## Hanover County, Virginia

# 2023-2024 Community Health Assessment

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## **Executive Summary**

In 2017, the Hanover County Community Health Assessment (CHA) was completed, which was followed by the 2018-2022 Hanover County Community Health Improvement Plan (CHIP). The CHA/CHIP process provided quantitative and qualitative health information to show various factors influencing the health and well-being of the community. The purpose of this document is to provide updated data on several health indicators, as well as provide new information that expands on the priorities identified in the CHIP, while sharing emerging health topics.

In 2023, Hanover County was ranked 15<sup>th</sup> out 133 jurisdictions in Virginia for their health outcomes, according to County Health Rankings & Roadmaps. This means Hanover County is ranked among the healthiest counties in Virginia (part of the 75%-100% percentile). The 2023 ranking is an improvement for Hanover County compared to the 2017 ranking (19th).(1) Each year, County Health Rankings & Roadmaps updates many of the metrics used to calculate the health outcomes and rankings. This document includes many of the same indicators along with additional factors and characteristics, in order to show a more detailed picture of the community's health status and health factors.



## **Quantitative Data**

## **Demographics**

## **Total Population**

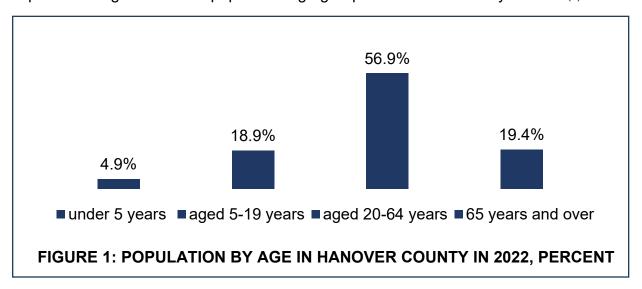
A total of 112,938 people live in Hanover County based on the U.S. Census Bureau population in 2022.(2) This shows an increase in population size by about 8% when compared to 2016, which had approximately 104,392 people residing in the county. It is estimated that 39% of the community is rural, which is mainly in the western part of Hanover County.(3)

## Race and Hispanic Origin Identity

As of 2022, those who identified as Non-Hispanic, White represented 96,276 (82.3%) of the county; Non-Hispanic, Black residents represented 10,486 (9.6%); Hispanic residents represented 4,090 (3.6%); Asian residents represented 2,576 (2.3%); and American Indian and Alaskan Native residents represented 388 (0.5%). There was a slight increase in the Hispanic population living in the county (0.7%) compared to the 2017 Hanover CHA report (2.9%). Other racial and ethnic identities remained the same.(4)

#### Age

As of 2022, 5,540 (4.9%) of the population was comprised of children under the age of five, and 21,240 (18.9%) were between the ages of 5-19 years old. Community members between the ages of 20-64 represented 56.9% (64,250 people), and residents aged 65 and older represented 19.4% (21,908 people). There was no significant change in the population's age group distribution when compared to the 2017 Hanover CHA report. See Figure 1 for the population age groups in Hanover County in 2022.(5)



## **Disability**

This indicator reports the percentage of the total civilian non-institutionalized population with a disability. In Hanover County, 11,904 (11%) of persons are reported to have a disability. This indicator is important because persons with disabilities require targeted services and outreach by providers. Among the population age 65 or older the County, 30.4% have a disability. There is no noticeable change to the percentages of the population with a disability in the county compared to the 2017 Hanover CHA report.(6)

## **Health Outcomes**

## **Length of Life**

#### **Premature Death**

Years of potential life lost (YPLL) before age 75 per 100,000 people (age-adjusted) is calculated by subtracting the age of death from the 75-year benchmark. YPLL is a widely used measure of the rate and distribution of premature death. Measuring premature death, rather than overall mortality, focuses attention on deaths that might have been prevented. In Hanover County, 6,200 years of life were lost on average between 2018-2020. This is less than Virginia's YPLL (6,700) and the U.S. (7,300 years) during that same timeframe. This means Hanover County experienced less premature death when compared to Virginia and U.S. rates.(7)

## **Infant Mortality**

This indicator reports the three-year average rate of infant deaths per 1,000 live births of Virginia residents from 2018 to 2020. Infant mortality is defined as deaths of children under one year of age. Between the years 2018-2020, the infant death rate was 5.3 per 1,000 live births in Hanover County compared to 5.8 per 1,000 live births in Virginia.(8) The leading causes of infant death include: birth defects, preterm birth and low birth weight, sudden infant death syndrome (SIDS), injuries (e.g., suffocation), and maternal pregnancy complications. High rates of infant mortality indicate the existence of broader issues, as well as potential barriers to accessing maternal and child health care.

## **Maternal Mortality**

This indicator reports the three-year average rate of maternal deaths per 100,000 births by Virginia residents from 2018 to 2020. Maternal death is defined as deaths of the mother during pregnancy and up to 42 days postpartum that are related to pregnancy. Between 2018-2020, the maternal mortality rate was 35 per 100,000 people in Hanover County compared to 48 per 100,000 people in Virginia.(9) The leading causes for maternal mortality include a health condition getting worse during pregnancy/due to the pregnancy, a pregnancy complication, or intervention provided during pregnancy. Maternal mortality could be prevented by through the mother incorporating healthy lifestyle habits, early and high-quality prenatal care, and early recognition and management of potential complications (e.g. high blood pressure).

## **Top Five Leading Causes of Death**

According to the National Vital Statistics System, between 2018-2021, the top five leading causes of death in Hanover County for all ages were: cancer, heart disease, accidents (unintentional injuries such as poisonings, motor vehicle crashes, falls, fire, drowning, and suffocation), cerebrovascular diseases, and Alzheimer disease. Table 1 shows the crude mortality rates for the top five causes of death for the 4-year period 2018-2021.(10)

Table 1: Leading Causes of Death in Hanover County Between 2018-2021(10)

Leading Causes of Death (All Ages)	Mortality Rate Per 100,000 People
Malignant Neoplasms (Cancer)	207.88
Heart Disease	200.98
Accidents	52.89
Cerebrovascular Diseases	52.66
Alzheimer Disease	43.00

The top five leading causes of death in Hanover County between 2018-2020 for those under the age of 75 were: 1) cancer; 2) heart disease; 3) accidents; 4) intentional selfharm; and 5) chronic lower respiratory diseases.(11)

#### **Cancer Mortality Rate**

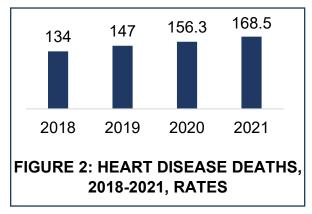
This indicator reports the 2016-2020 five-year average rate of death due to malignant neoplasm (cancer) per 100,000 people. In Hanover County, the crude-death rate per 100,000 people was 202.0, which is a higher rate than Virginia (178.2) and the U.S. (183.5).

Based on 2016-2020 Virginia Cancer Registry data, the top five leading causes of cancer mortality in Hanover County were: lung and bronchus cancer (36.4 per 100,000 people), colon and rectum cancer (14.4 per 100,000 people), breast cancer (11.7 per 100,000 people), pancreas cancer (10.4 per 100,000 people), and leukemia (7 per 100,000 people). When the overall cancer mortality rates are broken down by race, the Black population showed higher rates compared to the White population in Hanover County (185.4 versus 148 per 100,000 people, respectively).

