

Virginia Beach Community Health Assessment

December 2016



Report can be found online at www.vdh.virginia.gov/LHD/vabeach

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Introduction

The 2016 Virginia Beach Community Health Assessment report was developed through a collaborative process and provides an overview of the health needs in the city of Virginia Beach. The goal of this report is to offer a meaningful understanding of the health needs in the community, as well as help guide the Virginia Beach Department of Public Health in its population health planning efforts and development of an implementation strategy to address prioritized needs. Special attention has been given to identify health disparities, the needs of vulnerable populations, and unmet health needs or gaps in services.

Mobilizing for Action through Planning and Partnerships

Mobilizing for Action through Planning and Partnerships (MAPP) is a community-wide strategic planning tool for improving community health and the community-wide public health system. This tool, facilitated by public health leadership, is designed to help communities prioritize health issues and to ultimately identify resources for addressing them. The MAPP model comprises a roadmap of four assessments designed to build a healthier community by providing critical insights into healthcare challenges and opportunities throughout the community. The four MAPP assessments include:

1. Community Themes and Strengths Assessment
2. Local Public Health System Assessment
3. Community Health Status Assessment
4. Forces of Change Assessment

In 2013, the Virginia Beach Department of Public Health (VBDPH), in collaboration with community partners, completed all four assessments during its second cycle of the MAPP process. Due to the flexibility of the MAPP process, VBDPH decided to update the Community Health Status Assessment in 2016 in order to align with the community health needs assessment cycles of the two hospitals in the city of Virginia Beach. This report summarizes the Virginia Beach Community Health Status Assessment conducted between July and December 2016. The Community Health Status Assessment addresses two main questions: (1) How healthy are our residents? (2) What does the health status of our community look like?

The report provides an in-depth view of the health needs as well as broader health indicators facing our community. The social and health indicators include demographics, socioeconomic characteristics, quality of life, behavioral factors, the built environment, morbidity and mortality, and other determinants of health status. The most recent data from local, state and federal resources were used in addition to gathering community input through focus groups. Where possible, data for the Commonwealth of Virginia, the United States, and/or the Healthy People 2020 goals are referenced for comparison. Healthy People 2020 is a set of objectives for the nation's health that was developed by the U.S. Department of Health and Human Services through a broad national consultative process. These targets were developed with the foundation of the best scientific knowledge and are intended for use in public health program evaluation over time with the ultimate goal of assisting local, state, and federal agencies in improving the health of the nation.

The Community Health Status Assessment findings will be used in conjunction with the results of the findings from the other 3 MAPP assessments conducted in 2013 to identify key strategic issues and priorities for community action and to develop a community health improvement plan.

Demographics

This section provides data on key indicators of demographics in Virginia Beach to demonstrate current conditions, trends, and evaluate future needs.

POPULATION ESTIMATES AND GROWTH

The U.S. Census Bureau estimates the 2015 population of Virginia Beach to be 452,745. It is the most populous city in the Commonwealth of Virginia and 41st most populous city in the United States.¹ Between 2010 and 2015, the population of Virginia Beach increased by 3.4 percent (Table 1).

	2010 Census Population	2015 Population Estimate (as of July 1)	Percent Change
Virginia Beach	437,994	452,745	+3.4%
Virginia	8,001,024	8,382,993	+4.8%
United States	308,745,538	321,418,820	+4.1%

Table 1: Percent Change in Population, Virginia Beach, Virginia and the U.S., 2010 and 2015

Source: U.S. Census Bureau

AGE AND SEX DISTRIBUTION OF THE POPULATION

Figure 1 shows the population age and sex distribution in Virginia Beach. The city's population is estimated to be 49 percent male and 51 percent female. The male population is larger than the female population up through age group 35 to 39, but beginning with the age group 40 to 44, women outnumber men. The largest proportion of the population is between the ages of 25 and 44. Residents age 65 and older make up approximately 13 percent of the population.

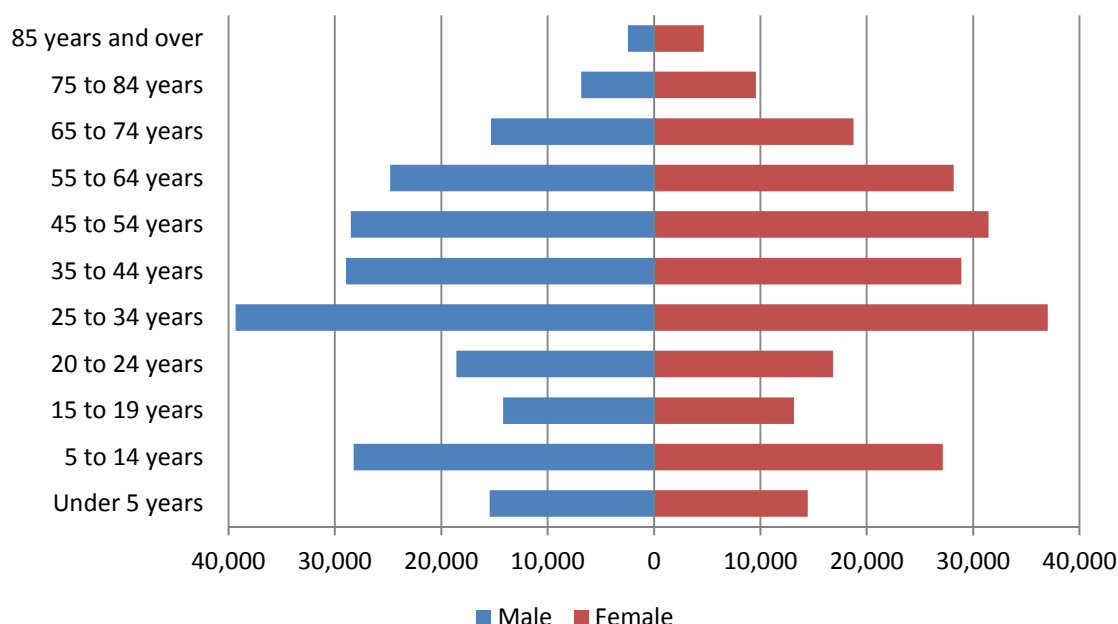


Figure 1: Population Estimates by Age and Gender, Virginia Beach, 2015

Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

In comparison to the state, Virginia Beach has a higher proportion of residents between the ages of 18 and 44 years old. The statewide proportion of residents 65 years and over is higher than that of Virginia Beach (Figure 2).

