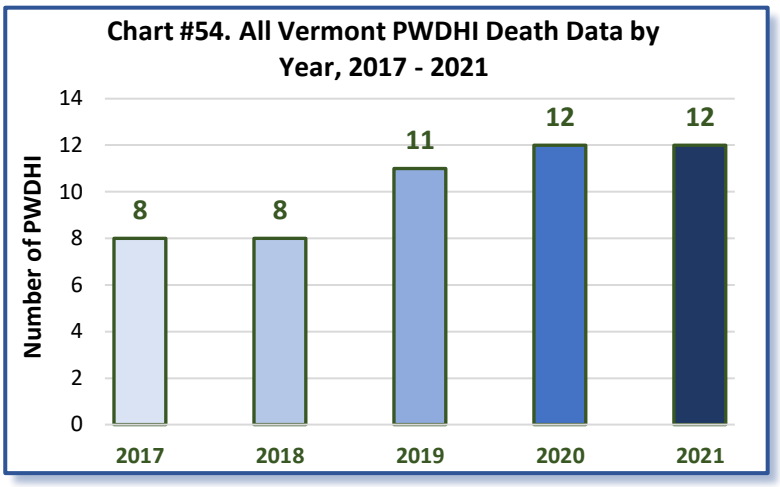
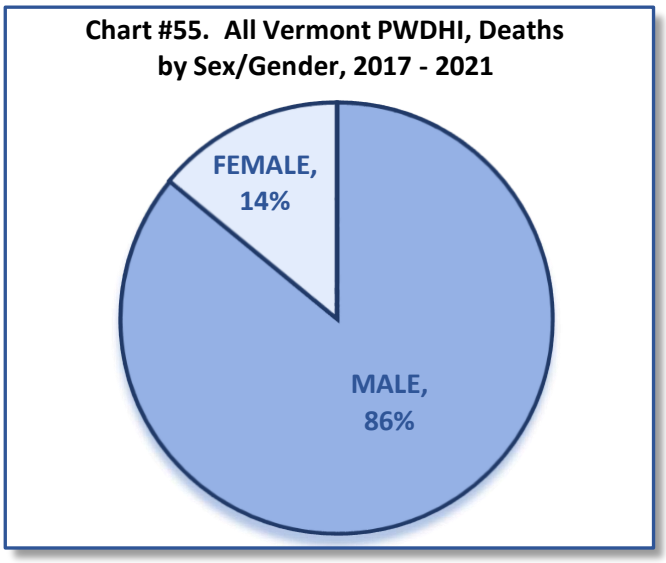
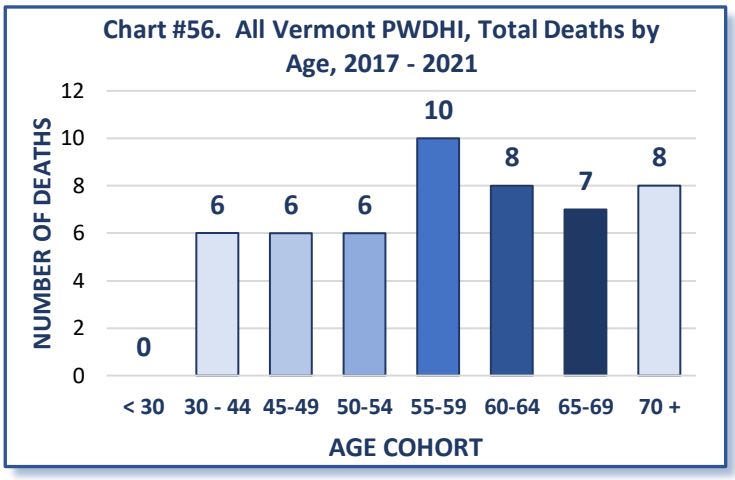


Table #15. All VT PWDHI, Deaths by Sex/Gender, 2017 – 2021		
GENDER	**NUMBER**	**PERCENT**
Male	44	86%
Female	7	14%
TOTAL	**51**	**100%**



The highest number of deaths occurred in the 55 - 59 age cohort, and were concentrated in individuals 55 years of age and older. No deaths were recorded for individuals under 30 years of age.

Table #16. All PWDHI, Deaths by Age, 2017 – 2021		
AGE COHORT	**NUMBER**	**PERCENT**
< 30	0	0%
30 - 44	6	12%
45-49	6	12%
50-54	6	12%
55-59	10	20%
60-64	8	16%
65-69	7	14%
70 +	8	16%
TOTAL	51	100%



White, Non-Hispanic individuals represent the highest number of deaths, at 86%. People of Color, Non-Hispanic, making up 25% of all of VT's current HIV cases, represented 14% of deaths. As noted in the labels, 100% of deaths were among Non-Hispanic individuals.

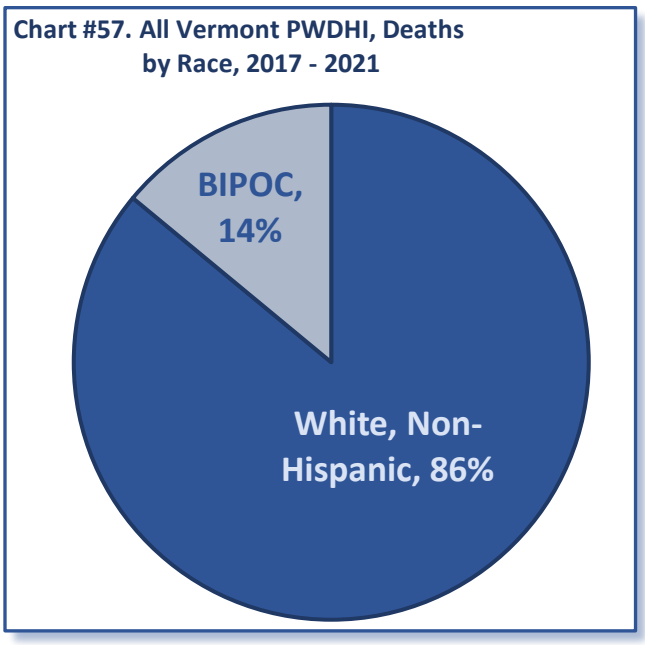


Table #17. All VT PWDHI, Deaths by Race, 2017 – 2021		
RACE	**NUMBER**	**PERCENT**
White, Non-Hispanic	44	86%
People of Color, Non-Hispanic	7	14%
TOTAL	**51**	**100%**

Transmission category among the deaths was primarily represented by MSM, and MSM with co-occurring IDU. Together, these categories make up two thirds of the deaths (67%). A further 20% was the Not Identified/Not Reported category, followed by 7% representing the combined categories of IDU, Heterosexual Contact and Perinatal Exposure.

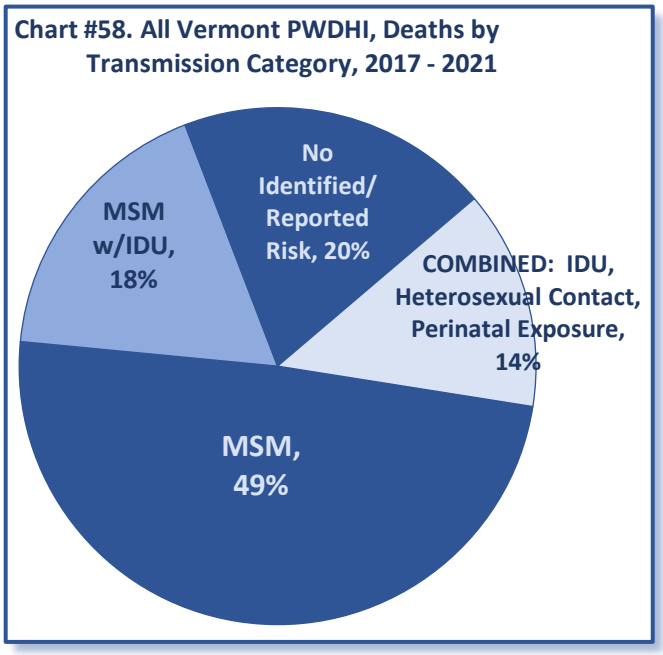


Table #18. All PWDHI, Deaths by Transmission Category, 2017 – 2021		
TRANSMISSION	**NUMBER**	**PERCENT**
MSM	25	49%
MSM w/IDU	9	18%
No Identified/ Reported Risk	10	20%
COMBINED: IDU, Heterosexual, Perinatal Exposure	7	14%
TOTAL	**51**	**100%**

⇒ **CORE QUESTION 2.2:** What is the distribution of social determinants of health (SDH) that exacerbate HIV-related disparities among people with HIV in Vermont?

Distribution of Social Determinants of Health Exacerbating Disparities:

Race, age, and *income* all represent areas of HIV-related disparities and inequities in VT. State *mental health* data indicate a disparity in that arena as well. Social determinants of health that exacerbate these disparities include stigma and discrimination, poverty, VT's high cost of living, a pre-existing housing crisis worsened by the pandemic, and poor transportation infrastructure.

Racial Disparities

VT's HIV epidemic has remained concentrated in terms of race, averaging in the range of 77% White over the past five years. This can be seen as a function of the homogenous racial makeup of the state.

At the same time, an examination of racial and ethnic disparities calls attention to the disproportionate representation of People of Color among VT's PLWDHI – a disparity that is increasing each year. According to 2022 Census estimates, People of Color jointly represent **6% of VT's total population**, yet as of 12/31/2021, they bear **25% of VT's HIV burden**.

Overall, when BIPOC data are combined to represent the 25% of PLWDHI cases they do as of 12/31/2021, Vermont People of Color face over a five-fold higher case rate than White Vermonters (5.3 times the case rate).

Table #19: Vermont HIV Case Rate by Race 2021 & 2022

RACIAL DISPARITY	# of VT Population	% of VT Population	# of VT PLWDHI Population	% of VT PLWDHI Population	HIV CASE RATE
People of Color	38,856	6%	185	25%	**476 per 100K**
White Non-Hispanic	608,748	94%	543	75%	**89 per 100K**

In preceding **Core Question 2.1,** regarding epidemiology of HIV and HIV-related disparities in VT, this issue was highlighted as a primary disparity present in Vermont's HIV epidemic in each segment of data.

Aging Disparities

In VT, HIV disproportionally affects older adults, with the state's PLWDHI age cohorts ranging older than the national averages. The number of PLWDHI aged 25 – 34 in the United States as a whole is 10% higher than in VT. In Vermont, the number of PLWDHI aged 55+ is 17% higher than nationally. As noted above, just over half of Vermont PLWDHI, 51%, are over age 55.

This age distribution among VT PLWDHI is likely to be a factor of both VT's population demographics and the aging of the HIV epidemic. Data does not indicate that there are *social determinants of health* that are causing older Vermonters to become infected with HIV at higher rates than younger. That the majority of VT PLWDHI fall into the 55+ age cohort does demonstrate the health disparities that face older adults across populations, and that these disparities are exacerbated for those with HIV. Those disparities are influenced by unequal distribution of the social determinants of health.

A large body of research exists that the U.S. has considerable deficits in its social, medical, economic and psychosocial support of older adults as their lives change. The first line of a 2021 article in the journal *Current Epidemiological Results*, states "HIV and ageism continue to be key public health challenges in

the USA and globally."[72] Entering this cycle of life with a pre-existing chronic disease requiring medications presents a higher risk for comorbidities and earlier-onset of age-related health complications. These conditions have often impacted employment and earning potential.[73] Many medical conditions create similar circumstances for older adults without HIV. However, HIV has the added difficulty of stigma and discrimination that still affects PLWDHI.