Among the male population in Hanover County, lung and bronchus cancer (40.3 per 100,000 people) as well as colon and rectum cancer (16 per 100,000 people) contributed to the highest mortality rates. Among the female population, lung and bronchus cancer (33.2 per 100,000 people) and breast cancer (20.9 per 100,000 people) contributed to the highest mortality rates.(12)

## **Leading Causes of Chronic Disease Death**

In 2021, the leading cause of chronic disease deaths in Hanover County were heart disease (168.5 per 100,000 people), followed by cerebrovascular disease (stroke) (34.9 per 100,000 people), diabetes (14.9 per 100,000 people), and hypertension (9.1 per 100,000 people). As shown in Figure 2, heart disease mortality rates have steadily increased from 134 per 100,000 people in 2018 to 168.5 per 100,000 people in 2021.(13)



## **Quality of Life**

#### **Diabetes Prevalence**

Based on 2020 Diabetes Behavioral Risk Factor Surveillance System (BRFSS) data, 8% of adults aged 20 and above have been diagnosed with diabetes in Hanover County. Hanover County (8%) has a slightly lower prevalence of diabetes than Virginia (10%) and the U.S. (9%). There is no noticeable change within this measure since the 2017 Hanover CHA report.(14)

#### **Human Immunodeficiency Virus (HIV) Prevalence**

As of 2020, in Hanover County, 134 of every 100,000 people, ages 13 and older, are living with a diagnosis of HIV. This is lower than the rate in Virginia (331 per 100,000 people) and the U.S. (380 per 100,000 people). The prevalence of HIV can serve as a marker for communities where there is unsafe intravenous drug use, unsafe sex, lack of HIV treatment (antiretroviral therapy), or lack of HIV prevention medicines, such as pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP).(15)

#### **Dementia and Alzheimer's Prevalence**

In 2020, it was estimated that the total number of Virginians ages 65 and older living with Alzheimer's Disease (the most common type of dementia) was approximately 150,000.(16) According to the Centers for Medicare and Medicaid Services, among all the Medicare Fee-for-Service beneficiaries in Hanover County, there were 1,533 (10.8%) with Alzheimer's Disease based on administrative claims data in 2018. In the same year, the percentage of Medicare beneficiaries diagnosed with Alzheimer's Disease represented 10.4% of Virginia beneficiaries and 10.8% of the U.S. beneficiaries.(17)

## **Top Five Cancers by Rates of New Cancer Cases**

Based on 2018-2020 Virginia Cancer Registry data, as shown in Table 2, the top five cancer sites by incidence (age-adjusted rates per 100,000 people) for Hanover County

were: breast, lung and bronchus, prostate, colorectal, and melanoma. Black females in Hanover County had a higher rate (140.2 per 100,000 people) of breast cancer incidence compared to White females (137.8 per 100,000 people). The lung and bronchus cancer incidence are similar between male and female residents in Hanover County (56.2 vs. 56.3 per 100,000 people, respectively). Black males have a much higher incidence rate of prostate cancer (234 per 100,000 people) compared to White males (100 per 100,000 people) in the county. Male residents have a higher colorectal cancer incidence rate (43.2 per 100,000 people) compared to female residents (30.4 per 100,000 people). Also, Black residents have a higher colorectal cancer incidence compared to White residents (43.9 vs. 35.7 per 100,000 people, respectively). The melanoma cancer incidence rate in male residents (32.6 per 100,000 people) is higher than the incidence rate among female residents (18.1 per 100,000 people).

Table 2: Top Five Cancer Sites Incidence Rate in Hanover County (Age-adjusted rates per 100,000 people)(18)

Cancer Site	Age-Adjusted Rate per 100,000 People
Breast	73.1
Lung and Bronchus	56.1
Prostate	52.5
Colorectal	36.2
Melanoma	24.7

## **Health Behaviors**

## **Tobacco Use**

## **Adult Smoking**

Based on 2020 Tobacco Behavioral Risk Factor Surveillance System (BRFSS) data, 14% of adults in Hanover County reported that they currently smoke every day or some days, and/or have smoked at least 100 cigarettes in their lifetime. Virginia reported the same percentage of adult smoker as Hanover County (14%), which is slightly below the U.S. percentage of adult smokers (16%).(19) This does not include vaping or smoking non-tobacco products.

## **Diet and Exercise**

## **Adult Obesity**

Based on 2020 BRFSS data, 35% of the adult population (18 and older) reported a body mass index (BMI) greater than or equal to 30 kg/m2 in Hanover County. This is above the 32% recorded in the 2017 Hanover CHA report. In comparison, 32% of adults reported a BMI greater or equal than 30 in both, Virginia and the U.S. BMI is a measurement often used to define an individual's body mass by using height and

weight. An adult who has a BMI of 30 or higher is categorized as obese. Adult obesity is a chronic condition that increases an individual's risk of high blood pressure, heart disease, type 2 diabetes, breathing issues, chronic inflammation, and some cancers.(20) It is important to note that various factors including age, sex, ethnicity, and muscle mass can influence BMI calculations and other measurements should be used to determine physical health.(21)

#### **Physical Inactivity**

In 2020, 18% of Hanover County adults reported no leisure-time physical activity. In Virginia, 20% of adults reported participating in no physical activity outside of work. Overall, in the U.S., an even higher percentage reported no physical activity outside of work (22%). These numbers are similar to those recorded in the 2017 Hanover CHA report. Physical activity, combined with a healthy diet, is important for the prevention of obesity and chronic health conditions.(22)

#### **Access to Exercise Opportunities**

Based on 2020-2022 data from County Health Rankings, the percentage of the population in Hanover County with adequate access to locations for physical activity was 87%. This is higher than Virginia (83%) and the U.S. (84%) access levels. The role of the built environment is important for encouraging physical activity. People who live near sidewalks, parks, and gyms are more likely to exercise.(23)

In 2020, according to the National Environmental Public Health Tracking Network, 14,007 or 13.4% of Hanover County residents lived within a half of a mile from a park. This is less than Virginia's percentage of 55.2%.(24)

## **Recreation and Fitness Facility Access**

There are 16 establishments primarily engaged in operating fitness and recreational sports facilities in Hanover County.(25) These facilities offer a variety of recreational activities such as exercise equipment, group fitness classes and other active physical fitness conditioning or recreational sports such as swimming, skating, or racquet sports. See Table 3 for details.