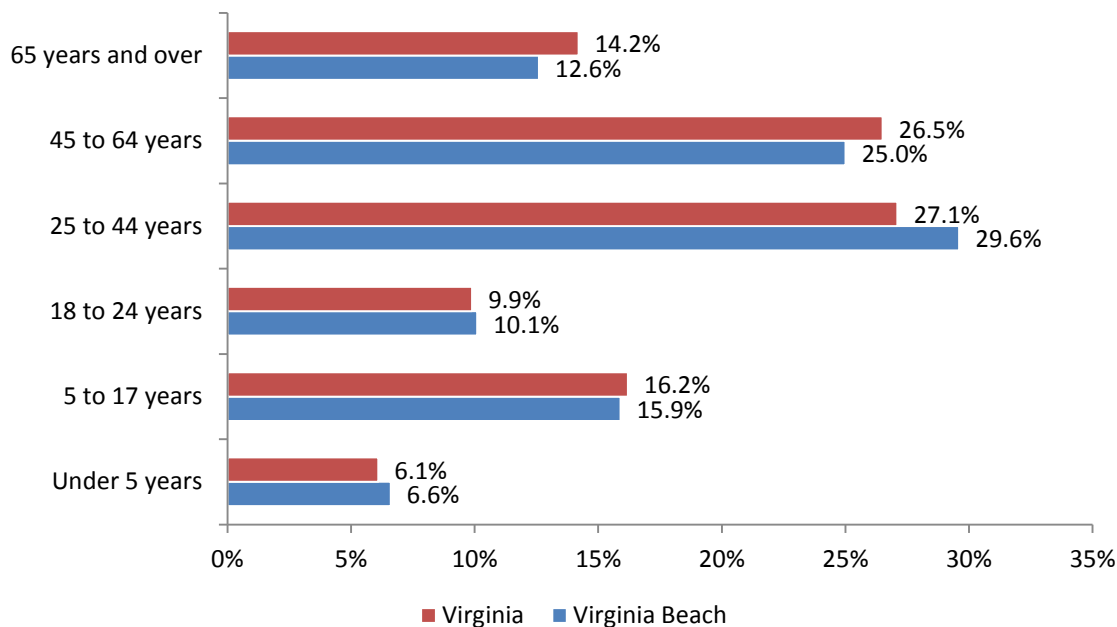


Figure 2: Population Estimates, Virginia Beach and Virginia, 2015
Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

Knowing the age of people who live in Virginia Beach is important to help meet age-specific health, social, and economic needs. Median age refers to the age where half of the population is younger and the other half is older. The median age of Virginia Beach residents is 34.5 years, slightly younger than the median age of Virginia (37.8 years) and the United States (37.8 years) (Figure 3).

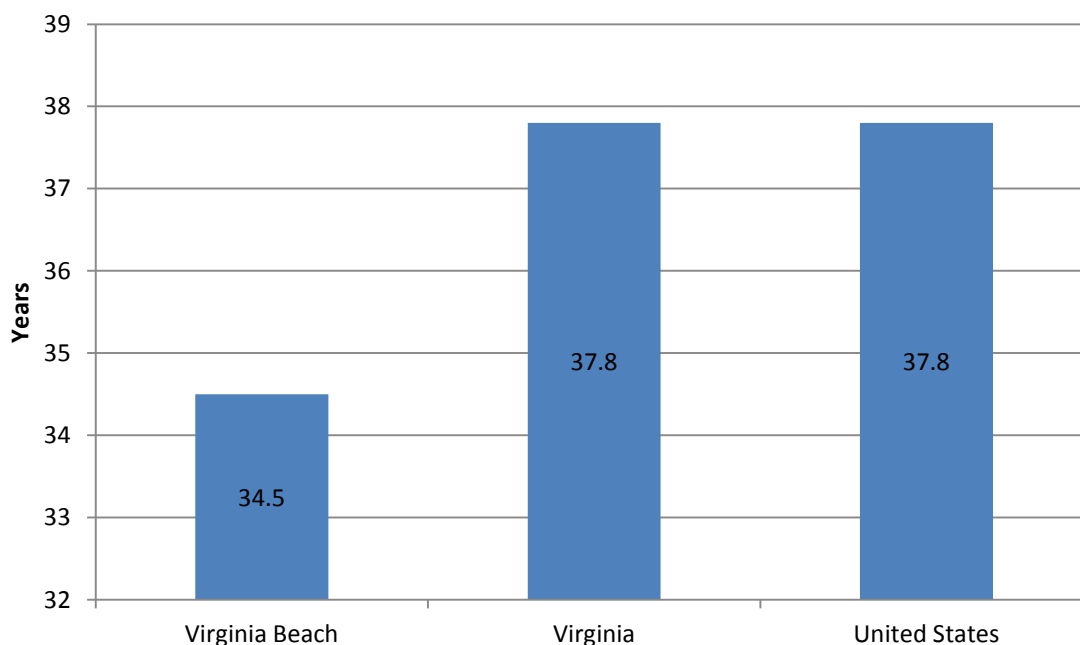


Figure 3: Median Age of Population, Virginia Beach, Virginia and the U.S., 2015
Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

RACIAL AND ETHNIC COMPOSITION OF THE POPULATION

The racial composition of Virginia Beach residents is shown in Figure 4. In 2015, 68.2 percent of residents were white, 20.1 percent were African American and 6.9 percent were Asian. Between 2010 and 2015, the Asian population grew faster than any other major race group in Virginia Beach (Table 2).

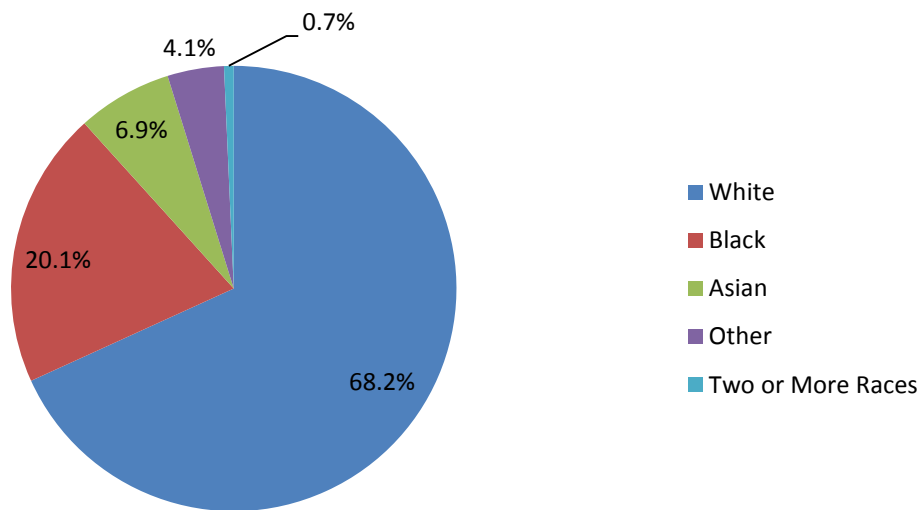
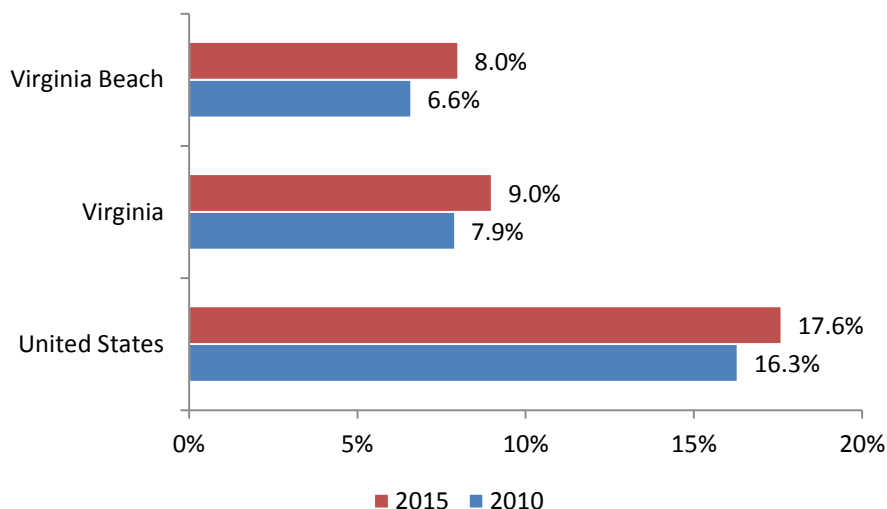


Figure 4: Racial Composition, Virginia Beach, 2015
Source: U.S. Census Bureau

	2010	2015
White alone	67.7%	68.2%
Black alone	19.6%	20.1%
American Indian and Alaska Native alone	0.4%	0.5%
Asian alone	6.1%	6.9%
Native Hawaiian and Other Pacific Islander alone	0.2%	0.2%
Two or More Races	4.0%	4.1%

Table 2: Race, Virginia Beach, 2010 and 2015
Source: U.S. Census Bureau Quick Facts



Hispanics were the city's fastest-growing racial/ethnic group in 2015. The percentage of Hispanic residents increased from 6.6 percent in 2010 to 8.0 percent in 2015; however, Virginia Beach has a smaller percentage of Hispanic residents compared to Virginia and the U.S. (Figure 5).