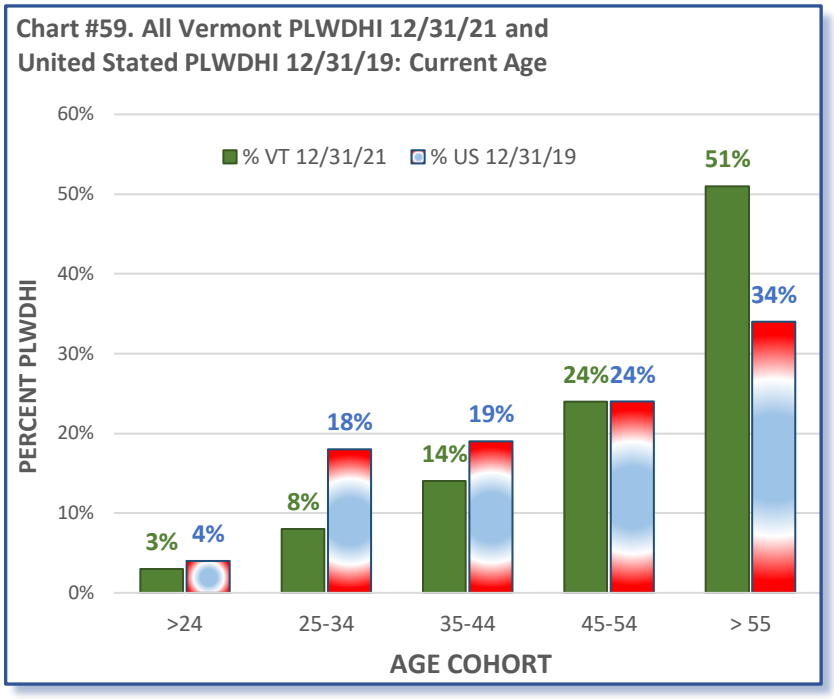


Table #20. VT PLWDHI 12/31/21 and US PLWDHI 12/31/19, by Age

AGE	% VT PLWDHI 12/31/21	% US PLWDHI 12/31/19
>24	3%	4%
25-34	8%	18%
35-44	14%	19%
45-54	24%	24%
> 55	51%	34%

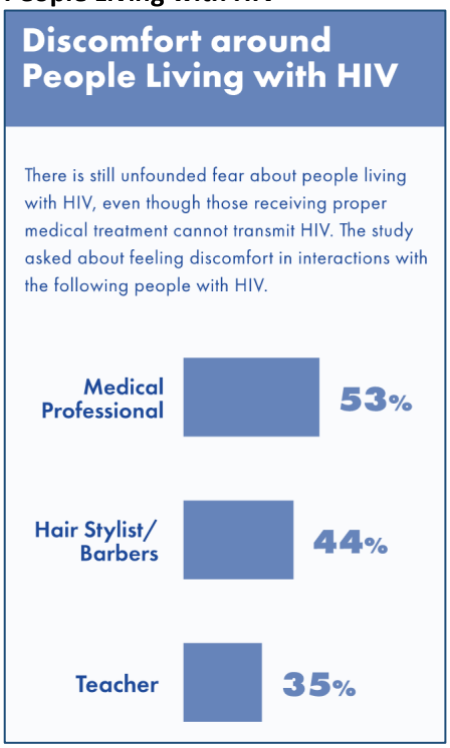
HIV-related stigma is still an issue in VT, as across the nation. Research as recent as 2021 on HIV stigma includes findings that stigma among medical providers still exists, "primarily among white, male primary care physicians, and providers with limited or no HIV-stigma training in the past 12 months."[74] The same research indicated HIV positive patients are often stigmatized by providers as being poor, another layer of stigma that was present in VT's *2016 Needs Assessment*. Responding providers reported perceptions based on "historically negative portrayals of persons at risk for HIV, PLWDHI, and persons who seek HIV prevention and care services."[75]

Among the general population, discomfort about HIV positive professionals continues, as **Figure 3**, identifying the percentage of the population studied that would be uncomfortable with that type of professional, were they HIV positive.[76] **Figure 4** examines the same question, comfort with a professional living with HIV, comparing responses across the US. While respondents in the South and Midwest were almost 10% higher in identifying discomfort, the Northeast retained a high percent of respondents (45%) who were discomfited, too.[77]

[72] Brown, Monique J. and Oluwafemi Adeagbo, "HIV and Aging: Double Stigma," *Current Epidemiological Results*, March 12, 2021. PubMed, accessed November 2022. https://pubmed.ncbi.nlm.nih.gov/33728256/
[73] Boskey, Elizabeth PD, "Premature Aging and HIV," reviewed by Ronald Lubelchek, MD. VeryWellHealth.com. August 29, 2022. Accessed November 2022. https://www.verywellhealth.com/premature-aging-and-hiv-3132959]
[74] 2022 State of HIV Stigma Report. Gilead Sciences and GLAAD. https://www.glaad.org/sites/default/files/2022-State-of-HIV-Stigma-Report-Final-lores.pdf
[75] Ibid.
[76] Ibid.
[77] Ibid.

Even 40 years into the epidemic, societal and cultural stigma toward HIV and PLWDHI remains a signficant problem throughout the U.S., and VT is no exception. A state with many progressive tendencies, VT remains a rural environment with many small towns and communities, with the attendant privacy concerns, as well as instances of homophobia, racism and classism that exacerbate the issue.

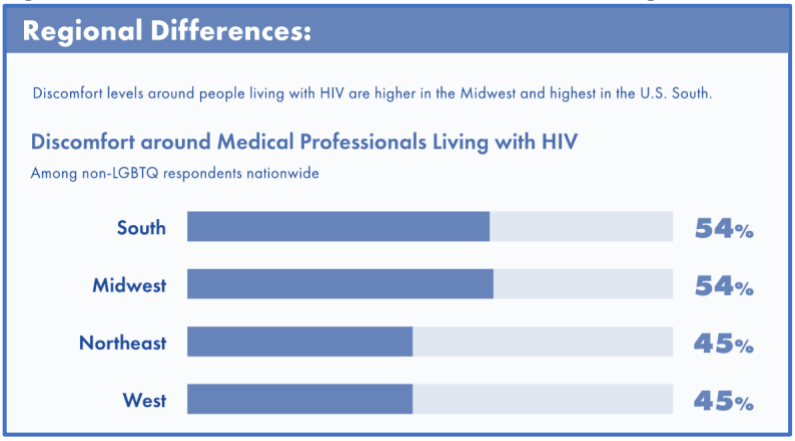
Figure #3. Discomfort Around People Living with HIV



VT Case Managers and resident PLWDHI report stigma experiences around the state; lost jobs, blatant HIV misinformation in school health classes, the need for ASOs to have offices in building with additional tenants so clients can enter without being identified as HIV positive. A VT Medical Case Manager identified the impact of this she sees in immigrant communities, where stigma, and fear of encountering stigma, among the immigrant community, is a signficant barrier to accessing care and treatment. The 2021 Needs Assessment discovered these issues during a telephone conversation with immigrant participants who did not want the word "HIV" said out loud, even while taking the phone call in the privacy of their home, for fear someone would overhear.

On HIV.gov, findings from CDC research on interalized HIV stigma indicated that 80% of adult PLWDHI "who receive HIV medical care in the United States, feel internalized HIV-related stigma," which can lead to depression, isolation, feelings of shame, and can negatively affect HIV medication adherence.[78]

Figure 4. Discomfort with Medical Professionals Living with HIV



Research indicates older PLWDHI may experience "intersectional stigma" from HIV and ageism.[79] In their survey of research on ageism and HIV stigma, Brown & Adeagbo note that social isolation and social support are key determinants of health, and key factors in this dual stigma experience. Among older PLWDHI, a perceived barrier to social support from family and friends was ageism.[80] Scientific literature demonstrates that older PLWDHI are "more likely to experience higher levels of

[78] HIV.gov
[79] Brown & Adeagbo. "HIV & Aging."
[80] Ibid.

stress due to social isolation" and nondisclosure of HIV status and fear of stigma affected older PLWDHI's willingness to access social support.

An estimated seven in ten older adults living with HIV experience this dual stigma, and it can manifest in providers not giving attention to the mental and sexual health of older adults.[81] Over thirty years of research in the U.S. points to the nation's healthcare providers not paying attention to HIV in older adults, often due to assuming they are not sexually active and not at risk. Providers seeing patients with HIV-related symptoms were less likely to link those symptoms to possible HIV infection, due to age stereotypes. Meanwhile, substantial numbers of adults over 50 tested positive for HIV.[82]

In most rural communities, a personal automobile is the primary mode of transportation for more than 90% of travel. This is often a barrier for aging Vermonters who face increased difficulties in both owning a car and driving – along with the financial drain of car ownership, many older drivers face driving restrictions and may begin self-limiting their driving due to visual and mobility limitations.[83] Currently, 37 states and the District of Columbia have special provisions for mature drivers including accelerated renewal frequency; restriction of online or mailed renewals; vision tests; and road tests.[84] Decreased driving affects ability to get to medical appointments, to grocery stores and pharmacies, and increases the risks of social isolation.[85] VT's lack of public transportation infrastructure, in all but the most populated areas, contributes to these barriers faced by PLWDHI.

Another disparity affecting the aging across populations is economic inequality in our society's safety net for older Americans, especially those struggling with disease and disability. This is exacerbated by HIV due to distribution of social determinants of health. Economic strain is a common stressor of aging, due to the onset of reduced earning periods, official retirements, a shift to Social Security as a primary source of income, and rising costs associated with increasing healthcare needs. Physically, the majority of people experience some decreasing health, especially those with preexisting conditions. Pain levels, sleep, and overall mobility are often disrupted, and many individuals report mood disruptions as well.

A variety of factors impact a given person's opportunity and ability to "prepare for retirement years." Many do not – according to the U.S. Government Accountability Organization, approximately half of U.S. households headed by someone aged 55+ do not have any retirement savings. An ability to "save money" for a distant retirement relies on numerous factors – socioeconomic status one is born into, lives in and moves through over the course of their life; familial structures and circumstances; education and career opportunities, including employer-assisted retirement benefits; and individual life circumstances. Many people are not in a position to have money to set aside, as they attempt to live day to day without enough to pay all the bills before them.

Vermont's median household income, in 2021 adjusted dollars, is $67,674. **Chart #60** on VT household income by age range of householder shows how much the average household income can drop with age. These figures represent people who are able to work, most likely full time, or have other non-wage income (investments, rents, pensions, child support). The following most-current income statistics for

[81] Ibid.
[82] Ibid.
[83] Insurance Institute for Highway Safety/Highway Loss Data Institute.
[84] Governor's Highway Safety Association.
[85] Governor's Highway Safety Association.

VT, from the U.S. Census, have been adjusted for 2021 inflation dollars.[86] The social determinant "distribution of wealth" increases disparities experienced by VT PLWDHI.

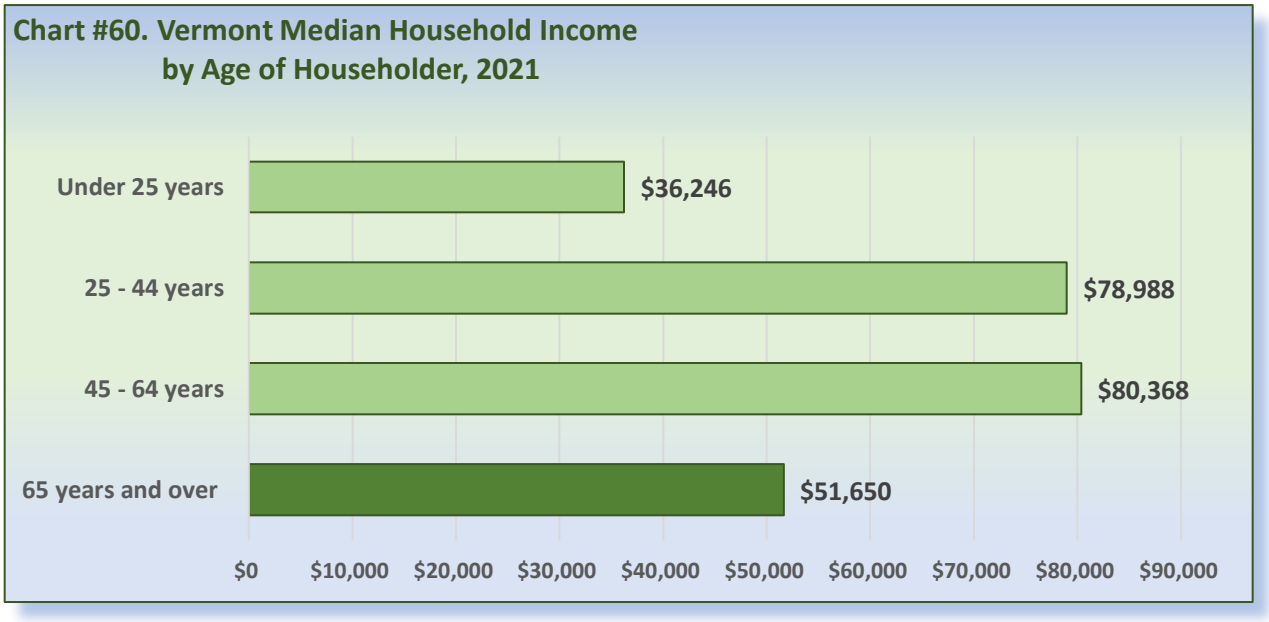


Table #21. VT Median Household Income 2021, by Age of Householder	
Under 25 years	$ 36,246
25 - 44 years	$ 78,988
45 - 64 years	$ 80,368
65 years and over	$ 51,650

The dynamic of increasing age and decreasing standard of living is a higher risk for people who have experienced one or more **income shock events**, of which HIV is a prime example. Income shock events are life events resulting in a sudden drop in a person's income for an extended period of time. Within the last five years, both the *National Endowment for Financial Education* and the *National Institute on Retirement Security* have published extensive research indicating that "**health shocks**" are the highest-impact of all income shock events, with poor health qualifying as the most important life event determining financial preparation for retirement age.[87]

VT HIV surveillance data indicates that while the highest percentage (51%) of PLWDHI are aged 55 years or older, followed by the 45 – 54 age cohort (26%), age at diagnosis data demonstrates the majority of VT PLWDHI were diagnosed earlier in their lives, with just over half diagnosed between the ages of 25 and 39 years. This indicates many PLWDHI have been living with HIV for many years – an earlier onset of HIV increases the risk of higher health care expenses; HIV-related health disruptions; HIV-related inability to work temporarily, recurrently, or permanently; decreased earning potential; and inability to prepare for "retirement."