Table 3: Recreation and Fitness Facility Access in Hanover County in 2020<sub>(25)</sub>

Recreation and Fitness Facility Access	Total Population (2020)	Number of Establishments	Establishments, Rate per 100,000 People
Hanover County	109,979	16	14.55
Virginia	8,831,393	1,127	13.06

## **Food Insecurity**

Based on 2020 Map the Meal Gap data, 6% of Hanover County residents did not have access to a reliable source of food during the past year. The is lower than the values reported for Virginia and the U.S. (8% and 12%, respectively). Hanover County's food

insecurity percentage decreased by 2% since the 2017 Hanover CHA report. Furthermore, Hanover County scored 9.2 out of a possible 10 on the food environment index. The food environment index considers several factors, such as proximity to health foods, income levels, and food insecurity with a score of 0 (worst) to 10 (best). Virginia scored an 8.9, and the U.S. scored 7.0.(26)

## **Alcohol and Drug Use**

## **Excessive Drinking**

In Hanover County, 19% of adults over 18 years of age reported binge drinking or heavy drinking in 2020, compared to Virginia (17%), and the U.S. (19%). The percentage has slightly increased since the 2017 Hanover CHA report (17.3%). According to the CDC, binge drinking is defined as consuming 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women.(27) Excessive drinking is a risk factor for a number of adverse health outcomes, such as alcohol poisoning, high blood pressure, heart problems, sexually transmitted infections, unintended pregnancy, fetal alcohol syndrome, sudden infant death syndrome, suicide, interpersonal violence, and motor vehicle crashes.(28)

## **Drug Overdose Deaths**

In 2022, there were 34 drug overdose deaths (for all drug types) in Hanover County, which is a drug death rate of 31.4 per 100,000 people. This is higher than Virginia's drug death rate of 29 per 100,000 people during that same year. Opioids were the main class of drug involved in overdose deaths in both Hanover and Virginia.(29)

As described in the Office of the Chief Medical Examiner report for the 3<sup>rd</sup> quarter of 2023, fatal drug overdoses have been the leading method of unnatural death in Virginia since 2013 (causing or contributing to more deaths than motor vehicle related fatalities and gun related fatalities). Opioids, specifically illicit fentanyl, have been the driving force behind the large increase, and contributed to 75.9% of all fatal overdoses in 2022.(30)

#### Cannabis Use

Cannabis-related hospitalization data is based on the discharge code present in hospital records. Therefore, this hospitalization data is not solely related to cannabis – many other factors (including health conditions, other substances, injuries, etc.) could have led to or played a role in the need for hospital care. The rate of cannabis-related hospitalizations in 2018 was 164.1 per 100,000 people. There has been an increase overtime with 179.1 cannabis-related hospitalizations per 100,000 people in 2019; 220.8 per 100,000 people in 2020; and 223.5 per 100,000 people in 2021.(31)

Note: As of 2021, the Cannabis Control Act states that Virginia adults 21 and over can possess up to one ounce of marijuana.(32)

#### **Sexual Health**

## **Sexually Transmitted Infections**

In 2020, 273.7 new cases of chlamydia were diagnosed per 100,000 people in Hanover County, compared to 479.9 per 100,000 people in Virginia and 481.3 per 100,000 people in the U.S. Additionally, 70.5 new cases of gonorrhea per 100,000 people were reported in Hanover County, which is lower than the rates reported in Virginia (178.3 per 100,000 people) and in the U.S. (206.5 per 100,000 people). This indicator is important because STIs are associated with a significantly increased risk of morbidity and mortality, including increased risk of cervical cancer, infertility, and premature death.(33)

## **Teen Pregnancy**

This indicator reports the rate of pregnancies per 1,000 females ages 15 to 19 years old. In 2020, there were 8.67 teen pregnancies per 1,000 females ages 15-19 in Hanover County, which is lower compared to the rate reported in Virginia (17.27 per 1,000 females ages 15-19) during that same year. A teen pregnancy has unique medical risks, including: the potential lack of prenatal care; risk of high blood pressure, premature birth, low birth weight, STDs, and postpartum depression. Teen pregnancies can also have serious social and economic consequences. Young parents may struggle to find affordable, quality childcare, and suitable transportation, further hampering options for education or employment.(34)

## **Clinical Care**

## **Access to Care**

#### **Uninsured Adults and Children**

In 2020, 7% of Hanover County adults ages 18-64 years old did not have health insurance. In the same year, both Virginia (10%) and the U.S. (12%) had higher percentages of uninsured adults compared to Hanover. Additionally, 4% of children under the age of 19, did not have health insurance in Hanover County in 2020. This is similar to the percentages in Virginia (4%) and the U.S. (5%) for uninsured children. Lack of health insurance is considered a key driver of health status and is a significant barrier to healthcare access, including: regular primary care, specialty care, and other health services.(35)

## **Primary Care Physicians**

Based on 2020 Area Health Resources Files (AHRF), the ratio of population to primary care providers (PCP) for Hanover County was 1,420 people per one primary care physician (1,420:1). In Virginia and the U.S., this ratio was 1,320:1 and 1,310:1, respectively. Primary care providers can specialize in general practice medicine, family medicine, internal medicine, and pediatrics. This data indicates that there are fewer

PCPs for Hanover County community members when compared to the Virginia and U.S. ratios.(36)

#### **Dentists**

Based on 2021 Area Health Resources Files (AHRF), there were 1,450 people in Hanover County per one dentist (1,450:1). In Virginia and the U.S., the ratio was 1,350:1 and 1,380:1, respectively. Untreated dental disease can lead to serious health effects including pain, infection, and tooth loss. This data indicates that there are fewer dentists for Hanover County community members when compared to the Virginia and U.S. ratios.(37)

#### **Mental Health Providers**

Based on 2022 Center for Medicare and Medicaid Services, National Provider Identification data, there were 510 people in Hanover County per one mental health provider (510:1). The ratios in Virginia (450:1) and in the U.S. (340:1) indicate that Hanover County community members have fewer mental health providers in comparison. Mental health providers cover a variety of specialties, such as treating alcohol and drug use and marriage and family therapy. Mental health providers include psychiatrists, psychologists, licensed clinical social workers, and counselors.(38)

#### **Hospitalizations For Chronic Diseases**

The age-adjusted hospitalization rates from Virginia and Hanover County were obtained for the most common chronic conditions: Hypertension, Cardiovascular Disease, Diabetes, Chronic Kidney Disease, and Stroke/Transient Ischemic Attack.(39) The rates of hospitalizations in 2021 for these chronic conditions are explained below.

#### **Hypertension**

This indicator reports the age-adjusted hospital inpatient stays due to hypertensive disease per 100,000 people. Hypertension (high blood pressure) is when a person's blood pressure, the force of their blood pushing against the walls of their blood vessels, is consistently too high. It is an important public health challenge due to its high prevalence and strong association with cardiovascular disease and premature death. Uncontrolled hypertensive disease can lead to complications, including aneurysm, chronic kidney disease, heart attack, heart failure, stroke, vision problems, metabolic syndrome, trouble with memory, and dementia. Based on 2021 data, the hypertension hospitalizations rates were 3,690.08 per 100,000 people in Hanover County and 3,540.58 per 100,000 people in Virginia. These figures are higher than the hospitalizations rates reported in 2020 in Hanover and Virginia with 3,382.11 and 3,540.48 hospitalizations per 100,000 people, respectively.(40)

#### **Cardiovascular Disease**

This indicator reports the age-adjusted hospital inpatient stays due to cardiovascular disease per 100,000 people. In 2021, the cardiovascular disease hospitalizations rates

were 2,136.85 per 100,000 people in Virginia and 2,194.44 per 100,000 people in Hanover County. These rates increased compared to figures from 2020 (2,062.17 hospitalizations per 100,000 people in Virginia and 2,025.45 in Hanover County).(41)

#### **Diabetes**

Diabetes is a serious, but manageable, disease. Keeping blood sugar levels within a healthy range can prevent diabetes complications, such as damage to nerves, eyes, kidneys, and other organs. Diabetes hospitalizations can potentially be avoided if quality outpatient services are available and treatment plans are followed.(42)