Figure 5: Hispanic Population Growth, Virginia Beach, Virginia and the U.S., 2010 and 2015
Source: U.S. Census Bureau

LANGUAGE

Language barriers pose significant challenges to providing effective and high-quality healthcare.² In 2015, 12.2 percent of the total population age 5 and over in Virginia Beach, or 51,421 residents, reported they spoke a language other than English at home (Table 3). Of those speaking a language other than English at home, 34.6 percent reported that they speak English “less than very well.”

Language Spoken at Home	Number	Percent
Persons age 5 years and older	422,987	(X)
English only	371,476	87.8%
Language other than English	51,421	12.2%
Spanish	17,533	4.1%
Other Indo-European languages	10,548	2.5%
Asian and Pacific Islander languages	21,216	5.0%
Other languages	2,124	0.5%

Table 3: Language Spoken at Home for Residents Ages 5 and Over, Virginia Beach, 2015
Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

PERSONS WITH DISABILITIES

According to the American Community Survey (ACS), the overall percentage of disability in Virginia Beach in 2015 was 10.8 percent. Among the six types of disabilities identified in the ACS: 6.3 percent of people in Virginia Beach of all ages reported having an ambulatory disability; 5.2 percent reported having an independent living disability; 4.4 percent had a cognitive disability; 2.0 percent had a vision disability; 2.2 percent had a hearing disability, and; 2.3 percent had a self-care disability. As illustrated in Figure 6, the percentage of people with disabilities grows as the population ages. Less than 3 percent of the Virginia Beach population under 18 years of age had a disability in 2015. For ages 18 to 64 the rate was 9.5 percent, while people ages 65 and over had a percentage of 31.5 percent.

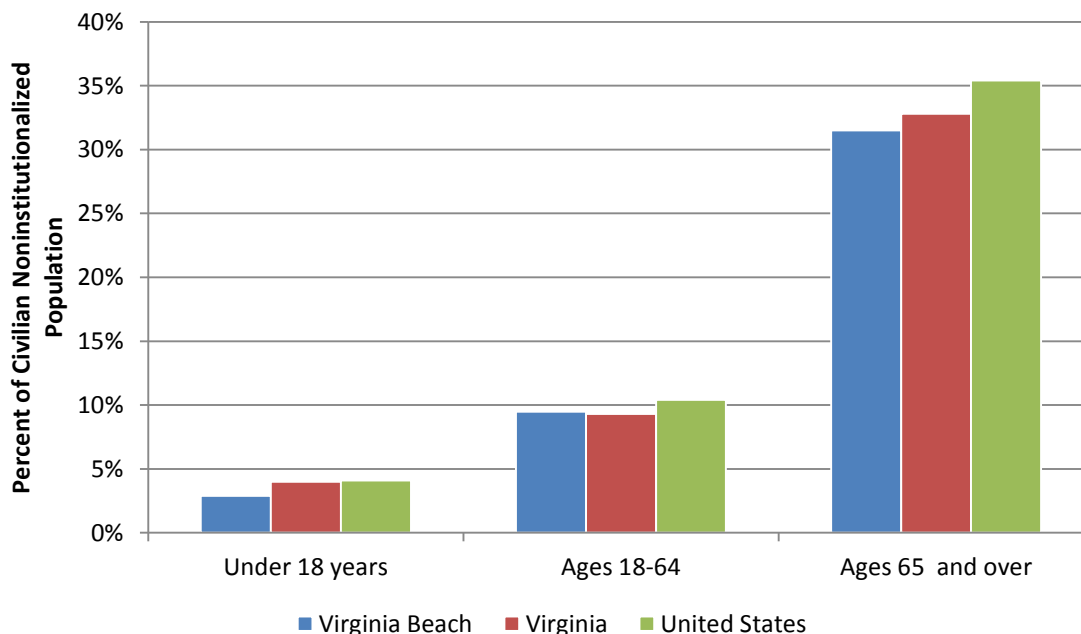


Figure 6: Age Distribution of Disability in the Population, Virginia Beach, Virginia and the United States, 2015
Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

EDUCATION

Educational Attainment

Education is one of the most powerful predictors of health. Research consistently shows that health outcomes improve with increasing years of education.³ People who are highly educated tend to be healthier and live longer. The city of Virginia Beach has a well-educated population. Nearly one-third (32.7%) of the city's residents have a bachelor's degree or higher, compared with only 30 percent of the national population. Further, Virginia Beach has a lower percentage of adults without a high school degree than Virginia and the U.S. (Figure 7).