The *RRF Foundation for Aging* (formerly *The Retirement Research Foundation*) noted in their *Issue Brief* of January 2021 that Social Security and Medicare have not kept up with inflation, even as large numbers of people rely on them for their entire income.[88] Participants in the *2016 Needs Assessment*

[86] Most current income statistics for Vermont from US Census Bureau, in 2021 inflation adjusted dollars, from the *American Community Survey 2021* 5-year estimates.
[87] *Income Shocks & Life Events, Why Retirement Savings Fall Short*. National Endowment for Financial Education. 2017.
[88] Ibid.

also spoke to the shortfall of Supplemental Security Income, as well as other government assistance that was experiencing reductions, such as the Supplemental Nutrition Assistance Program (SNAP).[89]

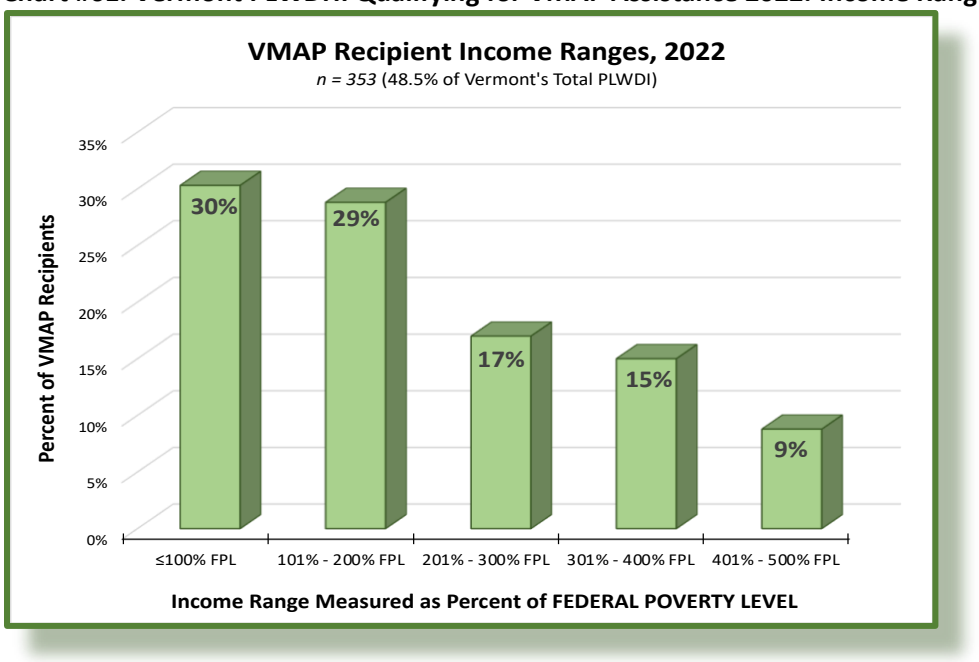
While *The Senior Citizens League* found that Social Security benefits have lost 34% of their buying power since 2000, close to half of older adults rely on Social Security for at least 50% of their income. For about one in four, Social Security provides at least 90% of their income.[90] Many VT PLWDHI are at risk of relying on Social Security for their income, in a state with a high and increasing cost of living.

Aging is unavoidable, and not a cause of health disparity in and of itself. The disparities experienced by VT PLWDHI are part of the larger societal disparities older individuals face due to the unequal distribution of social determinants of health. PLWDHI face these disparities with the added difficulties of stigma, discrimination, and earlier physical limitations.

Income Disparities

The specific income disparities related to aging, and aging with a chronic disease, were covered above. Beyond that, 15% of the PLWDHI population in VT live at or below the Federal Poverty Level, as compared to VT's statewide poverty rate of 10.3% for all Vermonters. Vermont's AIDS Medication Assistance Plan provides services to PLWDHI living at or below 500% of the Federal Poverty Level, and just under half of all Vermont PLWDHI (49%) qualify. Over half of those individuals live at or below 200% of the FPL. Nine percent of VMAP recipients have incomes that are over 400% of the FPL.

Chart #61. Vermont PLWDHI Qualifying for VMAP Assistance 2022: Income Ranges



Assessing the social determinants of health in VT, economic inequality exacerbates HIV-related disparities. VT's higher cost of living and housing crisis contribute to the health disparities faced.

[89] 2016 Vermont Statewide HIV Care & Prevention Needs Assessment.

[90] "Policy Basics: Top Ten Facts about Social Security." Center on Budget and Policy Priorities. March 4, 2022. Accessed November 2022. https://www.cbpp.org/research/social-security/top-ten-facts-about-social-security

Housing Disparities

In the VT housing section, the following information was displayed in a chart that highlighted the most expensive areas to live in VT. The table below adds the population distribution of state's PLWDHI to that data, listing the five counties that represent the highest concentrations. Two of those most expensive areas coincide with the areas of the state with some of the highest concentration of PLWDHI populations. The county highest in expense is also the highest in PLWDHI residency.

Table #22. Most Expensive Vermont Rental Areas vs Counties with Highest PLWDHI Residence

Most Expensive Vermont Rental Areas	Housing Wage Required	Vermont Counties With Highest Percentage PLWDHI Population	Percent of VT PLWDHI
Burlington-South Burlington MSA* (Located in Chittenden County)	**$28.85**	**Chittenden County**	**31%**
Washington County	$22.00	Windsor County	11%
Addison County	$21.48	**Windham County**	**9%**
Windham County	**$20.94**	Bennington County	8%
Lamoille County	$20.40	Rutland County	8%

***MSA** = Metropolitan Statistical Area; HUD Metro Fair Market Rate Area

The social determinant of affordable housing exacerbates HIV-related disparity through stigma and discrimination, as well. VT and federal law provide housing discrimination protections for certain categories of tenants, such as parents, people of color, LGBTQ+ renters, people with disabilities, and people living with HIV. However, in the housing market that VT currently hosts, renters in protected classes are more vulnerable to discrimination that can be disguised as rent hikes or "no cause" terminations.[91] The high sales market and surge of investment properties provides an environment vulnerable to this form of discrimination, and exacerbates housing difficulties for PLWDHI. With "market rate" rents rising, rent increases are difficult to question as legal discrimination.

VT law prohibits landlords from refusing renters who get public assistance, but property owners can raise rents above the federal Section 8 rent-voucher eligibility guidelines.[92] Only 38% of people who received vouchers in 2021 through the VT State Housing Authority found a place to use them, which VSHA states is "historically low." A federally-authorized increase in the amount VSHA can pay landlords helps, but with increased monthly cost paid for each unit, it concentrates existing resources and reduces VHSA's ability to assist more people. Addison County Community Trust reported their rental applications doubled during COVID, with "seven or so households vying for every unit that becomes available."[93]

Housing has been in the top tier of services identified as priority needs by VT PLWDHI and the state's HIV Community Advisory Group for many years. Among PLWDHI in Non-Medical Case Management in VT, housing instability is tracked as an indicator on the state's *Performance to Goals Dashboard* that is shared regularly with the CAG. The state's goal is 90% of all NMCM PLWDHI receiving Emergency Financial Assistance be stably housed. For year ending 2022, 96% were stably housed (147 of 154).[94]

[91] Brouwer, Derek. "Renters' Prison: How a Merciless Market of Unchecked Rent Hikes Traps VT Tenants." Locked Out Series, Part 6. *Seven Days*. July 6, 2022, updated July 28, 2022.
[92] Ibid.
[93] Ibid.
[94] Grantee Quarterly Service Reports, Vermont Department of Health.

Following extensive feedback from providers, PLWDHI, and the *2016 Needs Assessment*, the VDH worked to address the issue of the waiting list for HOPWA vouchers. VDH created the Bridge to HOPWA program that provided vouchers to help get people housed while they continued to wait for a HOPWA voucher to become available. This made a difference and the Bridge to HOPWA (BtH) program continues to help PLWDHI while they wait for an opening on the HOPWA list. The HOPWA waiting list would be much longer without the BtH vouchers, but there are still not enough BtH vouchers.

As described previously, part of the problem is the overall lack of affordable housing in the state. There are PLWDHI who qualify for a housing voucher if they could find an affordable location, but there are not enough affordable places to rent. HOPWA does not cover an entire rent expense; calculations of what individuals must pay toward rent depend on a person's circumstances. General guidelines, for people/families who are not receiving other federal housing assistance, require PLWDHI to pay 30% of monthly adjusted income, or 10% of monthly gross income, whichever is higher. Eligible PLWDHI households must locate a place that they can afford between the combination of their designated HOPWA assistance plus their required share.

Another dimension to HIV health disparities in housing is the populations who are not on a HOPWA waiting list, because they are HIV negative – people who are already at high risk of HIV infection, and at higher risk due to unstable housing and/or homelessness. People with active use of injection drugs, members of the gay and bisexual men's and transgender and gender non-conforming communities experiencing increased risk, sex workers – these are all people who, if their housing could be stabilized now, might be able to participate in HIV prevention in a way they currently cannot. Someone who is homeless is less likely to pursue a PrEP referral until they locate a reliable place to sleep.

SECTION 3: Domain 3—HIV Care & Treatment among People with HIV in Vermont

⇒ **CORE QUESTION 3.1:** What HIV care and treatment services are available in Vermont?

HIV Care & Treatment among PLWDHI

While HIV testing traditionally falls under HIV prevention, VT is embracing the Status Neutral Approach to HIV testing under which those with reactive results are linked to care and treatment, and those with nonreactive results are linked to biomedical forms of prevention (primarily PrEP) and other support services.

As such, the state's comprehensive continuum of care begins with the status neutral approach to testing. Individuals test through VT's Testing, Referral and Linkage Prime Vendor program (TRL PV), other community testing resources such as Planned Parenthood, or the **Comprehensive Care Clinic** (CCC). The CCC is based at the **University of VT Medical Center** (UVMMC), VT's RWHAP Part B HIV specialty medical provider, and maintains four satellite offices located throughout the state to promote adequate access for all Vermonters.[95] UVMMC-CCC provides outpatient ambulatory care, mental health services, medical nutrition therapy, medical case management, and treatment adherence services.

On receipt of a non-reactive HIV test result, individuals are assessed for PrEP referral and linked with services that will promote prevention of future infection.

On receipt of a reactive HIV test result, an individual is referred and linked to medical care within two weeks, often within days. The individual receives a confirmatory blood test and other needed services, with RWHAP Part B funds assisting with the expense of initial medical appointments and laboratory expenses as needed. Personal contact is made to offer Partner Services, to assist in locating other individuals who may be at risk of infection.

Clients with confirmed diagnoses are referred to one of three AIDS Service Organizations (ASOs) for Non-Medical Case Management if desired, and apprised of additional community based organizations that offer relevant services. Concurrently, the individual is referred to the VT Medication Assistance Program (VMAP), VT's RWHAP AIDS Drug Assistance Program.

Half of VT's PLWDHI (49%) qualify for VMAP assistance at varying levels. VT VMAP eligibility begins at income at or below 500% of the FPL. Thirty percent of eligible PLWDHI live at or below 100% FPL, and over half (59%) live at or below 200% FPL. VMAP helps to maintain health insurance coverage for 97% of eligible individuals. Once an individual enrolls in VMAP, they are auto-enrolled in the Dental Care Assistance Program (DCAP), funded by RWHAP Part B dollars. Eligibility is verified annually.

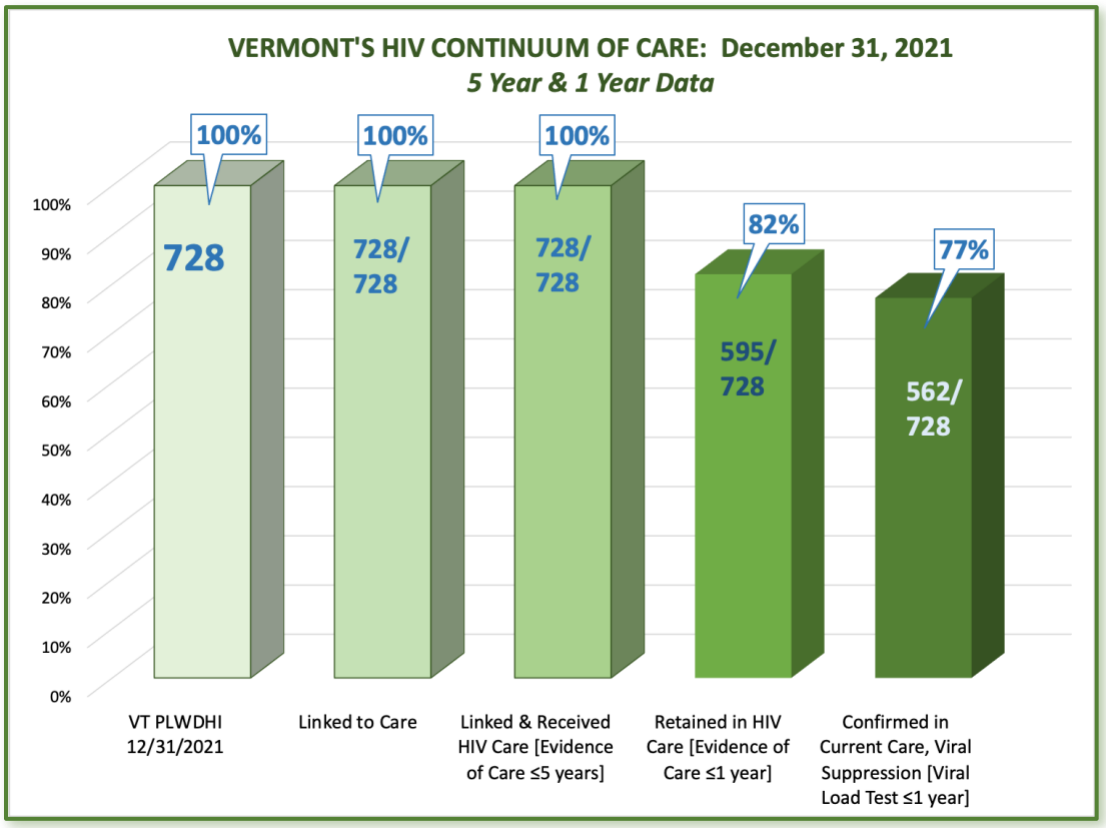
[95] *VT's Testing, Referral & Linkage Program* is not funded through HRSA RW Part B, but is integral to staging Continuum of Care.