This indicator reports the age-adjusted hospital inpatient stays due to diabetes per 100,000 people. In 2021, the diabetes hospitalizations rates were 1,519.51 per 100,000 people in Virginia and 1,576.94 per 100,000 people in Hanover County. The rates reported in for Virginia and Hanover County increased compared to figures from 2020 (1,500.31 hospitalizations per 100,000 people in Virginia and 1,431.66 per 100,000 people in Hanover County).(42)

#### **Chronic Kidney Disease**

This indicator reports the age-adjusted hospital inpatient stays due to chronic kidney disease (CKD) per 100,000 people. In 2021, the CKD hospitalizations rates were 1,240.40 per 100,000 people in Virginia and 1,260.44 per 100,000 people in Hanover County. These rates increased compared to the figures reported during 2020 (1,225.46 hospitalizations per 100,000 people in Virginia and 1,178.10 in Hanover County).(43)

#### **Stroke**

This indicator reports the age-adjusted hospital inpatient stays due to stroke (or transient ischemic attack, TIA) per 100,000 people. An ischemic stroke occurs when the blood supply to part of the brain is interrupted or reduced, preventing brain tissue from getting oxygen and nutrients. Brain cells begin to die in minutes. A stroke is a medical emergency, and prompt treatment is crucial. Early action can reduce brain damage and other complications. TIA, or transient ischemic attack occurs when a blood clot blocks an artery for a short time. Unlike a stroke, when a TIA is over, there is no permanent injury to the brain. Strokes are a leading cause of death as well as a major cause of serious long-term disabilities. In 2021, the stroke/TIA hospitalizations rates were 216.18 per 100,000 people in Virginia and 275.11 per 100,000 people in Hanover County. These figures are above those reported in 2020 (203.92 hospitalizations per 100,000 people in Virginia and 241.17 per 100,000 people in Hanover County.

## **Quality of Care**

## **Preventable Hospital Stays**

This indicator shows the rate of preventable hospital stays for ambulatory-care sensitive conditions per 100,000 Medicare enrollees. Based on 2020 data, there were 2,703 preventable hospitals stays per 100,000 enrollees in Hanover County. In comparison, see Table 4 that shows during the same period, there were 2,902 and 2,809 hospital stays per 100,000 enrollees in Virginia and in the U.S., respectively. These hospital stays are generally considered to be preventable via timely and accessible outpatient care.(45)

Table 4: Preventable Hospital Stays(45)

Location	Rate of Preventable Hospital Stays (Per 100,000 Medicare Enrollees)
Hanover County	2,703
Virginia	2, 902
United States	2,809

#### **Mammography Screenings**

In 2020, 45% of female Medicare enrollees between the ages of 65-74 received an annual mammography screening in Hanover County. As shown in Table 5, this is a higher (and better) percentage when compared to 39% of female enrollees in Virginia and 37% of female enrollees in the U.S. who received an annual mammography screening.(46)

Table 5: Mammography Screenings(46)

Location	Percent of Female Medicare Enrollee (ages 65-74)
Hanover County	45%
Virginia	39%
United States	37%

## Social and Economic Factors

#### **Education**

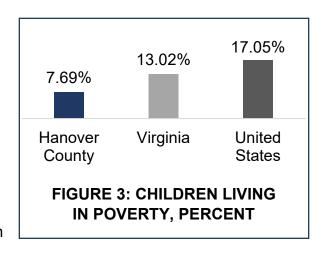
## **Some College**

From 2017 to 2021, 19.9% of Hanover County adults (ages 25-44) had completed some post-secondary education, including vocational/technical schools, junior colleges, or four-year colleges. This percentage is higher than the 18.7% reported in Virginia and similar to the 20% reported in the U.S.(47) This indicator is connected to workforce training and educational attainment, which is often associated with job opportunities and stable employment.

#### Income

## **Children in Poverty**

Poverty is considered a key driver of health status. In Hanover County, 7.69% or 1,829 children (ages 0-17) are living in households with an income below the Federal Poverty Level (FPL). See Figure 3 for details. This is lower than the figures reported in Virginia and the U.S. (13.02% and 17.05%, respectively). Poverty creates barriers to access including health services, healthy food, and other necessities. In Hanover, more boys than girls (8.10% vs. 7.24%) are living in households with an income below the FPL.(48)

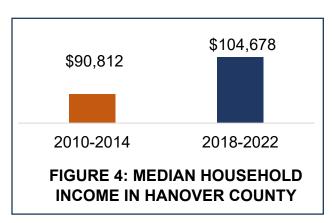


#### **Income Inequality**

One way to determine income inequality is to use the Gini Index, based on the Gini coefficient, which has values ranging from zero to one. A value of one indicates perfect inequality (where only one household has any income); while a value of zero indicates perfect equality (where all households have equal income). From 2017 to 2021, the Gini Index in Hanover County was 0.42, which is closer to zero than the Virginia's value (0.47) and the U.S.'s value (0.48). This index value is similar to the 2017 Hanover CHA report. (49)

#### **Median Household Income**

As of 2022, the median household income in Hanover County was \$104,678, which is higher than the income reported in Virginia (\$87,249) and in the U.S. (\$75,149). Since the last iteration of the Hanover CHA, the median household income has increased for Hanover County from \$90,812 to \$104,678. See Figure 4 for details.(50)



## **Family and Social Support**

## **Children in Single-Parent Households**

From 2017 to 2021, 16.5% of children lived in a household headed by a single parent in Hanover County. Hanover had less children in single-parent households compared to Virginia (23.7%) and the U.S. (25.1%). This indicator highlights the importance of family and social support during childhood development. The number of children in single-parent households in Hanover County decreased since 2011-2015 from 20% to 16.5%.(51)

## **Community Safety**

#### Crime

The Hanover County Sheriff Office participates in the National Incident Based Reporting System (NIMRS). NIMRS aims to report crimes such as homicide, forcible rape, robbery, burglary, aggravated assault, larceny, motor vehicle theft, and arson. According to the 2022 report, in Hanover County, there were 2 homicides, 16 forcible rape, 2 robberies, 33 burglaries, 98 aggravated assaults, 864 larcenies (including shoplifting, vehicle larceny, and theft from building), 44 motor vehicle thefts and 6 arsons. (52) Details on common larceny offenses for the years 2021 and 222 are provided in Table 6.

Table 6: Larceny Offenses in Hanover County<sub>(52)</sub>

Larceny	2021	2022	Percent Change
From Building	108	107	-0.93%
From Motor Vehicle	96	112	+16.67%
Motor Vehicle Parts or	98	129	+31.63%
Accessories			
Other	220	225	+2.27%
Shoplifting	235	289	+22.98%

#### **Motor Vehicle Crash Deaths**

This indicator reports the 2016-2020 (five year) average rate of death due to motor vehicle crashes per 100,000 people, which include collisions with another motor vehicle, a non-motorist, a fixed object, and a non-fixed object, an overturn, and any other non-collision. This indicator is relevant because motor vehicle crash deaths are preventable, and they are a cause of premature death.

In Hanover County, from 2016 to 2020, there were a total of 71 deaths due to motor vehicle crash. This represents an age-adjusted death rate of 13.3 per 100,000 people. In comparison, during the same period, there were 9.8 motor vehicle crash deaths per 100,000 people in Virginia and 11.5 deaths per 100,000 people in the U.S.