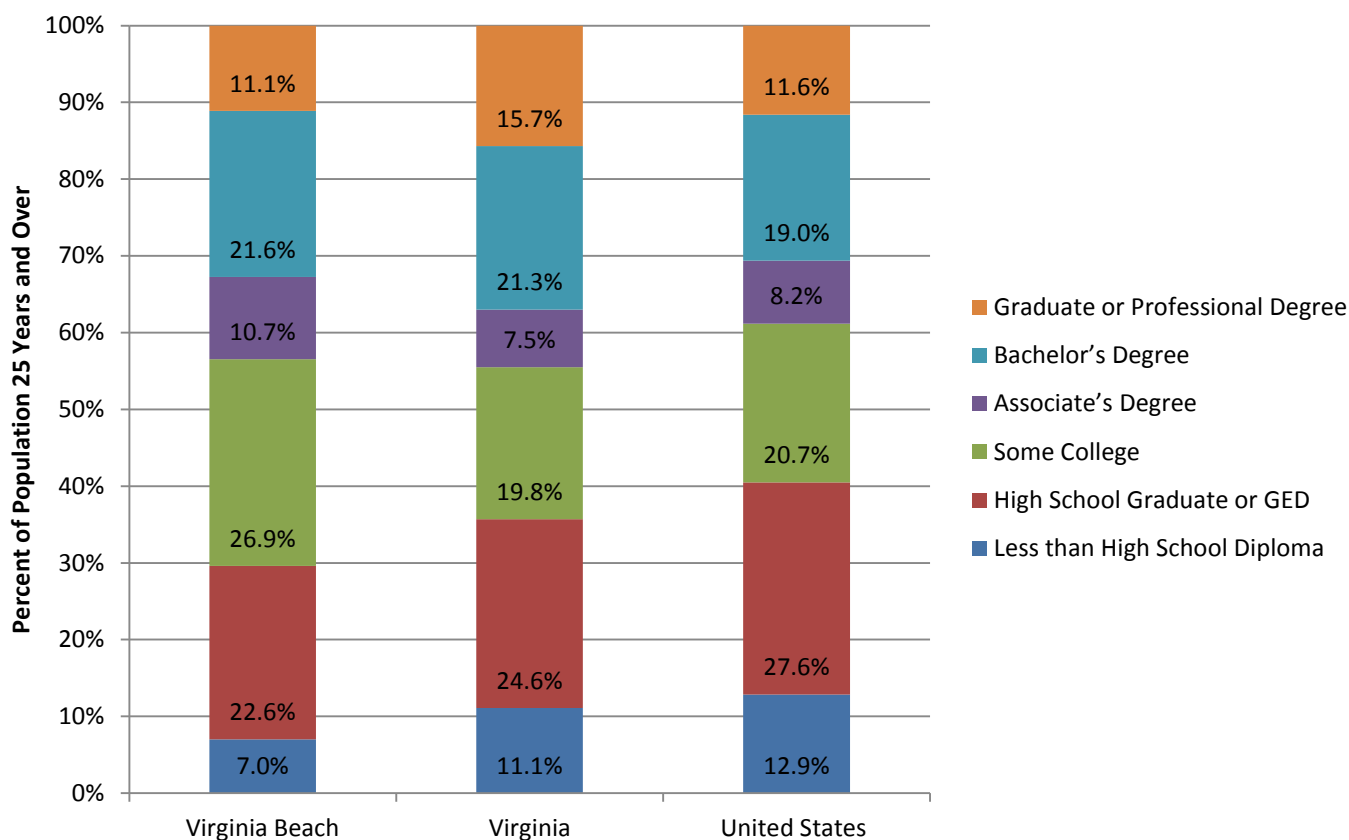


Figure 7: Educational Attainment, Virginia Beach, Virginia and the U.S., 2015

Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

Phonological Awareness Literacy Screening

According to a report by the University of Virginia’s Curry School of Education, “children who enter kindergarten behind their peers rarely catch up; instead, the achievement gap widens over time.”⁴ The Phonological Awareness Literacy Screening (PALS) provides a comprehensive assessment of young children’s knowledge of the important literacy fundamentals that are predictive of future reading success. PALS is the state-provided screening tool for Virginia’s Early Intervention Reading Initiative and is used by 99 percent of school divisions in Virginia on a voluntary basis.⁵

Over the last ten years, the city of Virginia Beach has made substantial progress in its efforts to strengthen students’ preparation for Kindergarten. From 2005 to 2014, the rate of those not achieving the minimum level of performance fell from 19 percent in 2005 to 10 percent in 2014 (Figure 8). The percent of Virginia Beach kindergarteners scoring below the benchmark is lower than the percent for the state as a whole. In the Fall of 2014, there 448 were kindergarteners in the city who did not achieve the minimum level of performance.

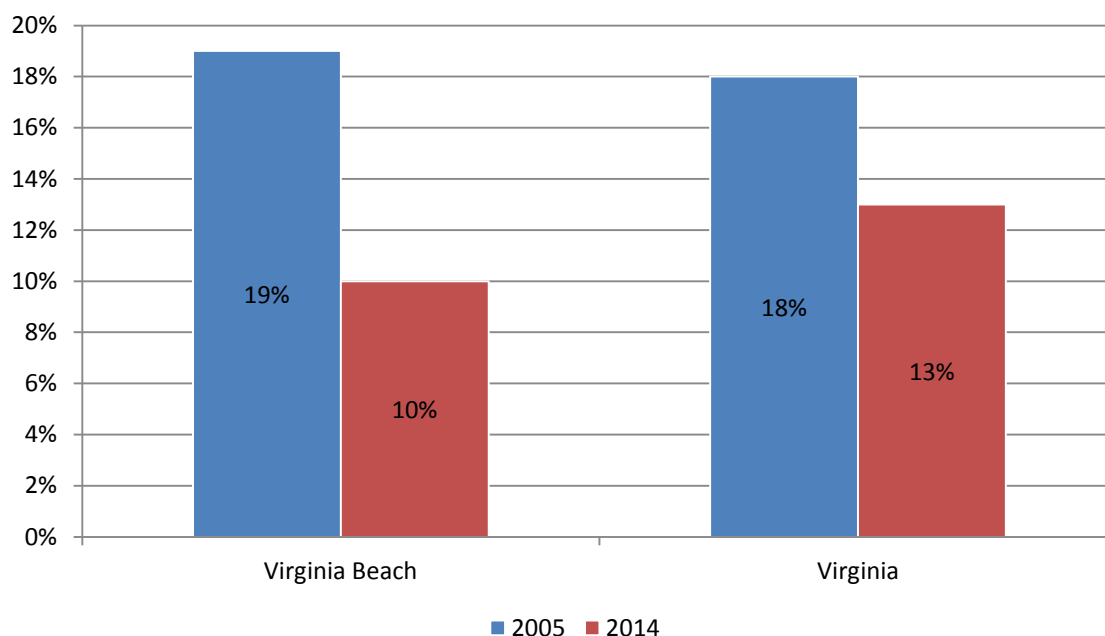


Figure 8: Percent of Public School Kindergartners Not Meeting PALS-K Benchmark, Virginia Beach and Virginia, 2005 and 2014
Source: Smart Beginnings South Hampton Roads (2005-2010); Voices for Virginia’s Children (2011-2014)

On-time Graduation Rate

In the last seven years, Virginia Beach has increased its on-time graduation rate from 84 percent to 90 percent (Figure 9). The city's graduation rate for males (88%) in 2014-2015 was 4 percentage points lower than that of females (92%). That gap has slightly narrowed since 2012-13.

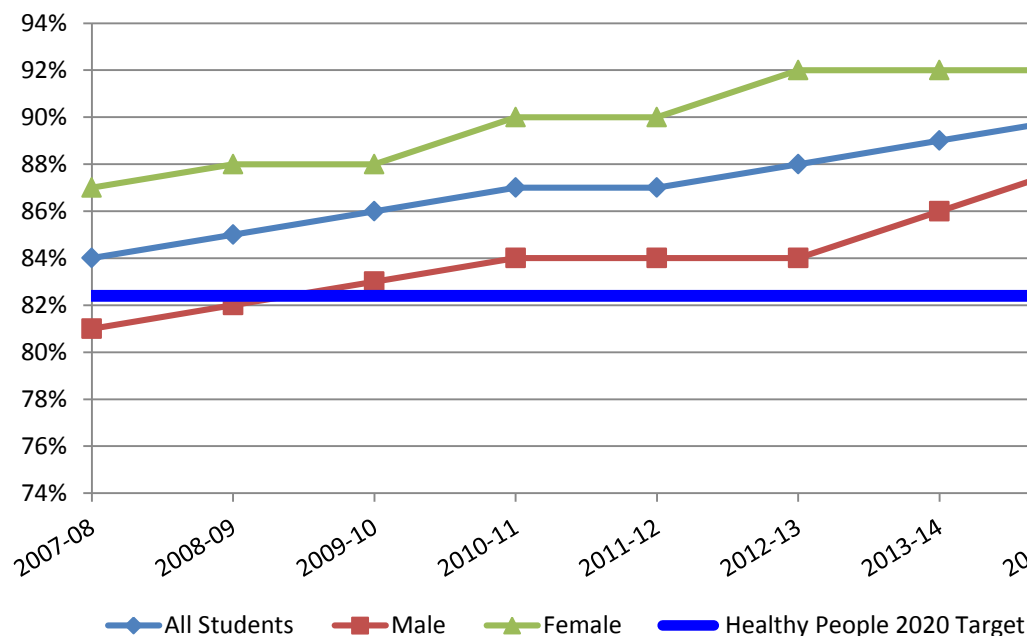


Figure 9: Percent of Public School Students Graduating On-Time by Gender, Virginia Beach, 2007-2015

Source: Virginia Department of Education

As shown in Figure 10, racial disparities in the city's graduation rates still persist. In 2014-2015, the city's on-time graduation rate was 5 percentage points lower for black students than white students.