⇒ **CORE QUESTION 3.2**: What is the HIV care continuum for the overall population and for priority populations in Vermont?

VT's *Continuum of Care* charts below illustrate the quality of the state's system of care. First, **Chart #62** provides the *Continuum's* five traditional categories utilizing five (5) year and one (1) year data. Then **Chart #63** displays the original five Continuum categories, with expanded data and analysis. A data table follows, providing all data in a cascade for easy reference.

Chart #62 indicates that of 728 total PLWDHI as of 12/31/2021, 100% were *linked to* and *received* HIV care, defined by *evidence of care with a viral load test* within the past five (5) years.

Chart #62. Vermont's HIV Continuum of Care: December 31, 2021 – 5 Year & 1 Year Data



Of those 728, 595 PLWDHI, or 82%, display evidence of being *retained in care,* as demonstrated by *evidence of care with viral load test* within the past one (1) year ("past year" is calendar year 2021). The last column shows 562 PLWDHI (77%) with *sustained viral suppression* confirmed with a 2021 VL test.

The differences in **Chart #63** below include:

- The second column – *linkage to care* – breaks out the linkage statistic for only the *new diagnoses* during the 12-month period of 2021.
- The addition of two columns, **Columns Five** and **Seven**, as follows.
    - **Column Five** expresses *viral suppression* as a function of *confirmed care* in the five-year span of 2017 to 2021.
    - **Column Seven** expresses *viral suppression* as a function of *confirmed care* in the one-year time span of 2021.

Chart #63. Vermont's HIV Continuum of Care: 12/31/21 – 5 Year & 1 Year Data, Expanded Analysis

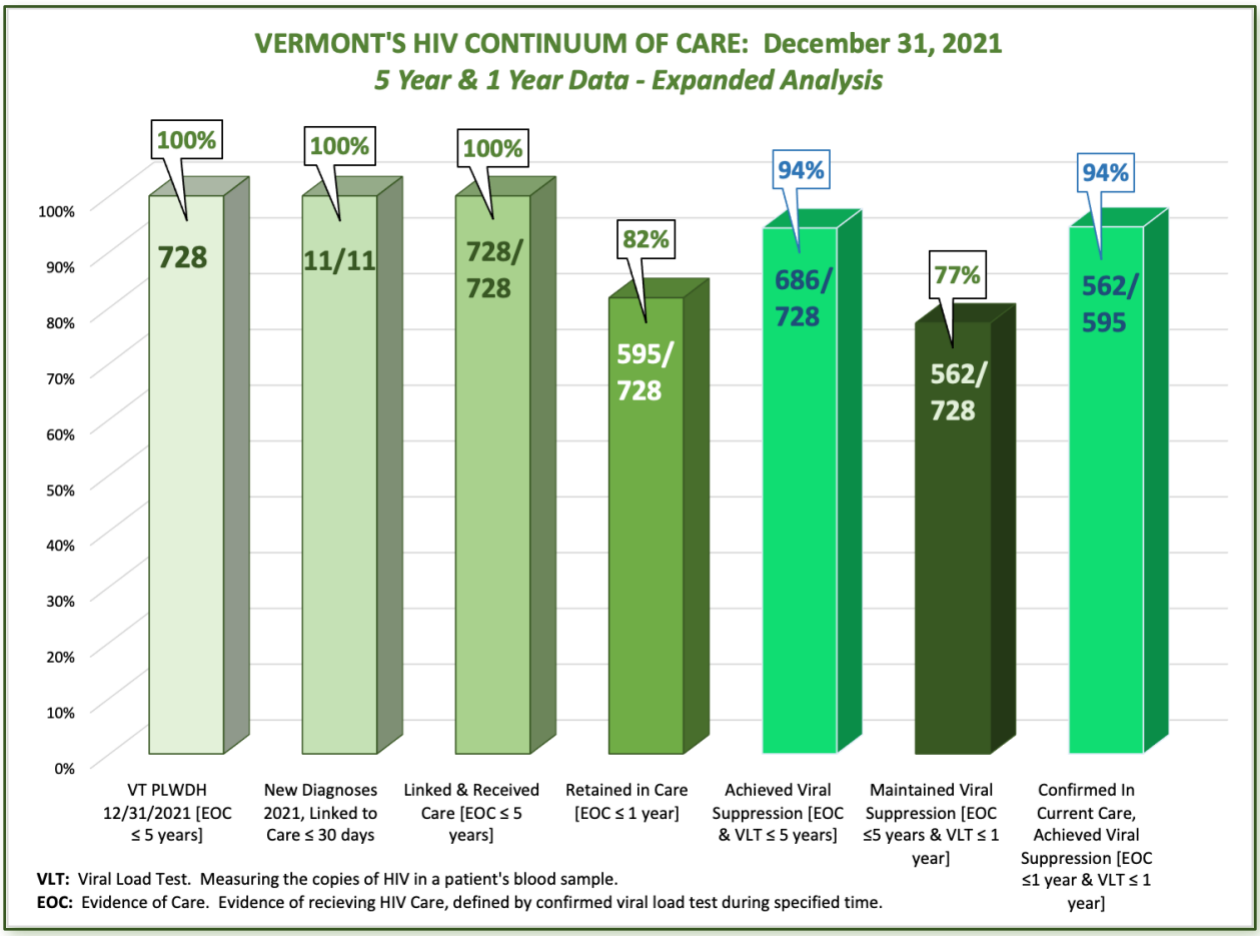


Chart #63's Column 2 indicates that **eleven (11) individuals** were diagnosed with HIV in 2021, and all were *linked to care* within 30 days (the eleven individuals were linked within two weeks, in accordance with VT's Standards of Care). These eleven are included in the count of 728 total PLWDHI represented in **Column 3**, who were successfully *linked to* and *received HIV care*, defined by *reported HIV-related lab results* within the previous five (5) years.

The two bright green columns (**Columns 5** and **7**) display additional data and calculations.

- **Column 5** indicates **686** PLWDHI, or **94%** of the **728** total PLWDHI, demonstrated *viral suppression* on their *most recent viral load test*, recorded within the prior 5 years.
    - Confirmed *sustained viral suppression* is again demonstrated, in **Column 6**, for **562** PLWDHI**,** or **77%** of the **728** total PLWDHI, defined by a *most recent viral load test* recorded within the prior 1 year (2021). This category is represented in **Column 6**.
- **Column 7** indicates that when the numerator of **562** PLWDHI with confirmed *sustained viral suppression* in 2021 is factored with the denominator of the **595** PLWDHI with *evidence of care* in the prior 1 year (2021), as opposed to the denominator of **728** total PLWDHI demonstrating evidence of care in the prior 5 years, the percent of viral suppression among these 526 rises from **77%** to **94%**.

Viral load suppression is 17% higher when focus is narrowed to the 595 PLWDHI who had more recent care interaction, and a confirmed viral load test within the prior one year.

Without one-year viral load results on all of the 686 PLWDHI demonstrating initial viral suppression in the 5 years prior to and including 2021, the confirmed percentage of *sustained viral suppression* among VT PLWDHI is **77%**. Taken as a whole, however, the expanded analysis in Graph #2 demonstrates that if PLWDHI in Vermont's system of care can attend their medical appointments every 6 months to one year, a large majority (90th percentile) reach viral suppression.

Table #23. Vermont's Expanded HIV Continuum of Care: December 31, 2021

PLWDHI RESIDING IN VT on 12/31/2021	NUMBER	PERCENT
Total VT PLWDHI 12/31/2021: Evidence of HIV Care ≤5 years	**728**	**100%**
2021 New HIV Diagnoses Linked to HIV Care ≤30 days	**11**	**100%**
Linked to and Received HIV Care: EOC ≤5 years	**728**	**100%**
Retained in HIV Care: EOC ≤1 year	**595**	**82%**
Achieved Viral Load Suppression: VL Lab Result ≤5 years	**686**	**94%**
Achieved Sustained Viral Load Suppression: EOC ≤5 years & VL Lab Result ≤1 year	**562**	**77%**
Achieved & Maintained Viral Load Suppression: EOC ≤1 year & VL Lab Result ≤1 year	**562**	**94%**

SECTION 4: Domain 4—Prevention of HIV in Vermont

⇒ **CORE QUESTION 4.1**: What is the landscape of HIV testing and prevention services in Vermont, including gaps in prevention?

Prevention of HIV in VT is targeted to priority populations – populations at highest risk according to the state's epidemiologic data, and among that, populations that have been historically underserved. As over half of VT PLWDHI (53%) are within the transmission category *MSM Sexual Contact*, this is a primary cohort for prevention efforts. When *MSM with concurrent IDU* is added as a combined MSM risk, the percent of all cases rises to 59%. The next-highest transmission category is *IDU* at 9%, that rises to 15% when *MSM with concurrent IDU* is viewed from the perspective of a combined IDU risk.

VT employs a combination of strategies: HIV testing, biomedical interventions including PrEP referral/linkage and Treatment as Prevention; condom distribution; Mpowerment; and Syringe Services Programs. With the formal removal of MPowerment as an approved intervention by the CDC, Vermont Pride Center will be reassessing programming for Gay and Bisexual/Trans and Nonbinary MSM in 2024.

Chittenden, VT's most populous county, has the highest concentration of both PLWDHI and MSM residents and therefore has hosted the state's Mpowerment program in the most recent years, operated out of the Pride Center of VT. Pride Center provides a wide range of other health and wellness programs for the LGBTQ+ population, support programs, and social opportunities.

VT maintains a focus on Treatment as Prevention – care connection, retention, and viral suppression, including referrals to treatment-adherence counseling as necessary, and consultation with VDH Disease Intervention Specialists when an individual appears at risk of falling out of care. VT's success with this approach can be seen in the state's performance on the Continuum of Care.

Testing

During the five year period of 2017 – 2021 a total of 410 HIV tests were conducted through all programs funded by the Vermont Department of Health. Eleven were conducted in a clinical setting, and 399 in non-clinical community settings. The majority of 71% (284) were conducted at a community-based HIV testing site, with 17% (108) conducted at syringe exchanges throughout the state.

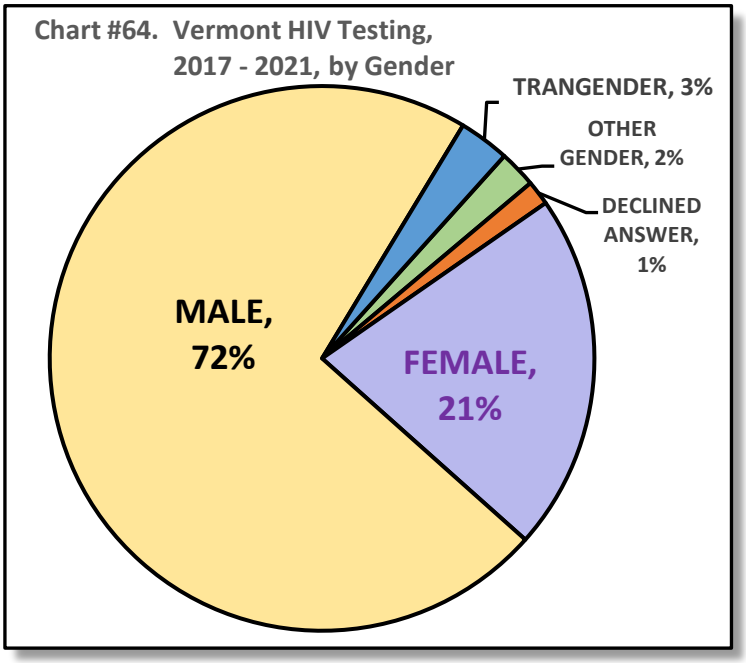


Table #24. Vermont HIV Testing, 2017 – 2021, by Gender		
GENDER	NUMBER	PERCENT
Other Gender	9	2%
Declined Answer	6	1%
Female	87	21%
Male	295	72%
Transgender	13	3%
TOTAL	410	100%

Just over half, 54% (217), were eligible for PrEP referral, and 59% (240) were referred. A large majority of 84% (339) were screened for PrEP referral.

Outcomes included a total of 5 positive results. Four of the five were interviewed for linkage to Partner Services and all were linked to care within 30 days. Given the five positive results falls in the category of *equal to or fewer than 5 individuals*, granular data is not able to be shared on these diagnoses due to VDH data suppression rules to protect confidentiality. The most that can be shared is that all were new diagnoses, and the majority were male/male-identified and non-Hispanic.