Additionally, the Hanover County Sheriff Office reported that the Traffic Safety Unit was activated 22 times and investigated: 11 fatal crashes, 8 serious injury crashes, 2 sheriff's office vehicle crashes, and 1 pursuit/crash investigation in 2022. Table 7 displays the top ten crash locations during 2022 in Hanover County.(53)

Table 7: 2022 Top 10 Crash Locations in Hanover County(53)

2022 Rank	Location	Number of Crashes	Number of Injuries
1	Mechanicsville Turnpike at Bell Creek Road	17	7
2	Mountain Road at Ashland Road	8	0
3	Washington Highway at Cobbs Road	8	2
4	Atlee Road at Barnfield Lane	7	3
5	Chamberlayne Road at Atlee Road	7	7
6	Ashland Road at Cauthorne Road	6	10
7	Chamberlayne Road at Richfood Road	6	2
8	Meadowbridge Road at Shady Grove Road	6	2
9	Washington Highway at Sliding Hill Road	6	0
10	Bell Creek Road at Battle Hill Drive	5	4

#### **Suicide Deaths**

This indicator reports the age-adjusted suicide rates per 100,000 people. According to the National Center for Health Statistics, from 2017 to 2020, there were 17.7 deaths by suicide per 100,000 people in Hanover County. This is higher than the suicide rates reported in Virginia (13.4 per 100,000 people) and in the United States (13.9 per 100,000 people). Between 2012-2016, there were 16.1 deaths by suicide per 100,000 people in Hanover County. This indicator has increased in Hanover County since the 2017 Hanover CHA report. People who have experienced trauma, including child abuse, bullying, or sexual assault, have a higher suicide risk. Being connected to family and community support systems as well as having easy access to health care can decrease suicidal thoughts and improve mental health.(54)

## **Physical Environment**

## **Air Quality**

#### **Air Pollution- Particulate Matter**

In 2019, Hanover County had an annual average of 8.4 micrograms per cubic meter of fine particulate matter measured in the air. In the same period, the annual average per cubic meter of fine particulate matter was 7.3 in Virginia and 7.4 in the U.S. Overall, air pollution has improved in Hanover County since the 2017 Hanover CHA report. Air pollution can contribute to lung issues such as asthma or chronic bronchitis. Premature death can be an effect from long-term exposure to particulate matter.(55)

## **Housing and Transit**

## Housing

As of July 2022, there were 44,756 housing units in Hanover County. Between 2017-2021, 83% of the housing units were occupied by the owner, and the median value of the owner-occupied housing unit was \$304,700. In addition, the median gross rent was \$1,260 in the county. When compared to the 2017 Hanover CHA report, there appears to have been an increase in the housing units as well as the median value. From 2017 to 2021, 9% of households spent 50% or more of their income on housing in Hanover County. This percentage is lower than the figures reported in Virginia (12%) and in the U.S. (14%) during that same timeframe.(56)

Stable and affordable housing is an essential element of healthy communities. Homeownership is associated with better overall health, fewer illnesses, and lower rates of depression and anxiety.(56)

## Walking or Biking to Work

The U.S. Census Bureau's American Community Survey (ACS) estimates for 2017-2021 that only 1.3% of workers in Hanover County used walking or cycling as means of transportation. This is below the 2.6% and 3.0% reported in Virginia and in the U.S., respectively.(57)

Considering walking and cycling as viable modes of transportation could influence the way people move about their neighborhoods and communities. Pedestrian and bicycle infrastructure can also promote the protection of environmental and cultural resources and enhances access to those resources further supporting recreation and leisure activities. Neighborhoods that are walkable, often have higher property values, and market studies have shown a strong demand for walkable real estate products. Hanover County's Comprehensive Plan that was adopted in September 2023, established several overarching goals. Many of these goals connect with healthy neighborhoods, for example: active living, environment and resiliency, and multi-modal transportation. Please see the image below for the complete list of goals, and view the full Comprehensive Plan by visiting:

www.hanovercounty.gov/DocumentCenter/View/9892/Adopted-Text.(57)

## Comprehensive Plan Overarching Goals(53)

GOALS		
LAND USE + GROWTH MANAGEMENT	Hanover County will strive to ensure the highest-quality living environment possible, through a mixture of land uses reflecting the needs and desires of local residents and how they want their community to develop. Residential growth and economic development will be primarily directed to appropriate locations within the Suburban Service Area (SSA), where utilities are planned. The majority of the County will remain rural with its agricultural, forestal, historic and natural resources being preserved for future generations.	
RURAL/ AGRICULTURAL	The rural character of the County will remain an integral and vital component to Hanover's culture and economy. Hanover County will strive to support agricultural and forestry uses and maintain the majority of the county for rural heritage. Sustaining the rural character of the County enhances and improves the quality of life for all citizens.	
ECONOMIC VITALITY	Hanover County places priority on the growth and resiliency of our economy, which contributes to the vitality and well-being of our community. Through economic development activities, the County supports entrepreneurship and the growth of existing businesses, while working to attract new investment to appropriate areas.	
₩ HOUSING	Hanover County will work collaboratively with the private sector to create communities that offer and maintain quality housing options, enabling residents to remain in the County as their needs and circumstances change.	
ã ACTIVE LIVING	Hanover County will strive to create healthy neighborhoods that provide safe, convenient, and comfortable options for active living for residents of all ages and abilities.	
** TRANSPORTATION	Hanover County will provide an efficient, safe, and attractive multi-modal transportation network that accommodates the needs of residents, visitors, and businesses.	
COMMUNITY FACILITIES + UTILITIES	Hanover County will provide superior services in a cost-effective manner by strategically locating community facilities to most effectively serve public needs and foster a superior quality of life.	
HISTORY + CULTURE	Hanover County is a community that preserves the physical links to its past and shares the stories of its people, enhancing understanding of its multi-faceted history.	
ENVIRONMENT + RESILIENCY	Hanover County is a community that strategically preserves critical natural resources for the health and enjoyment of its current residents and future generations, creating a resilient community.	

## **Qualitative Data**

## **Key Informant Interviews**

## Methodology

The Chickahominy Health District conducted five key informant interviews with members from the following local organizations: 1) YMCA of Greater Richmond; 2) Parks and Recreation; 3) Department of Community Resources; 4) Community Services Board; and 5) Public Schools. The interviews lasted thirty to forty minutes in length and occurred between May - September 2023. Each interview included seven questions to gather information on the perceived strengths and challenges related to the top three health priorities (transportation, mental health, and financial stability) chosen during the Community Health Improvement Process (CHIP) in 2018. Interviewees were also asked to describe new initiatives or relevant topics currently impacting community health. An analysis was conducted in November of 2023 to identify common themes among the responses.

#### Results

The main themes extracted from the key informant interviews are summarized below and categorized under the three priorities. Additional issues considered relevant to the community's health by the interviewees are also included.

#### **Transportation**

- Participants shared that the Hanover DASH service was a strength because they
  have improved access to transportation for those ages 65 years or older, and
  those of all ages with long or short-term disability. It offers services seven days a
  week and has a recently lowered co-pay of \$5 to make transportation more
  accessible.
- A challenge shared by participants is the need for infrastructure for walkability, including crosswalks and accessible curbs, and more transportations services for other age groups (like families with children).