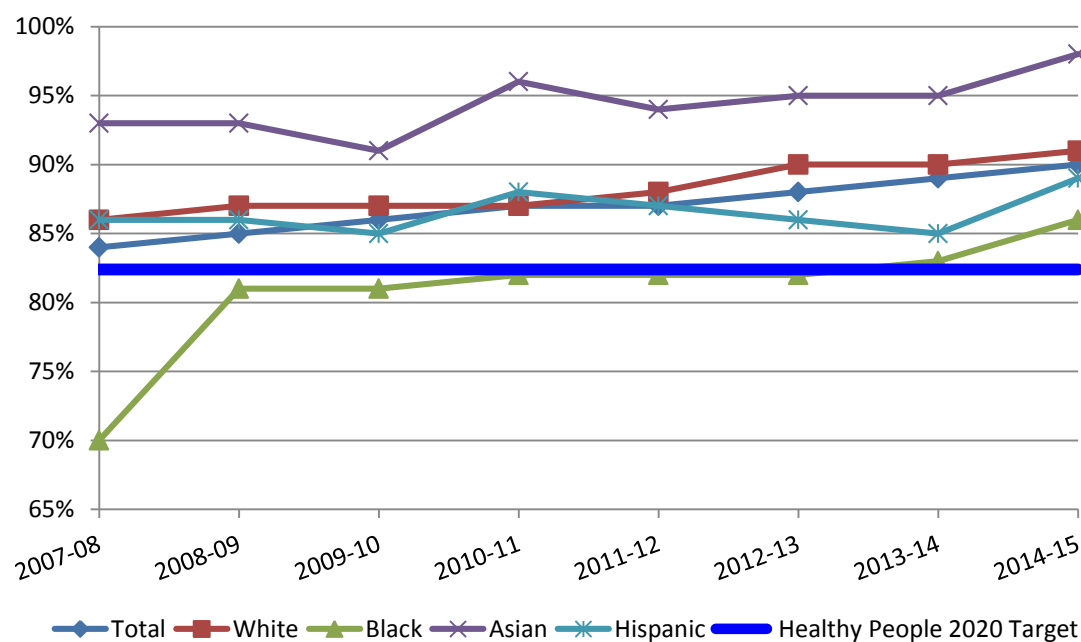


Figure 10: Percent of Public School Students Graduating On-Time by Race and Ethnicity, Virginia Beach, 2007-2015

Source: Virginia Department of Education

Socioeconomics

MEDIAN HOUSEHOLD INCOME

Household income is the sum of every person's income in a household. Median household income is the midway point of all household incomes, where half of the households in Virginia Beach earn less and the other half earn more. Households with higher incomes have more opportunities to be healthy and tend to live longer. Between 2005 and 2015, the city of Virginia Beach experienced an increase in median household income, which followed state and national trends (Figure 11). In 2015, the median household income in Virginia Beach was \$67,032, an increase of 15.1 percent from the 2010 median income of \$58,238.

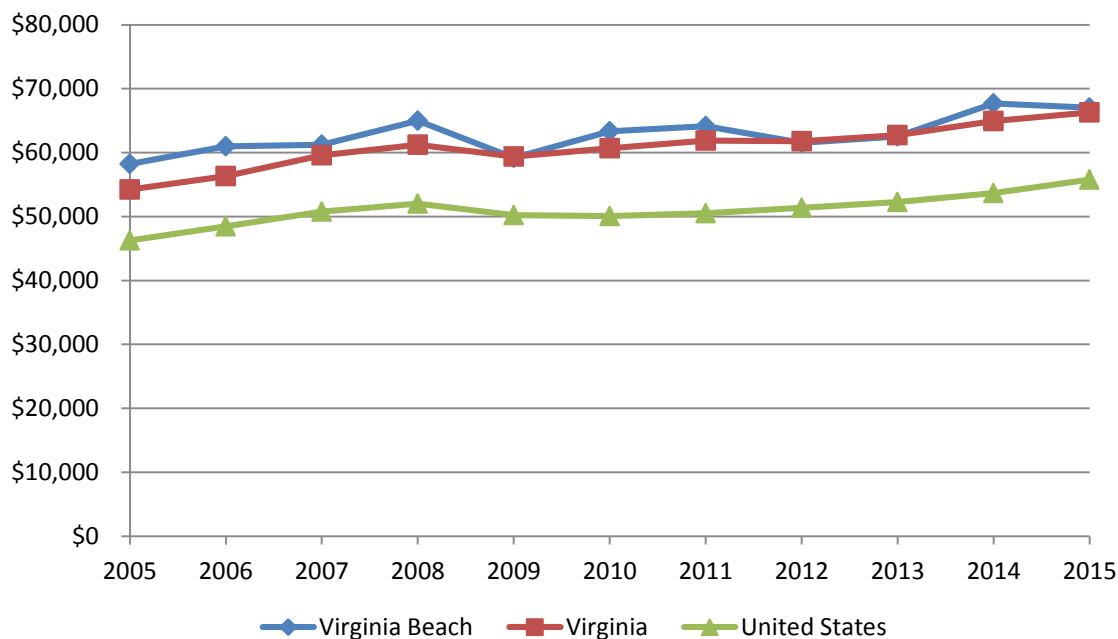
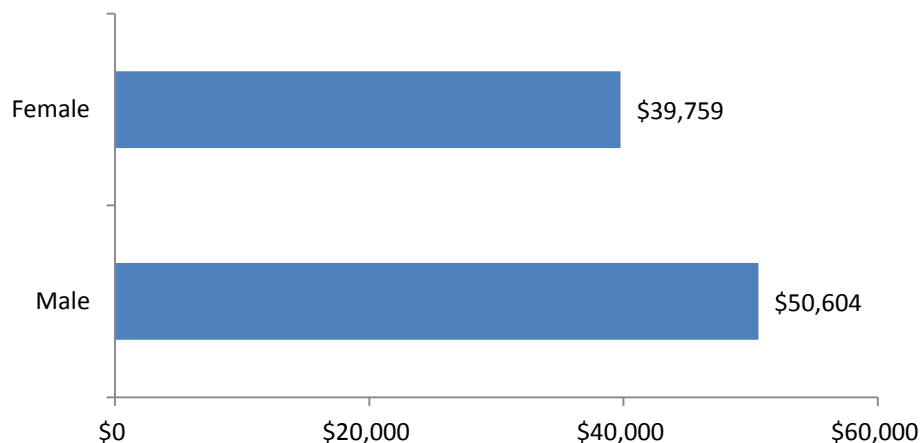


Figure 11: Median Household Income, Virginia Beach, Virginia, and the U.S., 2005-2015
Source: U.S. Census Bureau, Small Area Income and Poverty Estimates



The average median earnings of women who worked full time, year-round was approximately 79 percent of that for men working full time, year-round in Virginia Beach between 2010 and 2014 (Figure 12).

Figure 12: Average Median Earnings for Full-Time Year-Round Workers by Sex, Virginia Beach, 2010-2014
Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

POVERTY

Poverty has a significant impact on health status and outcomes; individuals with lower incomes report poorer health and higher risk of disease. Federal poverty guidelines issued by the U.S. Department of Health and Human Services serve as a simplified version of poverty thresholds. For administrative purposes, such as determining eligibility for certain federal programs, these guidelines are referred to as the Federal Poverty Level (FPL). Incomes at 100 percent FPL in 2015 were set at \$11,770 for an individual and \$24,250 for a family of four.⁶ Between 2005 and 2015, the city of Virginia Beach consistently had a lower percentage of residents living in poverty than Virginia and the U.S. (Figure 13). The city's poverty rate decreased again in 2015, from 8.6 percent in 2014 to 8.2 percent, and remains well below the national rate of 15.5 percent.