Chart #65. Vermont HIV Testing, 2017 - 2021, by Priority Population

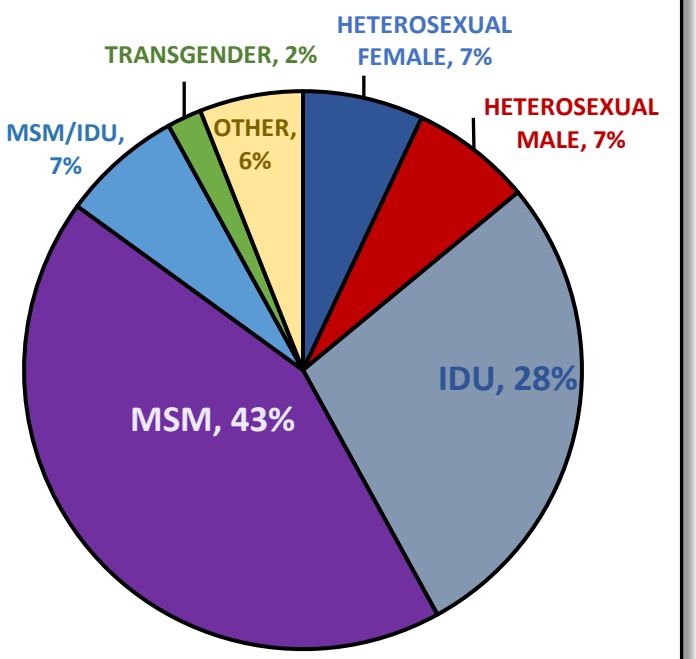


Table #25. Vermont HIV Testing, 2017 – 2021, by Priority Population

POPULATION	NUMBER	PERCENT
Heterosexual Female	29	7%
Heterosexual Male	30	7%
IDU	114	28%
MSM	176	43%
MSM/IDU	29	7%
Transgender	8	2%
Other	24	6%
TOTAL	**410**	**100%**

*Category **Other** includes Multiple Races, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander.*
*Category **Data Missing** includes Don't Know, Declined to Answer, Not Asked, Missing Data.*

Chart #66. Vermont HIV Testing 2017 - 2021, by Race

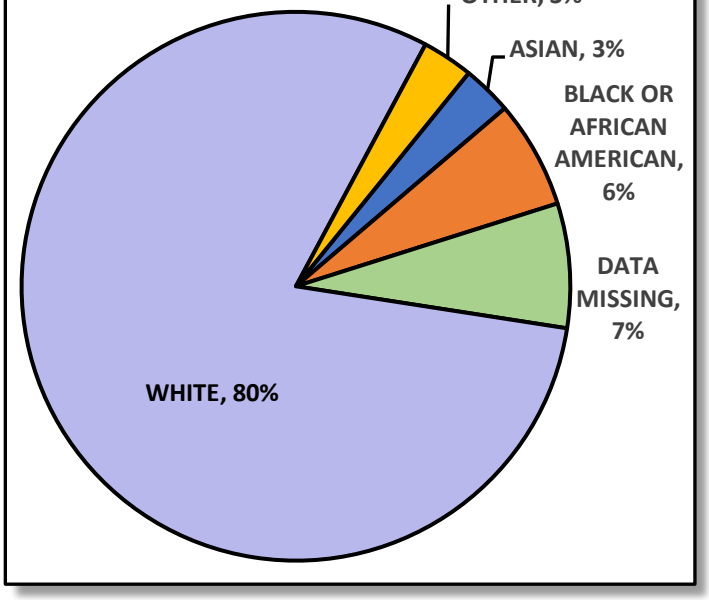


Table #26. Vermont HIV Testing, 2017 – 2021, by Race

RACE	NUMBER	PERCENT
Asian	12	3%
Black or African American	26	6%
Data Missing	30	7%
White	329	80%
Other	13	3%
TOTAL	**410**	**100%**

Almost three quarters of those tested, 72%, were male followed by 21% female. The majority of tests performed, 43%, were among the priority population of MSM, with a further 7% among *MSM with concurrent Injection Drug Use*. Just over one quarter of tests, 28%, were conducted among injection drug users. The large majority of tested individuals were White, 80% (329). Over 91%

(375) of those tested were Non-Hispanic, while 7% (30) identified as Hispanic or Latino. The majority age ranges were 35 – 65 years at 52% of tested individuals, and 20 – 29 years at 40%.

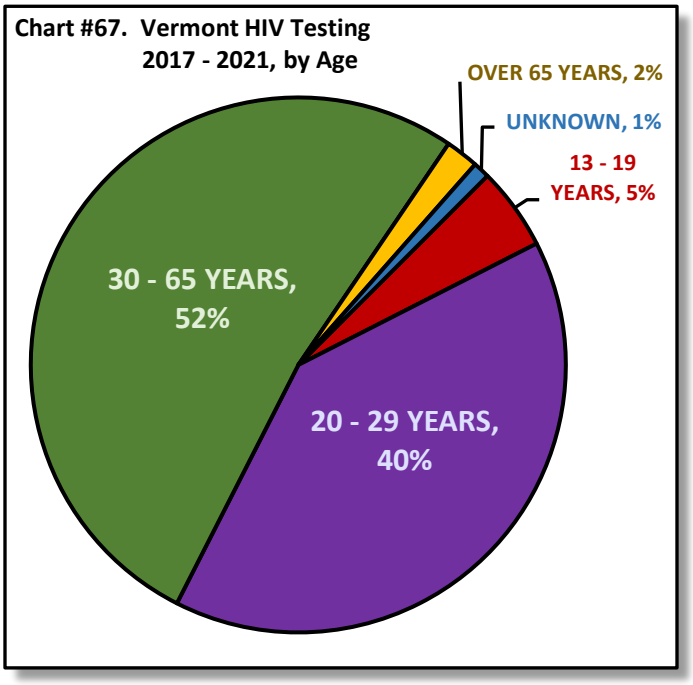


Table #27. Vermont HIV Tests 2017 - 2021 by Age

AGE	NUMBER	PERCENT
13-19 Years	21	5%
20-29 Years	166	40%
30-65 Years	213	52%
Over 65 Years	7	2%
Unknown	3	1%
TOTAL	**410**	**100%**

All funded ASOs, the Pride Center, and the Comprehensive Care Clinics provide HIV testing. VDH provides increased reimbursement incentives to community-based testers for highest-risk populations. All testing locations have reopened for service following the closures required by the COVID-19 pandemic. Additional community testing locations are currently being recruited and **24 new testers** have been trained in a Fall 2023 testing training, with more expected in a Spring training.

Pride Center is the state's only *Testing, Referral & Linkage Prime Vendor Enhanced* provider, funded to reach a target goal of testing 100 MSM per year. Pride Center began a self-testing initiative in 2021, and has worked with and modified this approach over the past two and one half years. During 2023 they made increased effort and inroads in working with other community organizations to get self-tests out into the hands of higher risk individuals beyond their immediate geographic reach. SSPs are pursuing offering testing through mobile services.

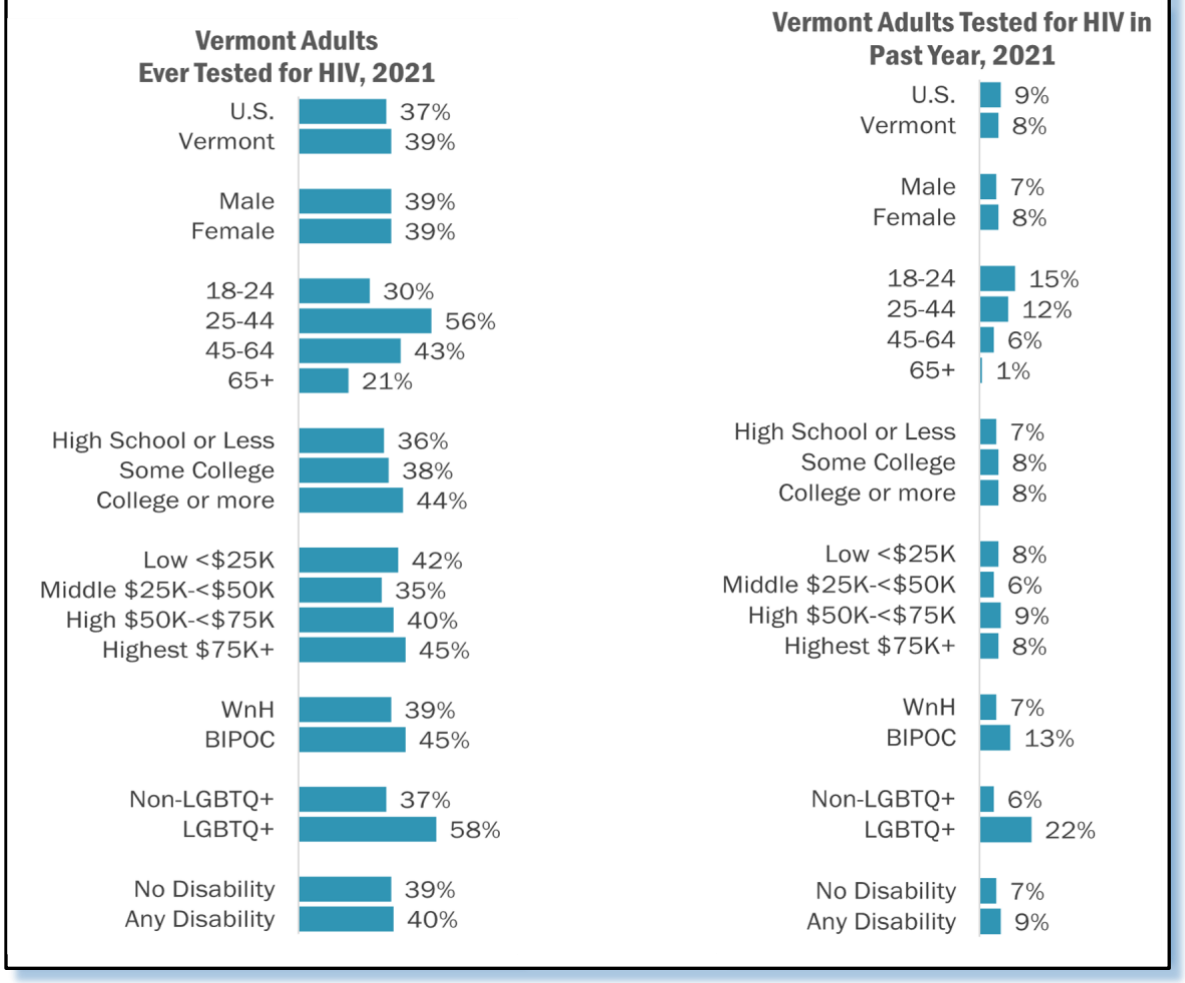
Vermont's *Year End 2022 HIV Performance to Goals Dashboard*, presenting information from VDH grantee quarterly performance reports, indicates five MSM were tested in specific grantee settings in 2022, at Pride Center of Vermont (no reactive results). A total of 47 HIV Self-Testing Kits were distributed (fewer than five reactive results).

This figure of five tests in 2022 illuminates the concerns regarding COVID impact on community programming. Comparatively, the number of tests performed by PCVT with MSM in the year ending 2019 was 97 (fewer than five reactive, fewer than five confirmed positive). In just the first quarter of 2020, 24 tests were performed (no reactive).

Demographic patterns in HIV testing for the statewide population are identified in the BRFSS data through the categories of "ever been tested" and "tested within the last year." Four in ten VT adults report *ever having been tested* for HIV (39%). That drops to 8% of adults for testing *within the past year*.

Men and women report equal numbers – 39% *ever tested*, and 7% male versus 8% female for *testing within the past year*. The age cohort of adults 25 – 44 has the highest number of *having ever been tested* (56%) but for *testing within the past year*, the 18 – 24 age cohort had the highest percentage (15%).

Chart #68. Vermont Adults Ever Tested for HIV, 2021 *and* Tested for HIV in Past Year, 2021



There were no statistically significant differences in testing behavior among levels of education and income. In both categories of *ever tested* and *tested in the last year*, BIPOC and LGBTQ+ Vermonters tested at higher rates than their counterparts. HIV testing within the past year was reported by 22% of Vermont's LGBTQ+ population.

PrEP

The *2022 HIV Performance to Goals Dashboard*, presenting VDH grantee performance measures, indicates five (5) MSM were tested in community settings in 2022, with no reactive results, of which three (3) were referred for PrEP. All three (3) referrals were accepted but there is no confirmed linkage to PrEP care.

In addition to HIV testing as a setting for PrEP referral, Pride Center of Vermont provides PrEP information and referral whenever and wherever possible – promoting PrEP and hosting a Risk Self-Assessment form on their website for people to conduct on their own analysis of risk. They provide referrals at social and educational events and work to provide a strong voice advocating PrEP in the

MSM community, as well as in the transgender and non-binary communities, where higher risk behaviors also occur.

PrEP providers in Vermont include Planned Parenthood of Northern New England; UVM Medical Center; and numerous medical practitioners around the state. Individuals interested in PrEP can find pertinent information on the VDH website, including a tool to assist in decision-making about PrEP and recommendations on speaking with their medical provider about obtaining a prescription.

All insurance policies available in Vermont cover PrEP for people who need it. Co-pays and deductibles vary from policy to policy. Some plans require the out-of-pocket deductible be met prior to paying a share of the prescription, which creates financial hardship. Vermont's Comprehensive Care Clinic is working to overcome this challenge.