#### **Mental Health**

- Hanover Community Services Board (CSB) offers crisis services and same-day mental health care access. They launched a new website that provides information on mental health resources.
- Hanover Parks and Recreation connects with local law enforcement and social services to provide mental health resources to community members.
- Hanover County Schools partnered with the Hanover CSB to increase the number of mental health providers in schools.
- Participants mentioned a need for more community outreach to improve the public's knowledge of the resources and services available to them.

#### Financial Stability

- There are local organizations, including places of worship, as well as the supportive housing line, who assist with rent and utilities payments, on a case by case basis.
- Utility companies have energy share programs that split utilities into payments instead of shutting down services.
- Hanover Parks and Recreation has a financial aid program to break down cost barriers to participate in their programs.
- Food pantries and clothing banks are available at multiple locations many offered by faith-based organizations.

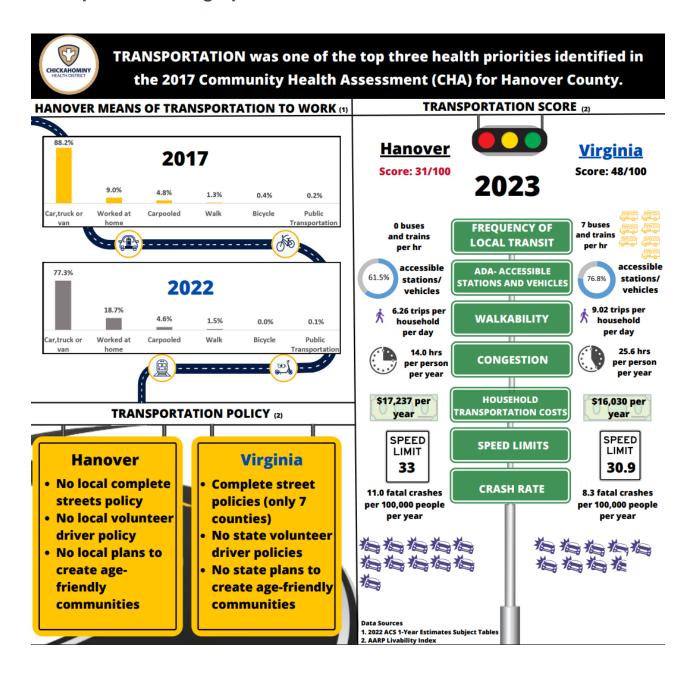
#### **Emerging Health Issues in Hanover County**

- Access to dental care,
- Immunizations to ensure children can return to school on time,
- Access to primary health care for people without insurance/low-income,
- Maternity care for women experiencing substance abuse,
- Opioids prevention programs,
- LGBTQ resources,
- Childcare services for parents who work, and
- Workshops for families on child development and self-regulation support.

## **Infographics: Status of Health Priorities**

The infographics on pages 22-24 were developed to visually summarize data that represents the status of the top three health priorities, which were selected during the 2018-2022 Hanover Community Health Improvement Plan.

## **Transportation Infographic**



## **Mental Health Infographic**



MENTAL HEALTH CARE ACCESS was one of the top three health priorities identified in the 2017 Community Health Assessment (CHA) for Hanover County.

## **POOR MENTAL** HEALTH DAYS

In the last 30 days...

in 2015

in 2020

3.0

## 2012-2016 2017-2020 16.1 Age-adjusted rate per 100,000

SUICIDE DEATH RATE (2)

...adults reported that their mental health was not good

## **MENTAL HEALTH**

PROVIDERS RATIO (3)

2016 2022

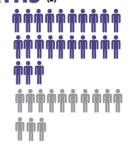
> 1:850 1:510

100 residents in Hanover 1 Mental Health provider County

## **DRUG OVERDOSE DEATHS** (2)

2018-2020 23 deaths per 100,000 people

2013-2015 13 deaths per 100,000 people



## ALCOHOL-RELATED DRIVING **DEATHS**(4)

2011-2015

2014-2020

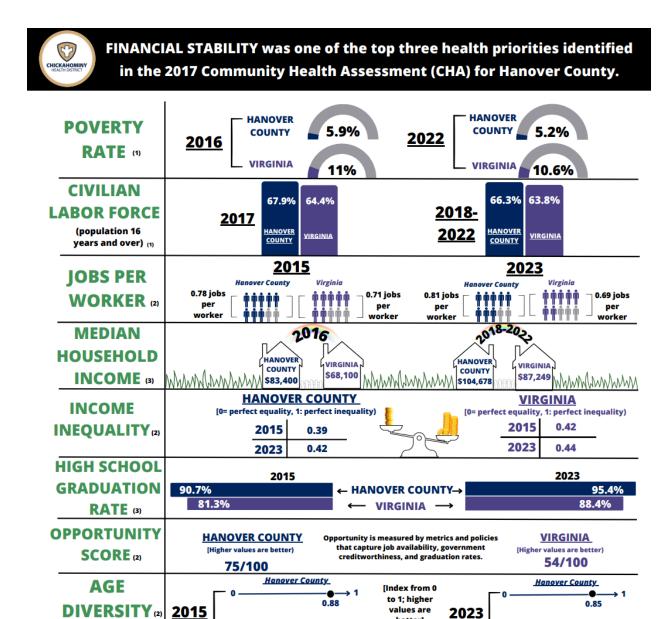
**30**%



- 1. Behavioral Risk Factor Surveillance System
- 2. National Center for Health Statistics Mortality Files
- 3. CMS, National Provider Identification
- 4. Fatality Analysis Reporting System

## **Financial Stability Infographic**

2. AARP Livability Index 3. ACS and Hanover County Rankings



<u>Virginia</u>

Virginia

0.81

betterl

## **Conclusion**

Over the next few months, the Healthy Hanover Coalition will meet regularly and establish workgroups to help select health topics to focus on addressing. The workgroups will focus on: 1) gathering additional information on topics that need further research; 2) identify root causes of health issues; and 3) re-assess the health topics that should be prioritized over the next five years. For a community to make substantial, long-lasting change, it is important to address the root causes of health issues. The Health EquiTREE, seen in Figure 5, is a metaphor used to help further understand the relationships among health outcomes and systems. The yellow leaves represent various outcomes such as hypertension, obesity, and cancer. The branches represent health behaviors that contribute to those health outcomes such as smoking, substance use, social connections, and diet. The trunk represents the certain conditions that influence people's ability to engage in healthy behaviors such as education, employment, and housing. These are the social determinants of health that affect a wide range of health, functioning, and quality-of-life outcomes and risks. The roots of the tree are below ground, and often harder to see. The roots represent the root causes of the social determinants of health. By looking at the roots and the soil, we may better understand and address what created these conditions in the first place.(58)

To learn more about this report or to inquire about being part of the Healthy Hanover Coalition, please email the Chickahominy Health District: CHDWellness@vdh.virginia.gov.