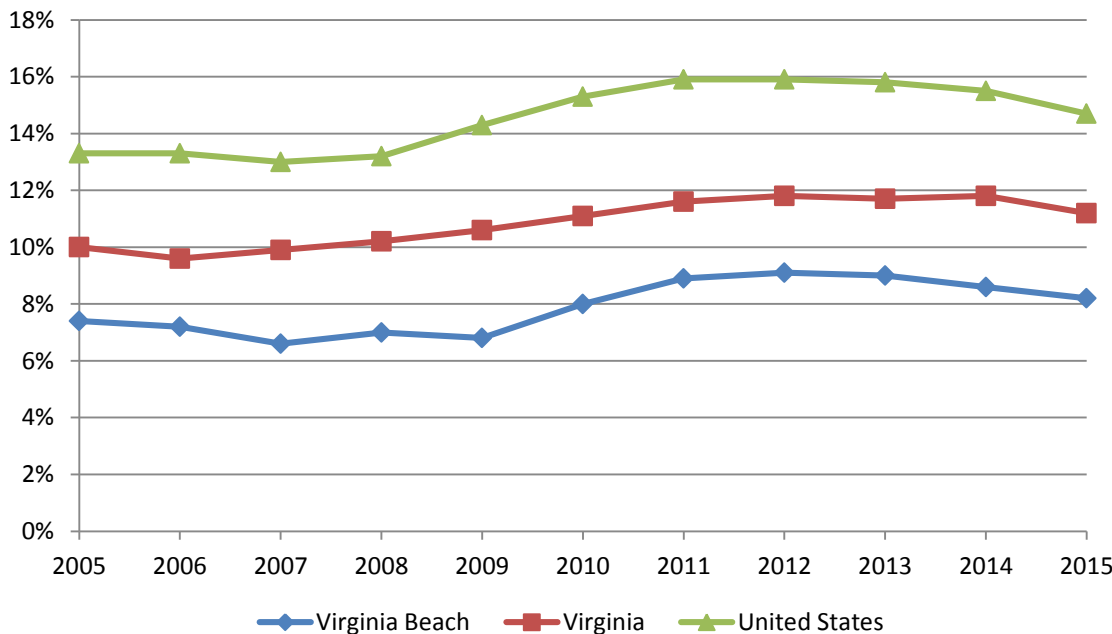


Figure 13: Percent of Persons in Poverty, Virginia Beach, Virginia, and the U.S., 2005-2015

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program

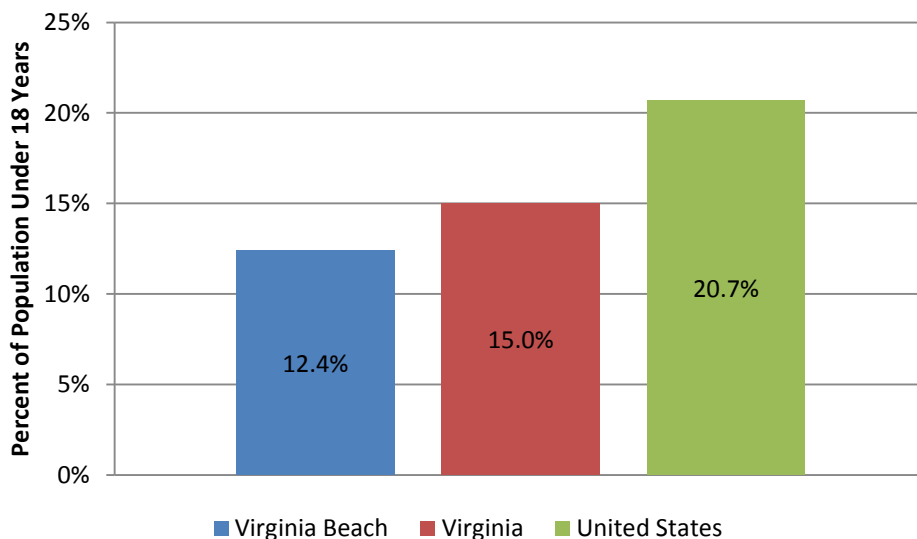


Figure 14: Percent of Children in Poverty, Virginia Beach, Virginia, and the U.S., 2015

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program

In 2015, 12.4 percent of children in Virginia Beach were living below the poverty level. This is considerably lower than the national rate of 20.7 percent, or more than 1 in 5 U.S. children, living below the poverty level (Figure 14). Children who live in poverty are likely to suffer from poor nutrition during infancy, experience emotional distress, and have an increased risk for academic failure and teenage pregnancy.

Free and Reduced School Lunch Program

Another indicator of poverty is the percentage of children receiving free and reduced-priced meals under the National School Lunch Program. Children are eligible for free school meals if their family's household income is less than 130 percent of the Federal Poverty Level (FPL) and for reduced-price meals if their household income is between 130 percent and 185 percent of the FPL.

The city of Virginia Beach experienced a steady increase in the number of students enrolled for free or reduced price meals from 2004 through 2015, which was similar to the state trend. During the 2014-2015 school year, approximately 36 percent of Virginia Beach students qualified for free or reduced lunch compared to 42 percent of all Virginian students (Figure 15).

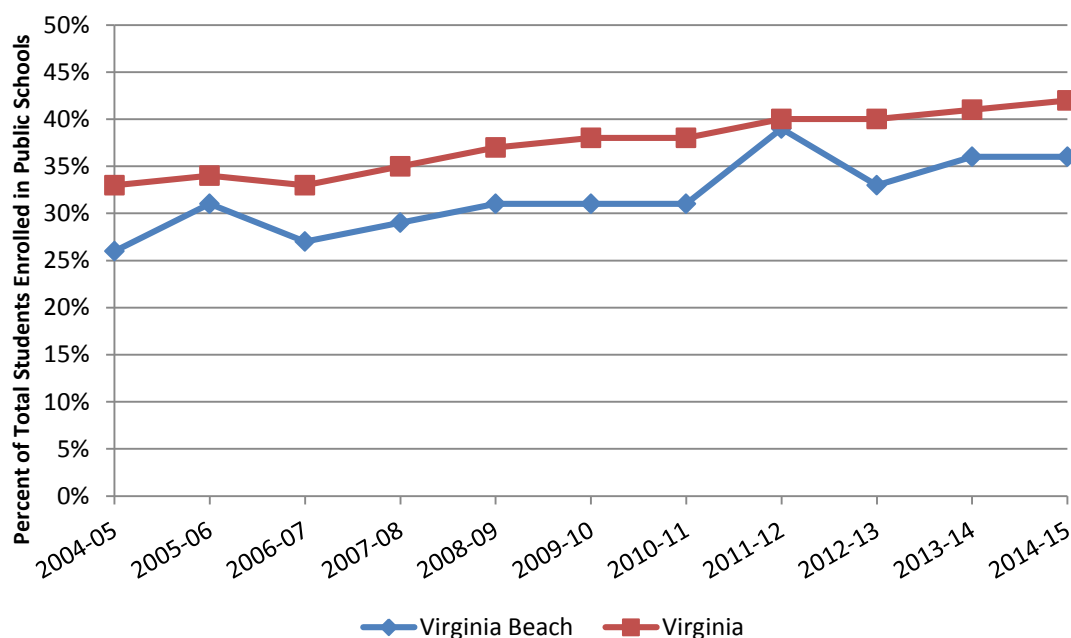


Figure 15: Percent of Students Eligible for Free and Reduced Price Lunch, Virginia Beach and Virginia, 2004-2015

Source: Virginia Department of Education

HOMELESSNESS

The Point-in-Time (PIT) is a one-day unduplicated count of sheltered and unsheltered homeless individuals and families across the United States. The U.S. Department of Housing and Urban Development (HUD) requires that the City of Virginia Beach conduct the PIT count to continue receiving federal funds through the Continuum of Care. The program is designed to promote community wide commitment to the goal of ending homelessness. HUD uses data from the count to help determine how much funding each Continuum of Care will receive. The data collected from the count also enables the city to assess the size and characteristics of the homeless population to help develop and enhance strategies for preventing and ending homelessness.