At this time, VDH does not have the ability to collect and report all PrEP prescriptions for Vermont residents. The VDH Surveillance office is strategizing with other state offices on how to overcome this barrier.

PEP

HIV post-exposure prophylaxis, or PEP, is provided in VT on request in an emergency setting, to the standards of care that *PEP must be started within 72 hours after a recent possible exposure to HIV*. Health care providers and emergency room doctors can provide PEP. All community-based grantees of the VDH are well-versed in the 72-hour time frame, and when to refer people identifying potential exposure to their medical professional or an emergency room.

Condom Use

Condoms are widely available for free in Vermont, and all grantees of the VDH provide open access to a variety of types of condoms, provided to the grantees at no cost from the VDH. A brief overview of organizations distributing includes:

Table #28. Direct Condom Distribution in Vermont, Statewide

COUNTY	ORGANIZATION
Bennington, Brattleboro	AIDS Project of Southern Vermont
Burlington, South Burlington, Essex, South Hero, Winooski	Community Health Centers
Bennington, Burlington, Rutland, St. Johnsbury	Comprehensive Care Clinics
Burlington	Howard Center Safe Recovery
Lebanon, NH (Serving Orange & Windsor County, VT)	HIV/HCV Resource Center
Burlington	Outright Vermont
Burlington	Pride Center of Vermont
Berlin, Burlington, Rutland, St. Johnsbury	Vermont CARES
Barre, Brattleboro, Burlington, Rutland, St. Johnsbury, White River Junction, Williston	Planned Parenthood

These organizations work with a wide array of individuals at higher risk of transmitting or acquiring HIV, including PLWDHI, sexually active adults of all sexual orientations and gender identities, sexually active youth of all sexual orientations and gender identities, the greater LGBTQ community, and members of the community who inject drugs. Organizations distribute condoms through their fixed locations and through outreach and events. Three ASO grantees of VDH that provide Syringe Exchange Services make condoms freely available at all fixed and mobile SSP locations (AIDS Project of Southern Vermont, H2RC, Vermont CARES).

Harm Reduction

The principles of harm reduction underscore all HIV prevention and care programming in Vermont and is implemented in a variety of programs and methods. As pertains to this Epidemiologic Profile, the CDC/HRSA guidance suggests that harm reduction specific to Syringe Services Programs be the primary focus of this section.

SSPs are authorized for operation by VT state law, and all established SSPs offer free and anonymous services including syringes, supplies, overdose prevention resources, and other services in several communities around Vermont. Clients of SSPs are protected from Vermont's paraphernalia law by carrying a membership card from the SSP. Sterile syringes may be sold at pharmacies throughout Vermont without a prescription.

Vermont has four established syringe exchanges, one of which operates out of Howard Center (Safe Recovery), one of VT's Designated Mental Health agencies, based in Burlington. The other three operate out of ASOs grant-funded by VDH, including the AIDS Project of Southern Vermont, H2RC, and Vermont CARES. All three ASO SSPs have acquired vans and provide mobile exchanges as well as fixed sites. The implementation of mobile syringe exchange has allowed for much broader geographic coverage of the state.

All exchanges promote and emphasize the "nothing about us, without us" approach to Harm Reduction with individuals who use injection drugs, in which individuals with lived experience in drug use are centered in the services, work in direct outreach for agencies, and contribute to state processes operated by the VDH, e.g., the revision of *SSP Statewide Guidance*, and current information-gathering by VDH for a 2024 Legislative Report on SSP unmet needs and geographic service gaps.

All SSPs provide needs-based exchange, and Vermont's Guidance states that no Vermont SSPs will practice 1:1 syringe exchange. All SSPs support and encourage secondary distribution in which members can provide supplies to their friends and families, who may be unable or unwilling to become a member for a variety of reasons.

In 2023, AIDS Project of Southern Vermont acquired the ability to offer drug-checking services, whereby individuals can bring their substances to APSV's SSP to ascertain if the drug has been diluted with other dangerous substances (e.g., Xylazine).

The following table demonstrates how VT has expanded its Syringe Services Programming throughout the state, with more staff, expanded hours/days of operation at stationary locations, and increased mobile services.

Table # 29. Vermont Syringe Services Programs: Service Increases by Year, 2020 – 2022

SYRINGE SERVICES PROGRAMS	2020	2021	2022
Hours of Operation	2,273	7,584	9,438
Days of Operation	765	1,435	1,491
Unduplicated Individuals Served	1,575	2,400	4,118
Total Individual Visits by All Served	2,424	9,337	12,838

As the most recent completed year of service, the following table provides a selection of performance indicators for the year 2022, that demonstrate the breadth of services the state is providing.

Table #30. Vermont Syringe Services Programs Performance, Year End 2022 ***Outcome:*** *Increased access to* ***Syringe Service Programs*** *for persons who inject drugs (PWID).*	**SELECTED INDICATORS**	**YEAR END 2022**
SSP: Unique PWID served YTD [n]	**Unique PWID Served w/SSP YTD** [n]	**4118**
SSP: Unique PWID served, new to SSP [n]	**Unique PWID Served, New to SSP** [n]	**704**
SSP: All visits across all sites [n]	**All Visits/All Sites** [n]	**12,838**
SSP: Hours of Operation, all sites [n]	**Hours** [n]	**9438**
SSP: Days of Operation, all sites [n]	**Days** [n]	**1491**
SSP: PWID tested for Hepatitis C [n]	**HCV Tests** [n]	**51**
SSP: PWID tested reactive for HCV [n]	**Reactive HCV Tests** [n]	**23**
SSP: PWID served expressing readiness for MAT/SUD treatment [n]	**Members Served w/Interest in MAT/SUD TX** [n]	**223**
SSP: PWID served expressing readiness for MAT/SUD treatment, offered referral [n,%]	**PWID w/Interest in MAT/SUD TX Referred** [n,%]	**415/223 100% +**
SSP: PWID referred to PrEP [n,%]	**PWID Referred to PrEP** [n,%]	**90**

Gaps in Prevention

Prevention in rural states with low populations is challenging, in part due to increased overhead cost for small return, when "return" is defined as number of people reached who can provide reliable feedback on demonstrated change in higher risk behaviors. Past efforts with Mpowerment in the southern part of the state were successful, and other DEBIs – for MSM, testing, women of color, Prevention with Positives – have been implemented throughout the state with varying levels of success.

As new DEBIs were approved, VDH worked to find programs that would fit the state, when the majority of DEBIs were researched, created, and intended to be operated in urban areas. Low population/low incidence means VT faces a lack of resources to provide direct outreach prevention services in the entire state. As scientific advancements and new tools brought about the ongoing shift to biomedical prevention, the few behavioral interventions VT had been able to adapt were de-emphasized, funding could not be maintained to continue to run them at full capacity, and they closed. The Burlington Mpowerment Program is the latest of these that will be restructured next year.

The gap left is consistent, widespread prevention outreach to GB &TNB MSM throughout the state, the population that is the primary locus of new infections. However, with small population spread over a rural geographic area, there is no easy answer.

Tools such as PrEP, Syringe Services Programs and Treatment-as-Prevention bring needed tools into the hands of those most at risk, and transitioning to stronger statewide distribution is a goal present throughout VT's most recent *Integrated HIV Prevention and Care Plan, 2022 - 2026*. Focusing on the biomedical models, as VT has done in recent years, is a concentration of what resources are available to VT that will serve the risk populations best, as the state's service delivery continues to grow and be refined. The wide coverage SSPs are bringing to that priority population is needed and the services are thriving and growing.

VT would like to fill all gaps in prevention, including direct prevention outreach to MSM statewide and increased MSM HIV testing. VT is utilizing planned resources to address gaps through increasing reach to a wider population statewide with all of the tools biomedical prevention provides – increasing testing, PrEP uptake among MSM, Treatment-as-Prevention, and furthering the expanding work of the SSPs.

⇒ **CORE QUESTION 4.2**: What are the indicators of risk for acquiring and transmitting HIV infection in Vermont?

The epidemiology of HIV transmission in Vermont demonstrates the primary population at risk are men who have sex with men, and the primary indicators of HIV risk include 1) *higher risk male-to-male sexual contact* at 53% of transmission, and to a lesser extent, 2) *intravenous drug use* at 10% of transmission. A further 6% of transmission is accounted for by the category of *MSM with concurrent IV drug use*, increasing the overall percentage for the categories of sexual transmission and injection drug transmission to almost three quarters of total cases, at 69%.

Comprising approximately 18% of Vermont's HIV cases, women's primary risk factor identified through surveillance is the "Other" category, at 47% (60 cases), followed by *heterosexual contact* at 31% (40 cases), and *IDU* at 22% (29 cases). However, data from the 2021 RWHAP Annual Client Level Data Report indicates that 65 of 88 VT women treated were reported as *heterosexual contact* transmission.[96]

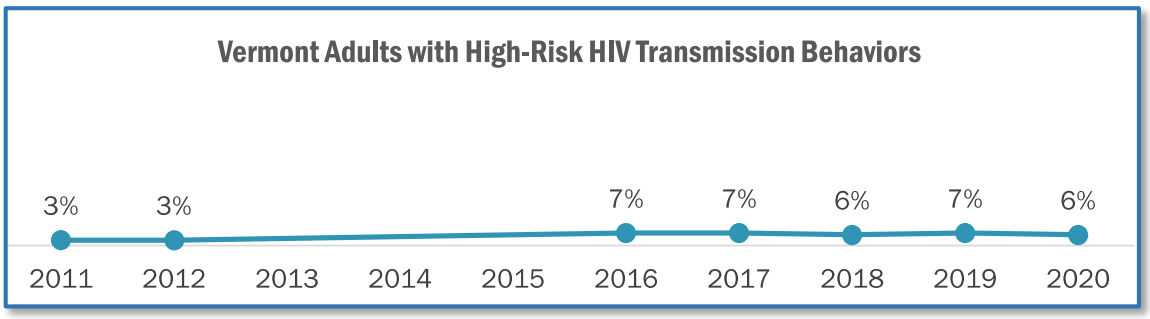
Other indicators of risk in Vermont include substance use levels, including high rates of injection drug use, and LGBTQ+ health disparities.

The 2019/2020 BRFSS reported the general VT adult population's HIV transmission risk, but HIV risk questions were not included in the 2021 BRFSS, leaving the following data as the most current.

- 6% of VT adults report participating in a high-risk behavior for HIV during the past year, the **same rate** as all U.S. adults. High-risk behaviors in the BRFSS interviews included any of the following:
    - Injection drug use,
    - treatment for a sexually transmitted or venereal disease,
    - gave or received sex for drugs or money, and
    - anal sex without a condom.
- Men and women report statistically **similar rates** of participation in a high-risk behavior for HIV.
- Younger adults are **more likely** to participate in high-risk behaviors for HIV.
- LGBTQ+ adults are **four times more likely** to participate in high-risk behaviors for HIV.

While participating in risk behaviors has remained the same as 2019, it has increased since 2011. The percentage doubled from 3% to 6%. However, the impression of "doubling" should be viewed with care, given a small number of people can have a large impact on percentages this low.

Chart #69. Vermont Adults with High Risk HIV Transmission Behaviors, 2011 – 2020



[96] Ryan White HIV/AIDS Program Annual Client-Level Data Report 2021. Published December 2022. Health Resources and Services Administration. ryanwhite.hrsa.gov/data/reports.

Substance Use & Addiction

Substance use is well-recognized as a risk factor for HIV transmission on multiple levels. Substances impair both decision-making ability and inhibitions. Addiction can drive associated risk behaviors such as trading sex for drugs or money and sharing injection equipment if using injection drugs. Substance use involving alcohol and marijuana in VT is higher among populations at increased risk for HIV, including LGBTQ+ and BIPOC communities.

VT has some of the highest rates in the nation of substance use and abuse, including alcohol (and binge drinking), marijuana, cocaine and heroin, according to the *National Survey on Drug Use and Health* 2019 – 2020.[97] However, due to methodological changes in 2021, the NSDUH states that estimates from the 2021 report should not be compared with previous years. No substate reports for the NSDUH 2021 were available at the time of this writing.

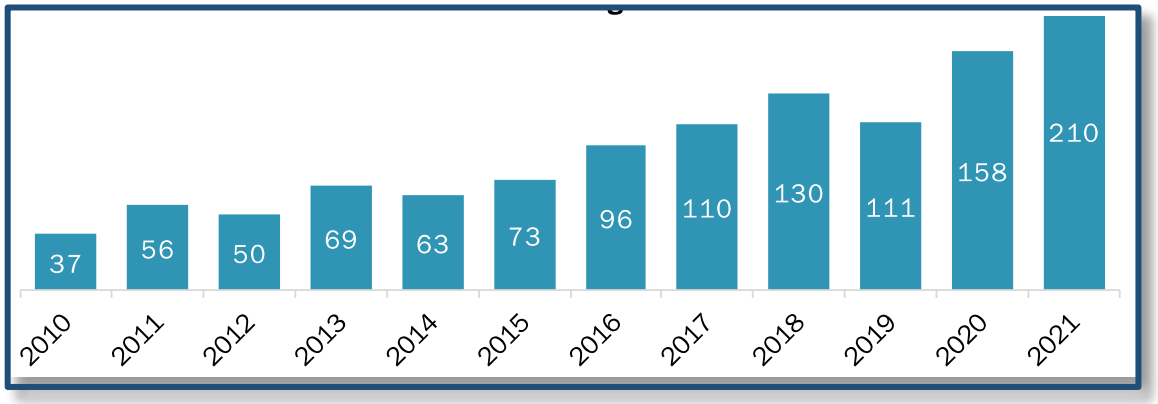
Opioids

VT has one of the highest reported rates of heroin use in the US, but the rate is statistically similar to both the US, and the rest of the Northeast region, 0.4% for those 18 – 25 years of age and 0.8% for ages 26 and over. Just under one percent of Vermonters (0.8%) represents over 5,500 individuals. The risk for HIV infection among the community of those who inject and use other drugs is of great concern, with the HIV outbreaks and clusters seen in the past decade in other states.