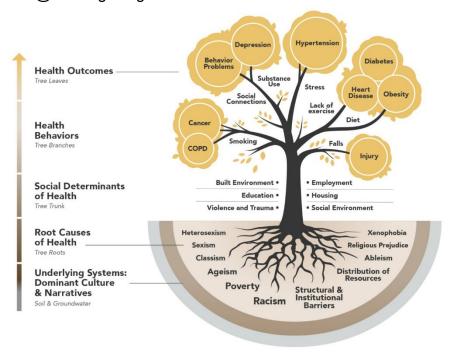


FIGURE 5: Health EquiTREE

## References

- 1. Hanover, VA: Health Outcomes County Health Rankings 2023 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/virginia/hanover?year=2023">https://www.countyhealthrankings.org/explore-health-rankings/virginia/hanover?year=2023</a>.
- 2. Total Population: U.S. Census Bureau, Population Estimates Program (PEP); 2022 [Available from: https://www.census.gov/quickfacts/fact/table/hanovercountyvirginia/PST040222#PST040222.
- 3. Hanover County Community Health Assessment Chickahominy Health District 2017 [Available from: <a href="https://www.vdh.virginia.gov/chickahominy/community-health-assessment/">https://www.vdh.virginia.gov/chickahominy/community-health-assessment/</a>.
- 4. Race and Hispanic Origin Identity: U.S. Census Bureau, Population Estimates Program (PEP); 2022 [Available from:
- https://www.census.gov/quickfacts/fact/table/hanovercountyvirginia/RHI725222#RHI725222.
- 5. Age Identity U.S. Census Bureau, Population Estimates Program (PEP); 2022 [Available from: https://www.census.gov/quickfacts/fact/table/hanovercountyvirginia/RHI725222#RHI725222.

Disability U.S. Census Bureau: Understanding and Using American Community Survey Data:

What All Data Users Need to Know 2018 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B11%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A

%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D

- %7D.
  7. Premature Death Centers for Disease Control and Prevention, CDC- National Vital Statistics System. Accessed via County Health Rankings.; 2018-2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment %22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C %22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22 %3Atrue%7D%2C%22indicator%22%3A%5B12%2C83%5D%2C%22location%22%3A%7B%22key%22 %3A%22county%22%2C%22type%22%3A%22county%22%2C%22show\_county%22%3Afalse%2C%22show\_state%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%2 2%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.</p>
- 8. Infant Mortality Virginia Department of Health, Vital Event Statistics Program, Office of Information Management 2018-2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22plist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B46%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.
- 9. Maternal Mortality Virginia Department of Health, Vital Event Statistics Program, Office of Information Management 2018-2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-

content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B55%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22type%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_tract%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.

- 10. Hanover County, VA Community Health Assessment Community Health Improvement Data Portal: Virginia Department of Health; 2023 [Available from: <a href="https://cares.page.link/aghT">https://cares.page.link/aghT</a>.
- 11. Top Five Leading Causes of Death CDC WONDER; 2018-2020 [Available from: https://wonder.cdc.gov/.
- 12. Top Five Leading Causes of Cancer Death Virginia Cancer Registry, SEER, all COD, aggregated with state; 6/2023.
- 13. Top Five Leading Causes of Chronic Disease Death. Virginia Department of Health, Office of Information Management; 6/2023.
- 14. Diabetes Prevalence Diabetes Behavioral Risk Factor Surveillance System; 2020 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-outcomes/quality-of-life/diabetes-prevalence?anchor=data-methods&selected-tab=methods&year=2023</a>
- 15. HIV Prevalence Center for Disease Control and Prevention, National Center fo HIV/AIDS, Viral Hepatitis, STD, and TB Prevention; 2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentld%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22plist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B45%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%20VA%22%5D%7D%7D.
- 16. State Overview of Virigina: Alzheimer's Association; 2023 [Available from: <a href="https://www.alz.org/professionals/public-health/state-overview/virginia">https://www.alz.org/professionals/public-health/state-overview/virginia</a>

pdf.

- 17. Chronic Conditions Alzheimer's Disease (Medicare Population). Community Health Needs Assessment (Location: Hanover County, VA). SparkMap2023. p. 272 / 361.
- 18. Top Five Cancers by Rates of New Cancer Cases Virginia Cancer Registry; 1995-2021.
- 19. Adult Smoking Tobacco Behavioral Risk Factor Surveillance System 2020 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/health-behaviors/tobacco-use/adult-smoking?anchor=data-methods&selected-tab=methods&year=2023</a>
- 20. Obesity and Overweight Behavioral Risk Factor Surveillance System 2020 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/health-behaviors/diet-and-exercise/adult-obesity?anchor=data-methods&selected-tab=methods&year=2023</a>
- 21. Body Mass Index: Considerations for Practitioners: Centers for Disease Control and Prevention; [Available from: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.cdc.gov/obesity/downloads/bmiforpactitioners.
- Physical Inactivity Behavioral Risk Factor Surveillance System 2020 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/health-behaviors/diet-and-exercise/physical-inactivity?anchor=data-methods&selected-tab=methods&year=2023</a>
- 23. Access to Exercise Opportunities ArcGIS Business Analyst and Living Atlas of the World; YMCA; US Census TIGER/Line Shapefiles 2020 & 2022 2020 & 2022 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-">https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-</a>

factors/health-behaviors/diet-and-exercise/access-to-exercise-opportunities?anchor=data-methods&selected-tab=methods&vear=2023

- 24. National Environmental Public Health Tracking Network: Centers for Disease Control and Prevention; 2020 [Available from: <a href="https://ephtracking.cdc.gov/DataExplorer/?c=14&i=80&m=-1">https://ephtracking.cdc.gov/DataExplorer/?c=14&i=80&m=-1</a>.
- 25. Recreation: County Business Patterns CARES; 2020 [Available from: https://www.census.gov/quickfacts/hanovercountyvirginia.
- 26. Food Insecurity Gundersen C, Strayer, M., Dewey, A., Hake, M., & Engelhard, E. An Analysis of County and Congressional District Food Insecurity and County Food Cost in the United States in 2019. Feeding America.: Map the Meal Gap 2021 [Available from:

https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/health-behaviors/diet-and-exercise/food-insecurity?anchor=data-methods&selected-tab=methods&year=2023

- 27. Binge Drinking: Centers for Disease Control and Prevention; 2022 [Available from: <a href="https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm">https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm</a>.
- 28. Excessive Drinking Behavioral Risk Factor Surveillance System 2020 [Available from: https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/health-behaviors/alcohol-and-drug-use/excessive-drinking?anchor=data-methods&selected-tab=methods&year=2023
- 29. OVERDOSE DEATHS Virginia Department of Health (VDH)'s Drug Overdose-Related Mortality Table and Dashboard: Virginia Department of Health; 2022 [Available from: <a href="https://www.vdh.virginia.gov/drug-overdose-data/overdose-deaths/">https://www.vdh.virginia.gov/drug-overdose-data/overdose-
- 30. Fatal Drug Overdose Quarterly Report, 3rd QUARTER 2023 Virginia Department of Health: Office of the Chief Medical Examiner; January 2024 [Available from: <a href="https://www.vdh.virginia.gov/content/uploads/sites/18/2024/01/Quarterly-Drug-Death-Report-FINAL-Q3-2023.pdf">https://www.vdh.virginia.gov/content/uploads/sites/18/2024/01/Quarterly-Drug-Death-Report-FINAL-Q3-2023.pdf</a>.
- 31. Cannabis Use Virginia Health Information and Office of Information Management 2023.
- 32. Cannabis Use Virginia Cannabis Control Authority 2023 [Available from: https://cca.virginia.gov/.
- 33. Sexually Transmitted Infections: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention; 2020 [
- 34. Teen Pregnancy Virginia Department of Health, Vital Event Statistics Program, Office of Information Management 2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-">https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-</a>
- assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment %22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C %22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22 %3Atrue%7D%2C%22indicator%22%3A%5B48%5D%2C%22location%22%3A%7B%22key%22%3A%2 2county%22%2C%22show county%22%3Atrue%2C%22show st ate%22%3Atrue%2C%22show zip%22%3Afalse%2C%22show tract%22%3Afalse%2C%22id%22%3A %5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D %7D.
- 35. Uninsured: US Census Bureau, Small Area Health Inurance Estimates; 2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B17%2C18%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22type%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.
- 36. Primary Care Physicians: Area Health Resources Files (AHRF), US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, Rockville, MD; 2021-2022 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-">https://www.countyhealthrankings.org/explore-health-rankings/county-</a>

health-rankings-model/health-factors/clinical-care/access-to-care/primary-care-physicians?anchor=data-methods&selected-tab=methods&vear=2023