Data collected during the annual PIT Count conducted in January 2016 shows there were 389 persons experiencing homelessness in Virginia Beach, a decline of 8 percent, or 34 people, since 2015 (Figure 16).

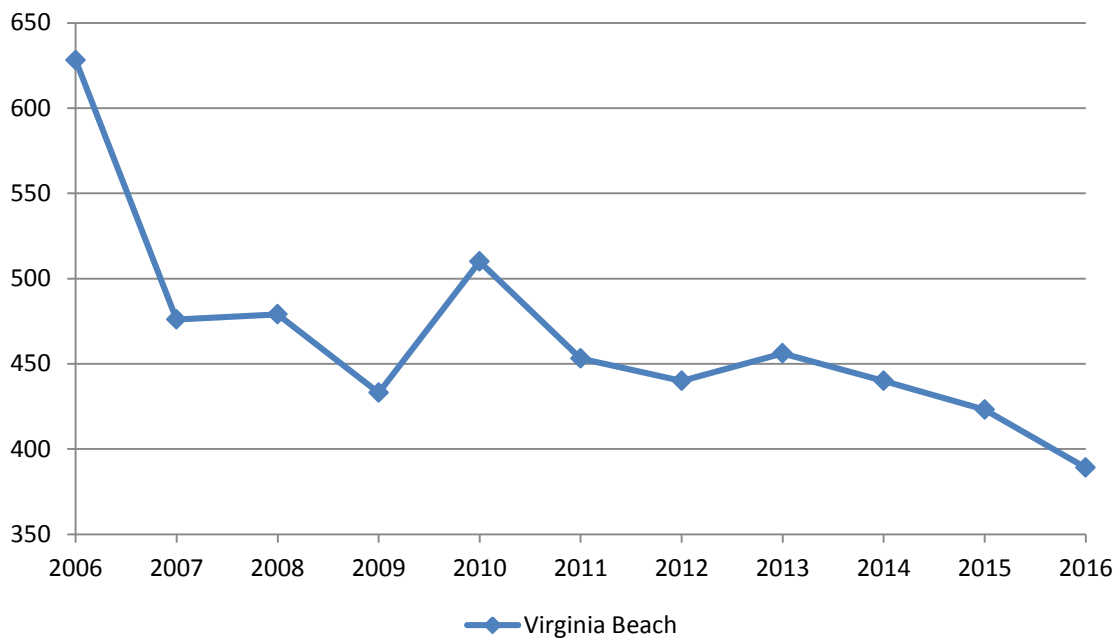


Figure 16: Number of Persons Experiencing Homelessness, Virginia Beach, 2006-2016
 Source: South Hampton Roads Annual Point-in-Time Counts available from The Planning Council

Table 4 shows the 2016 Virginia Beach PIT Count by subpopulations categories.

	Sheltered	Unsheltered	Total Population
Chronically Homeless	19	8	27
Severely Mental Ill	65	15	90
Chronic Substance Abuse	25	12	37
HIV/AIDS	0	0	0
Victims of Domestic Violence	52	5	57

Table 4: Point-in-Time Subpopulations Summary, Virginia Beach, 2016
 Source: South Hampton Roads Annual Point-in-Time Counts available from The Planning Council

Annual Point-in-Time Count Key Findings

On a single night in January 2016

- 389 people were homeless in Virginia Beach; 87% or 339 were sheltered and 13% or 50 were unsheltered.
- The majority of homeless people (72%) were adults, while 28% were children under the age of 18.
- Men made up 54% of the homeless population, women represented 46% of all homeless people, and transgender people made up 0.3% of the homeless population.
- The breakdown of the homeless population by race and ethnicity shows that 36.0% were white, 56.3% were African American, 2.8% were two or more races, 0.8% were Native American, 0.3% were Asian, 0.5% were Native Hawaiian/Other Pacific Islander, and the remaining 3.3% had missing data on race. 30 individuals (7.7%) identified as Hispanic or Latino.
- There were 40 homeless veterans in Virginia Beach. Homeless veterans accounted for over 14 percent of all homeless adults.

UNEMPLOYMENT

Unemployment includes people who are actively looking for work but are not employed. People who are unemployed are more likely to have poor physical and mental health. The unemployment rates in Virginia Beach and Virginia have remained below that of the nation for the last decade. The unemployment rate in the city and state saw large increases during the Great Recession of 2007-2009. However, the city and state rates were consistently lower than the national rates during the period 2005-2015. The city's unemployment rate peaked in 2010 (6.5%) and decreased to 4.3 percent by 2015 (Figure 17).

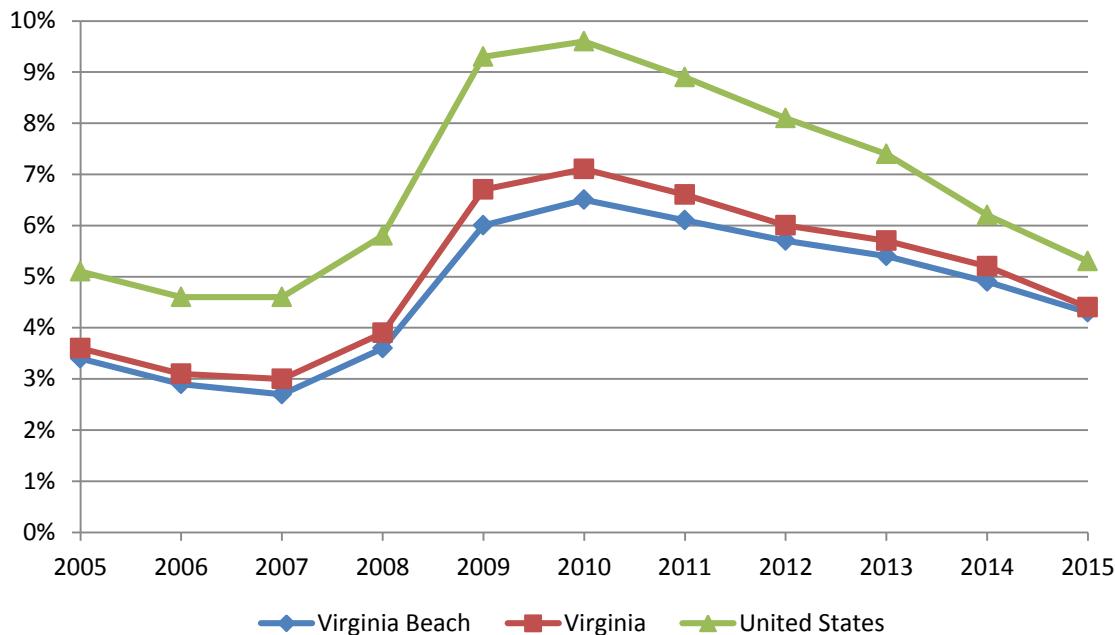


Figure 17: Unemployment Rate, Virginia Beach, Virginia and the United States, 2005-2015

Source: Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics

Health Resource Availability

HEALTH INSURANCE

Health insurance makes a difference in whether and when people get necessary medical care, where they get their care, and ultimately, how healthy they are. Going without coverage can have serious health consequences for the uninsured because they receive less preventive care, and delayed care often results in more serious illness requiring advanced treatment.⁷ According to U.S. Census data, 11.2 percent of the Virginia Beach population was medically uninsured in 2014 compared to 12.4 percent of the state (Figure 18). This is a decrease of more than 7,580 people from 2013.