VT is struggling with a high rate of fatal drug overdose. The large majority of these fatal overdoses involve opioids. Of the 236 fatal non-suicide drug overdoses among VT residents in 2021, 89% involved opioids. The remaining 11% involved stimulants, alcohol, huffing or prescribed medications. The 2021 opioid-related accidental and undetermined fatal overdose data from BRFSS showed a **33% increase**, with 158 deaths in 2020, and 210 in 2021.[98]

Heroin involvement in fatal opioid overdoses decreased from 25% in 2020, to 10% in 2021, with fentanyl rising in its place. Fentanyl was involved in 93% of opioid-related deaths in 2021. Cocaine was involved in 48%, and methamphetamine in 10%. **Chart #70** provides a 12-year look at VT's jarring rise in fatal overdoses involving opioids, from 37 deaths in 2020, to 210 deaths in 2021.[99]

Chart #70. Vermont Resident Accidental & Undetermined Opioid-Related Fatal Overdoses, 2010 - 2021



[97] *National Survey on Drug Use and Health, 2019/2020.*
[98] Ibid
[99] BRFSS

However, *The Vermont Social Autopsy Report: 2021 Data Analysis* indicates the final number of deaths of an overdose in 2021 was higher, at 231 deaths.[100] The VSAR offers the overall demographics of those lost in 2021.

In descending order, the five most common drugs, and the five most common drug combinations, of Vermonters who died of an overdose in 2021 were:[101]

Table #31. Five Most Common Drugs & Drug Combinations Among VT Overdose Deaths, 2021	
Individual Drug	**Drug Combination**
1. Fentanyl (83%)	1. Fentanyl and Cocaine (41%)
2. Cocaine (45%)	2. Fentanyl and Prescription Opioids (15%)
3. Prescription Opioids (excludes Fentanyl) (20%)	3. Fentanyl and Alcohol (13%)
4. Alcohol (16%)	4. Fentanyl and Xylazine (13%)
5. Xylazine (13%)	5. Fentanyl and Heroin (10%)

Additional social determinants of health data reviewed in the *Social Autopsy Report* provides context to the lives of those lost, and highlights risk factors that contribute to SUD that were present:

- Mental health conditions: About half of people who died had mental health condition
- High Medicaid enrollment: About two thirds (68%) were enrolled in Medicaid within 90 days of their death.
- Homelessness: More than half (53%) of the people who died of an overdose in 2021 had ever received homelessness services. One in five (20%) had received homelessness services in the six months prior to their death.
- Employment: Of the 200 people who died who were in the Vermont Department of Labor database, less than half (43%) were employed in the year before their death, and fewer (38%) were employed in the six months before they died.
- Income: Income was lower for people who died of an overdose than the general population.

It is evident that people who died of an overdose were likely to have long-term needs including extensive housing instability.

- *Vermont Social Autopsy Report: 2021 Data Analysis*

The Social Autopsy Report also identified the demographic disproportionately represented in overdose deaths from year to year as *White Non-Hispanic males aged 25-44, unmarried or divorced/separated, with high school education or less* (25% of all those who died in 2021).

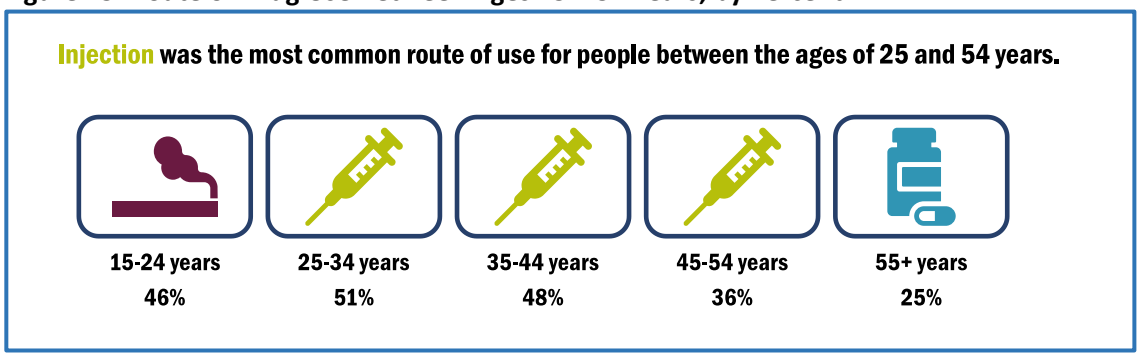
The state data brief ***Fatal Overdoses in Vermont by Age and Circumstance*** of August 2023 provides retrospective data and also brings in partial 2022 data as well.

As of September 2023, Vermont's State Unintentional Drug Overdose Reporting System (SUDORS) determined that between January 2019 and June 2022, there were 635 accidental or undetermined fatal overdoses in Vermont among people aged 15 or older. SUDORS does not include deaths determined to be suicides.

[100] *Vermont Social Autopsy Report: 2021 Data Analysis.* Vermont Department of Health. Released August 2023, updated September 2023.
[101] Ibid.

Pertinent to HIV risk is the fact that injection was the most common route of use for the majority of those who died of an overdose in the 42-month time span summarized by the brief.[102]

Figure #5. Route of Drug Use Between Ages 25 – 54 Years, by Percent



Alcohol

Alcohol is the most common substance used among Vermonters.[103] Vermont has had historical high rates of alcohol consumption, and for 2023, ranked as the **second state in the nation**, behind New Hampshire, for highest alcohol consumption per capita.[104] Lest this finding be interpreted as an artifact of state size and small population, it should be noted that a prime factor of commonality among the top ten states is their rurality, as opposed to their size and population numbers (including Nevada, though it is not often recognized as being a largely rural state).

BRFSS reports that overall alcohol consumption in the past month (61%) and heavy drinking (9%) are reported at statistically higher rates in VT versus U.S. adults nationwide (52% and 6%, respectively).[105] "Heavy drinking" in this context is defined as greater than 8 drinks per week for women, and greater than 15 per week for men. Geographically, alcohol use is equivalent around VT.[106] General alcohol use has ranged between 61% and 65% over the past ten years.

Vermont older adults report using alcohol at higher rates than the US as a whole. More than half of Vermont adults ages 65 and older report drinking alcohol (54%).[107] These rates have been consistent over the past ten-year period of 2011 – 2021, and older adults who visited the doctor in the last two years are less likely to be asked about alcohol use and offered advice about harmful drinking levels than younger adults. Older adults who use cannabis are more likely to report at-risk drinking (three or more drinks per occasion for men, and two or more for women) and chronic drinking (two drinks per day for men, one drink for women).[108]

Binge drinking (17%) in Vermont is statistically similar to the national average (15%). Vermont adult men are more likely to use alcohol then women (65% versus 58%), and more likely to binge drink (20% versus

[102] Fatal Overdose in Vermont by Age and Circumstance. August 2023. Information Brief. Vermont Department of Health.
[103] VDH Data Brief: Alcohol-Related Deaths. State level data from the National Survey on Drug Use and Health. 2019-2020. Vermont Department of Health.
[104] Alcohol Consumption by State. WiseVoter.com. https://wisevoter.com/state-rankings/alcohol-consumption-by-state/. Accessed December 2023.
[105] BRFSS.
[106] BRFSS.
[107] VDH Data Brief: Alcohol Use Among Older Adults. 2021 Behavioral Risk Factor Surveillance System. April 2023.
[108] Ibid.

14%). Binge drinking correlates strongly with age, with adults in the 18 – 24 and 25 – 44 age cohorts reporting higher rates than older Vermonters, approximately twice as much as adults 45 – 64 and three times as much as those 65 and over.

Adults aged 25 – 44 report the highest rates of drinking, at 71%, and the highest rate of heavy drinking at 13%. The next highest age cohort in both categories as the 45 – 64 years, at 61% and 8% respectively. Heavy drinking is reported at similar rates among men and women (8% and 9% respectively).

General alcohol consumption in Vermont correlates with education and income to a statistically significant degree, with alcohol use increasing along with higher levels of education and higher income. LGBTQ+ adults have higher rates of binge drinking than non-LGBTQ+ populations while differences in "any alcohol consumption" and "heavy drinking" were not statistically significant for this population.

From an HIV risk factor perspective, points of interest include the higher levels of binge drinking among VT's LGBTQ+ population, and high consistent rates among older Vermonters. State surveillance data confirms that Vermont's PLWDHI population skews to an older age range and similar risk factors may extend into older individuals in the HIV positive population. Binge drinking reflects a concern from the perspective of sexual risk, given compromised decision-making under the influence. A younger LGBTQ+ population drinking more in single settings raises this concern. In addition, while LGBTQ+ levels of drinking matched that of non-LGBTQ Vermonters (60% LGBTQ+, 61% non-LGBTQ+) Vermont's higher than national-average rates reflects on the VT LGBTQ+ population as well, with its attendant concerns and effects across the age cohorts.

The VDH Data Brief specific to alcohol and older adults notes important data regarding doctor advisement, which may be extrapolated to PLWDHI. The finding of concern is that in Vermont, older adults who visited the doctor in the last two years are less likely than younger adults to be asked about their alcohol use and offered advice about what level of drinking is harmful (72% vs. 90% and 19% vs. 34%, respectively).

The finding that presents ameliorating data is that Vermont adults 65 and older with obesity, cardiovascular disease (CVD), and diabetes are less likely than those without these conditions to participate in at-risk drinking. The data brief notes that this may suggest that those with obesity, CVD, and diabetes are receiving advice from their doctor or other sources that alcohol consumption should be limited due to their chronic condition. At-risk drinking is also lower among older adults who take prescribed medications for pain, sleep, or anxiety than those who do not, at 21% vs. 25%.[109] Chronic drinking, however, is the same (5%) in older adults taking those medications and those who do not.

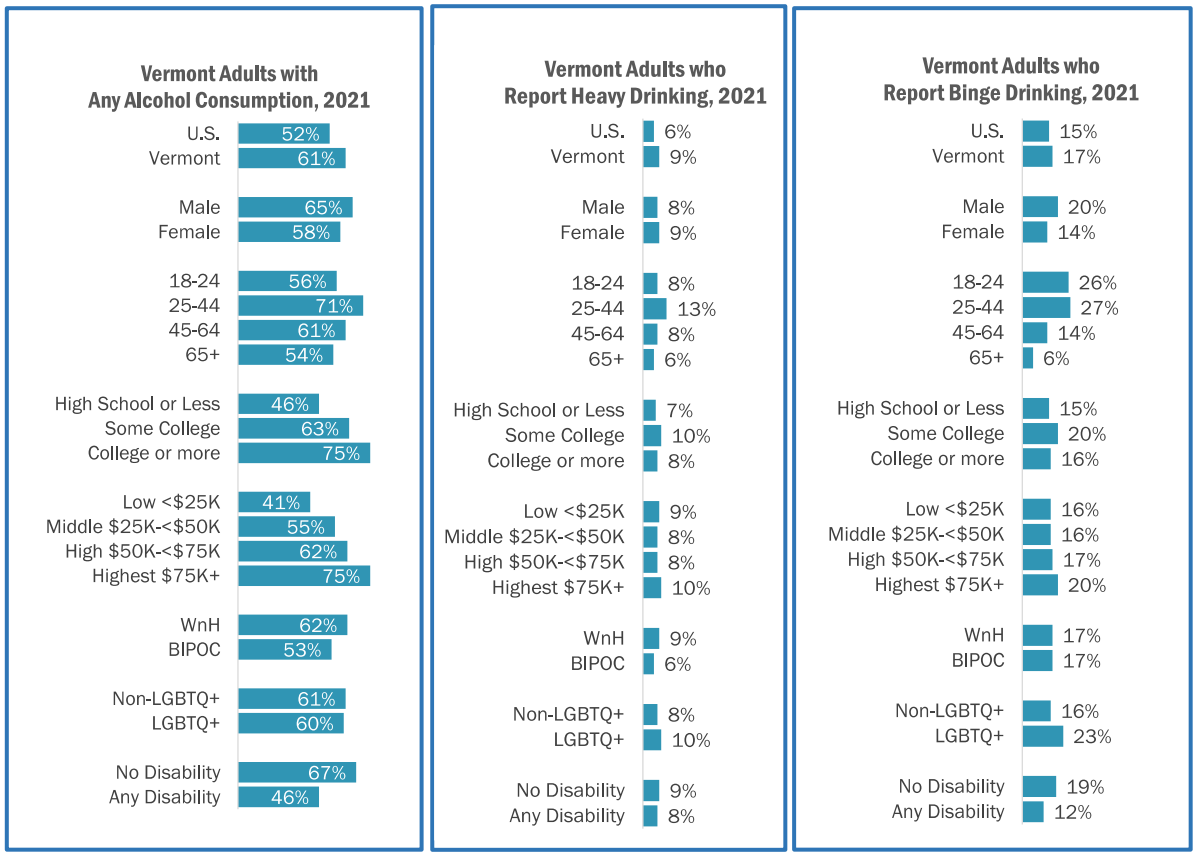
Given the status of HIV as a chronic condition that emphasizes regular (at least annual) medical care appointments, it may be extrapolated from the above data that older PLWDHI may well be receiving inquiries and advice regarding alcohol use. Both older adults who report at-risk and chronic drinking are more likely to be asked about their alcohol use and offered advice about what level of drinking is harmful, compared to those who do not report at-risk or chronic drinking.