- 37. Dentists: Area Health Resources Files (AHRF), US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, Rockville, MD; 2021-2022 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/clinical-care/access-to-care/dentists?anchor=data-methods&selected-tab=methods&year=2023</a>
- 38. Mental Health Providers: CMS, National Provider Identification; 2022 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/clinical-care/access-to-care/mental-health-providers?anchor=data-methods&selected-tab=methods&year=2023</a>
- 39. Chronic Disease Hospitalizations Virginia Health Information and Virginia Department of Health; 2023.
- 40. Hypertension Hospitalizations: Virginia Department of Health, Inpatient Discharge Dataset from Virginia Health Information (VHI); 2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-">https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-</a>
- assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment %22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C %22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22 %3Atrue%7D%2C%22indicator%22%3A%5B37%5D%2C%22location%22%3A%7B%22key%22%3A%2 2county%22%2C%22show county%22%3Atrue%2C%22show st ate%22%3Atrue%2C%22show \_tract%22%3Afalse%2C%22id%22%3A %5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D %7D.
- 41. Heart Disease Facts Centers for Disease Control and Prevention: National Center for Chronic Disease Prevention and Health Promotion; 2023 [updated May 15, 2023. Available from: <a href="https://www.cdc.gov/heartdisease/facts.htm">https://www.cdc.gov/heartdisease/facts.htm</a>.
- 42. Preventable Hospitalizations for Diabetes California Department of Health Care Access and Information2024 [Available from: <a href="https://hcai.ca.gov/visualizations/preventable-hospitalizations-for-diabetes/#:~:text=Additional%20Information-,why%20is%20the%20Diabetes%20Hospitalization%20Rate%20Important%3F,%2C%20kidneys%2C%20and%20other%20organs.
- 43. Inpatient Hospitalization Data. In: (VHI) VHI, editor. Office of Information Management Virginia Department of Health2018-2021.
- 44. Stroke Hospitalizations Virginia Department of Health, Inpatient Discharge from Virginia Health Information (VHI); 2020 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment</a>
- %22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C %22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22 %3Atrue%7D%2C%22indicator%22%3A%5B38%5D%2C%22location%22%3A%7B%22key%22%3A%22 2county%22%2C%22type%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_st ate%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A %5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D %7D.
- 45. Preventable Hospital Stays Mapping Medicare Disparities Tool; 2020 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/clinical-care/quality-of-care/preventable-hospital-stays?anchor=data-methods&selected-tab=methods&year=2023</a>
- 46. Mammography Screenings: Mapping Medicare Disparities; 2020 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/clinical-care/quality-of-care/mammography-screening?anchor=data-methods&selected-tab=methods&year=2023</a>

- 47. Some College US Census Bureau, American Community Survey; 2017-2021 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentld%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22preakout%22%3Atrue%7D%2C%22indicator%22%3A%5B92%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.
- 48. Children in Poverty US Census Bureau, America Community Survey 2017-2021 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentld%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22stratelist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B83%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.
- 49. Income Inequality US Census Bureau, American Community Survey 2017-2021 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentld%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B87%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Atrue%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.
- 50. Median Household Income US Census Bureau, Small Area Income and Poverty Estimates 2021 [Available from: https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment %22%2C%22style%22%3A%22VDH%22%2C%22contentld%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C %22ziplist%22%3Afalse%2C%22tractlist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22 %3Atrue%7D%2C%22indicator%22%3A%5B8%5D%2C%22location%22%3A%7B%22key%22%3A%22 county%22%2C%22type%22%3A%22county%22%2C%22show\_county%22%3Afalse%2C%22show\_state%22%3Atrue%2C%22show\_zip%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A%5B%2251085%22%5D%2C%22name%22%3A%5B%22Hanover%20County%2C%20VA%22%5D%7D%7D.
- 51. Children Living in Single-parent Households U.S. Census Bureau: Understanding and Using American Community Survey Data: What All Data Users Need to Know 2017-2021 [Available from: <a href="https://virginiawellbeing.com/virginia-community-health-improvement-data-portal/vdh-assessment/?REPORT=%7B%22name%22%3A%22Virginia%20Community%20Health%20Assessment%22%2C%22style%22%3A%22VDH%22%2C%22contentId%22%3A%22%23cdt-report-content%22%2C%22output%22%3A%7B%22countylist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22statelist%22%3Atrue%2C%22statelist%22%3Afalse%2C%22map%22%3Atrue%2C%22breakout%22%3Atrue%7D%2C%22indicator%22%3A%5B83%5D%2C%22location%22%3A%7B%22key%22%3A%22county%22%2C%22show\_county%22%3Afalse%2C%22show\_state%22%3Afalse%2C%22show\_state%22%3Afalse%2C%22show\_state%22%3Afalse%2C%22show\_state%22%3Afalse%2C%22show\_tract%22%3Afalse%2C%22id%22%3A

- $\frac{\%5B\%2251085\%22\%5D\%2C\%22name\%22\%3A\%5B\%22Hanover\%20County\%2C\%20VA\%22\%5D\%7D\%7D}{\%7D}.$
- 52. Crime Hanover County Sheriff, Annual Report 2022 [Available from: https://www.hanoversheriff.com/27/Our-Organization
- 53. Motor Vehicle Crash Deaths Hanover County Sheriff Office 2022 [Available from: <a href="https://www.hanoversheriff.com/27/Our-Organization">https://www.hanoversheriff.com/27/Our-Organization</a>.
- 54. Suicide Deaths County Health Rankings and Roadmaps2023 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/social-economic-factors/community-safety/suicides?anchor=data-methods&selected-tab=methods&year=2023</a>
- 55. Air Pollution- Particulate Matter Enviornmental Public Health Tracking Network 2019 [Available from: <a href="https://www.countyhealthrankings.org/explore-health-rankings/county-health-rankings-model/health-factors/physical-environment/air-and-water-quality/air-pollution-particulate-matter?anchor=data-methods&selected-tab=methods&vear=2023
- 56. Housing U.S Census Bureau, Population Estimates Program (PEP); 2022 [Available from: https://www.census.gov/quickfacts/fact/table/hanovercountyvirginia/HSG010221#HSG010221.
- 57. Walking or Biking to Work Comprehensive Plan 2017-2037; 2021 [Available from: <a href="https://www.hanovercounty.gov/199/Comprehensive-Plan">https://www.hanovercounty.gov/199/Comprehensive-Plan</a>.
- 58. Emily Breen fPO. The Health Tree Metaphor and the Importance of Shared Language HEALTH RESOURCES IN ACTION. Updated April 3, 2023. Available from: https://hria.org/2023/04/03/healthequitree/.