A second VDH Data Brief, *Alcohol-related Deaths Among Vermonters, January 2023*, provides additional information, reviewing data from a study in the *Journal of the American Medical Association (JAMA) Network Open* of 2022, by researchers at the Centers for Disease Control and Prevention (CDC) and the

[109] VDH Data Brief: Older Adults and Alcohol. 2023.

Canadian Institute for Substance Use Research. The study found that in the United States as a whole, an estimated one in five deaths among adults aged 20-49 years is due to excessive alcohol use. The brief notes that comparatively, in Vermont, "excessive alcohol use" is associated with nearly one in four deaths (24.7%) among people aged 20-34 and one in five (19.3%) of those aged 35-49.[110] In keeping with the previous data regarding VT's national ranking in alcohol consumption, the study found that between 2019 and 2020, alcohol-induced deaths were higher, and increasing more rapidly, in rural areas than in urban areas.[111]

Chart #71. Vermont Adult Alcohol Consumption: Any Consumption, Heaving Drinking & Binge Drinking



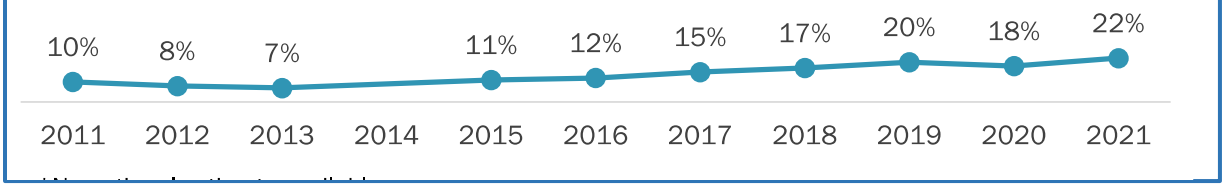
Marijuana

Marijuana/Cannabis presents risks of compromised decision-making, as does alcohol. Vermont has legalized marijuana possession in **Statute § 4230a** which states *"a person 21 years of age or older who possesses one ounce or less of cannabis… or possesses paraphernalia for cannabis use shall not be penalized or sanctioned in any manner"* among other allowances.[112] Vermont also allows medical marijuana, of which some Vermont PLWDHI do avail themselves if they have need, and a physician willing to issue the prescription.

[110] VDH Data Brief: Alcohol-Related Deaths Among Vermonters. January 2023.
[111] VDH Data Brief: Alcohol-Related Deaths Among Vermonters. January 2023. For this analysis, only the combined Chittenden/Franklin/Grand Isle Counties were categorized as urban. The other 11 Vermont counties were considered rural.
[112] (a)(1) Except as otherwise provided in this section, a person 21 years of age or older who possesses one ounce or less of cannabis or five grams or less of hashish and two mature cannabis plants or fewer or four immature cannabis plants or fewer or who possesses paraphernalia for cannabis use shall not be penalized or sanctioned in any manner by the State or any of its political subdivisions or denied any right or privilege under State law.

Data from the *NSDUH 2017-2018* reported VT's average past-month marijuana use in ages 12+ at 19%, among the highest in the nation and 50% higher than both the Northeast region and the U.S., which both report 10%. The latest NSDUH state subreports were not available at the time of this writing.

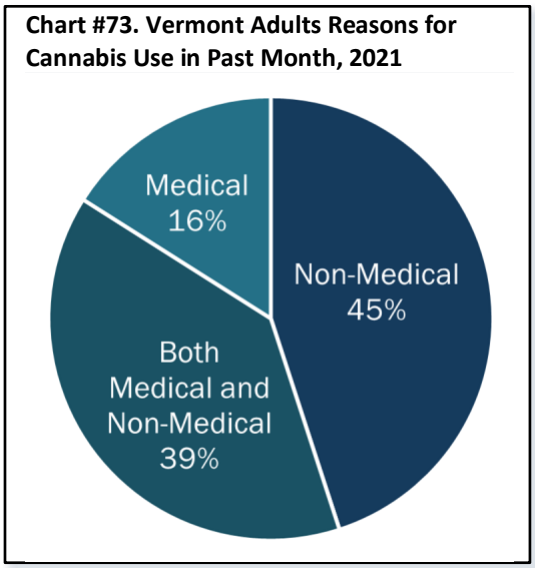
Chart #72. Vermont Adults Current Cannabis Use, 2011 - 2021



The 2021 BRFSS data recorded 22% of VT adults reporting current use of marijuana. Due to the varying legality of marijuana across the states, there is no comparative U.S. figure to assess. Men are more likely to use than women, and use is highest among younger adults aged 18 – 24, followed by ages 25 – 44. Rate of use dropped with age, from 36% among ages 18–24, to 8% among ages 65+.[113]

National data indicates more Vermonters ages 12 and up are using cannabis compared to the country overall. The number of Vermonters who try cannabis for the first time between the ages of 12 and 17 is also higher in the state than in the country overall.[114]

Chart #73. Vermont Adults Reasons for Cannabis Use in Past Month, 2021



Marijuana use is statistically higher among Vermonters with less education and lower income. The LGBTQ+ community reports higher use than non-LGBTQ+, almost twice as much. Use among VT adults with a disability has not varied from the previous year (23% in 2020 and 24% in 2021), but the rate of adults with no disability has risen 6%, from 16% to 21%, narrowing the statistical difference between the two groups.

Nearly half of VT adults using marijuana in the past month say it is for non-medical reasons (45%), with fewer than one-fifth (16%) reporting use for mainly medical reasons. A total of 39% percent of VT adults reported both medical and non-medical use.[115]
There are many roles marijuana can take in communities with higher rates of HIV and higher risk – such as MSM and People Who Use Drugs – as prescribed medicine and a harm reduction tool. However, the fact remains that substances that affect coherent decision-making increase the risk of sexual transmission of HIV.

LGBTQ+ Health Disparities

Data specific to LGBTQ+ health and welfare in the state of Vermont is available through the state's BRFSS results, and these results have been reviewed in a number of places within this profile. On a broader scale, however, the overall health disparities faced by sexual and gender diverse (SGD)

[113] BRFSS 2021.
[114] VDH website. https://www.healthvermont.gov/alcohol-drugs/by-substance/cannabis
[115] BRFSS.

populations provide important context for the epidemiological review of HIV anywhere in the US, and for Core Question 4.2, regarding the risks for acquiring and transmitting HIV. As more research is conducted and findings are disseminated, it is important to place the SGD population of Vermont within this larger context.

Understanding the Well-Being of LGBTQI+ Populations, a publication from the National Academies of Sciences, Engineering, and Medicine released in 2020, summarizes the complications that can affect the health and well-being of SGD populations. In doing so, it emphasizes that these health disparities are not related to "intrinsic personal characteristics related to sexual orientation, gender identity, or intersex status," and there is "no innate disorder associated with being an SGD individual." Rather, these disparities are driven by societal forces and experiences of minority stress. [116]

Chart #74. Vermont Adults Using Cannabis, 2021, Demographic Profile

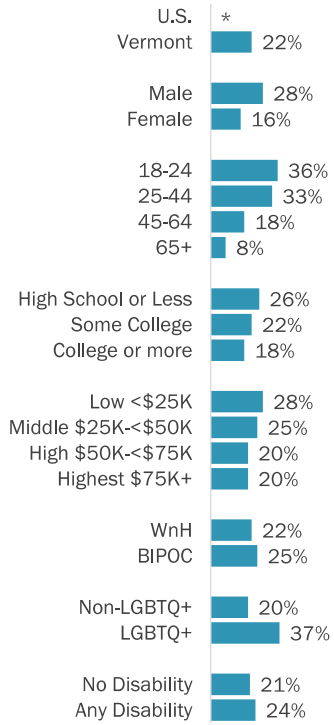
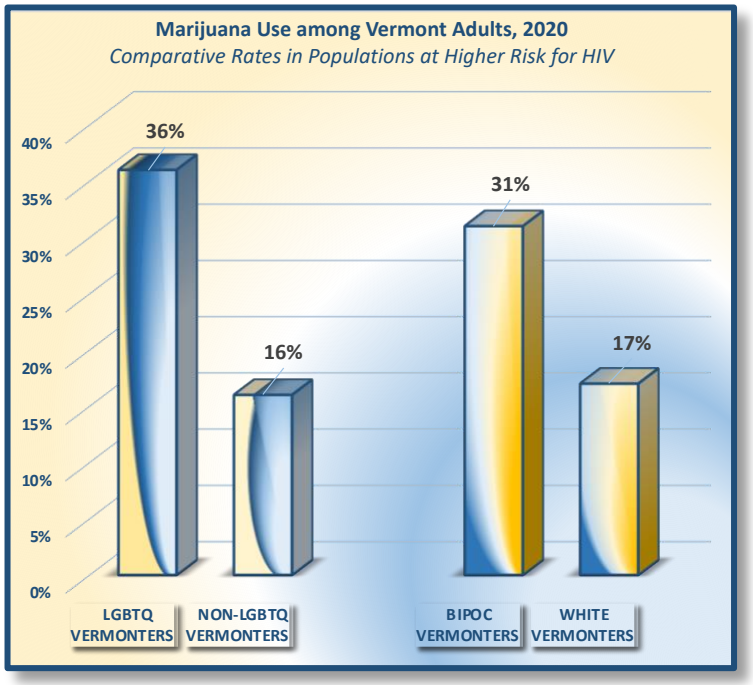


Chart #75. Vermont Adults Marijuana Use, 2020: Populations at Higher Risk for HIV



> "Studies of general health and well-being have revealed that LGBTI adults tend to report worse health, lower health-related quality of life, and greater prevalence of disabilities than non-LGBTI people. The physical and mental health of SGD populations… is substantially affected by external influences that include discrimination, stigma, prejudice, and other social, political, and economic determinants of health. The associations between stress, stigma, social determinants of health, and health outcomes hold across multiple health conditions."[117]

[116] Ibid.

[117] "11. Physical and Mental Health." *Understanding the Well-Being of LGBTQI+ Populations*. National Academies of Sciences, Engineering, and Medicine. 2020. Washington, DC: The National Academies Press. doi: 10.17226/25877.

A much larger body of research is now available and this publication provides a thorough meta-analysis of a large variety of studies and sources. For the purposes of this Epidemiologic Profile specific to HIV, a review of selected conclusions pertaining to the *Physical and Mental Health* of SGD populations provides the context sought.[118]

- "In comparison with heterosexual and cisgender populations, SGD populations have **less favorable overall health** and **higher rates of cardiovascular disease, certain cancers, exposure to violence, and HIV and other STIs**."
- "Stigma, violence, and discrimination… [lead to] **higher rates of HIV/STI risk behavior** and reduced access to and engagement in prevention (e.g., pre-exposure prophylaxis, condoms) and care services (e.g., anti-retroviral therapy)."
- **"Reduced access to protective structural assets**, such as stable housing, employment opportunities, and affirming health care, are some of the mechanisms linking stigma to HIV/STI disparities for LGBT populations."
- "[T]here are **notable gaps in research** on interventions that address the influences of stigma, discrimination, and intersectional minority stress."
- "Numerous studies show that LGBTQ people experience **high rates of violence and victimization…** [including] structural violence, such as exclusion and **discrimination in health care**, employment, education, public accommodations, and other areas of everyday life."
- "Existing data…suggest… the **incidence of certain cancers may be elevated** in specific LGBTI populations. These include, for example**, anal cancer in gay and bisexual men**... Evidence also indicates that access to cancer-related preventive services is lower in LGBT populations… often associated with systemic barriers, which include **provider misinformation** and **previous patient experiences with and fear of medical maltreatment**, which results in reluctance to seek care."

Regarding mental health and substance use:[119]

- "Mental health disparities in SGD populations include **heightened anxiety and depressive symptoms** and **greater suicidality** among LGBT people as compared to heterosexual or cisgender individuals."
- "LGBT adults are at higher risk than non-LGBT adults for mental health problems, such as **depression, anxiety, anorexia nervosa, and bulimia nervosa**."
- "Substance use and behavioral health disparities include **greater use of tobacco, alcohol, and other drugs among LGBT people** than among heterosexual or cisgender individuals."
- "In a nationally representative study using data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), sexual minorities were at **substantially higher risk of severe alcohol use disorder** than their heterosexual counterparts, and higher levels of sexual orientation discrimination increased the odds of alcohol use disorder in sexual minorities."

[118] Ibid.
[119] Ibid.

Appendices

Appendix A. List of Figures, Charts and Tables

APPENDIX A. LIST OF FIGURES, CHARTS & TABLES

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