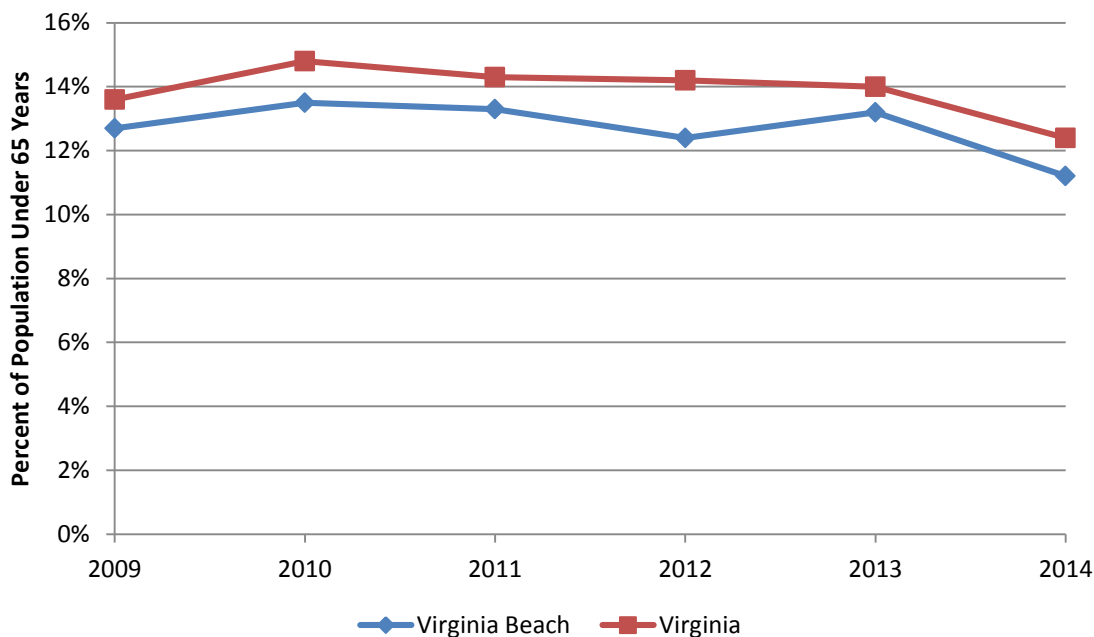


Figure 18: Percent of Estimated Uninsured Persons Under 65 years, Virginia Beach and Virginia, 2009-2014
Source: U.S. Census Bureau, Small Area Health Insurance Estimates (SAHIE)

Provider to Residents Ratio

Access to care requires not only financial coverage, but also, access to providers. Table 5 depicts the ratio of providers to residents in Virginia Beach. The ratios for the state are also given for comparison. The data table highlights a disparity in provider to resident ratios between the city and state and across provider types.

	Virginia Beach	Virginia
Ratio of Population to Primary Care Physicians (2013)	1,320:1	1,330:1
Ratio of Population to Dentists (2013)	1,400:1	1,570:1
Ratio of Population to Mental Health Providers (2015)	650:1	680:1
Ratio of Population to Primary Care Providers Other Than Physicians ⁸ (2013)	1,388:1	1,530:1

Table 5: Provider to Residents Ratios, Virginia Beach and Virginia, 2013 and 2015
Source: County Health Rankings; Area Health Resource File/American Medical Association

Health Professional Shortage Area

The federal Health Professional Shortage Area (HPSA) designation identifies an area or population as having a shortage of dental, mental, and primary health care providers. HPSA designations are used to qualify for state and federal programs aimed at increasing primary care services to underserved areas and populations. A HPSA designation is based on several criteria established by federal regulation, including population to provider ratios. As of November 2016, the city of Virginia Beach was not designated as a shortage area for primary care physicians, dentists or mental health providers.⁹

Health Facility Capacity

There are a large number of hospitals and medical centers located in Virginia Beach, with Sentara Healthcare the largest provider. It operates three outpatient care facilities and two acute care hospitals in Virginia Beach. Sentara Princess Anne Hospital is a 160- bed acute care hospital and Sentara Virginia Beach General Hospital is a 276-bed acute care facility offering specialized, tertiary services. In addition to Sentara, there are several other full-service acute-care hospitals in the region, with some offering long-term care and psychiatric services. There are also a number of specialty hospitals in the region including the Children's Hospital of The Kings Daughters, Virginia's only free- standing, full service pediatric hospital (Table 6).

Hospital	Specialty
Children's Hospital of The King's Daughters*	Children/pediatric
Eastern State	Psychiatric
Hampton Roads Specialty	Long-term acute care
Lake Taylor Transitional Care	Long-term acute care
Navy Medical Center Portsmouth	Military personnel
Riverside Behavioral Health Center	Psychiatric
Riverside Rehabilitation Institute	Rehabilitation
Sentara Hospital for Extended Recovery	Long-term acute care
Veterans Affairs Medical Center	Veterans
Virginia Beach Psychiatric Center*	Psychiatric

*Have locations in the city of Virginia Beach

Table 6: Specialty Hospitals in Hampton Roads

Source: Virginia Beach Department of Economic Development, Virginia Beach Community Profile 2015-2016

Free and Income Based Clinics in Virginia Beach

The city of Virginia Beach has two free clinics specifically focused on serving residents who are medically uninsured or low income.

Beach Health Clinic

Established in 1986, Beach Health Clinic is a non-profit organization that provides quality, comprehensive health and dental care to Virginia Beach residents (between the ages of 2 and 65 years old) who are uninsured and earn less than 200 percent of the federal poverty level.

Virginia Beach Family Medical Center

Virginia Beach Family Medical Center is the only Federally Qualified Health Center (FQHC) located in the city of Virginia Beach and provides primary care services for adults and children. While insurance is accepted, services are provided on an income-based, sliding scale fee for people without insurance.

Mental Health Services

Services for people in need of mental health services and substance abuse treatment are necessary to maintain the community's wellness. A community services board (CSB) is the point of entry into the publicly-funded system of services for mental health, intellectual disability, and substance abuse. CSBs provide pre-admission screening services 24-hours per day, 7 days per week. Figure 19 shows that since 2012, there has been an increase in the number of individuals receiving mental health services from the Virginia Beach Community Services Board (VBCSB). In 2015, 4,324 individuals (unduplicated) received VBCSB mental health services. VBCSB is one of 40 local CSB's or Behavioral Health Authorities throughout the Commonwealth of Virginia. Each is dedicated to promoting service accessibility and providing a continuum of care for persons with disabilities and chemical addiction. Community based services are delivered by the Virginia Beach Department of Human Services Mental Health and Substance Abuse division and Developmental Services division.

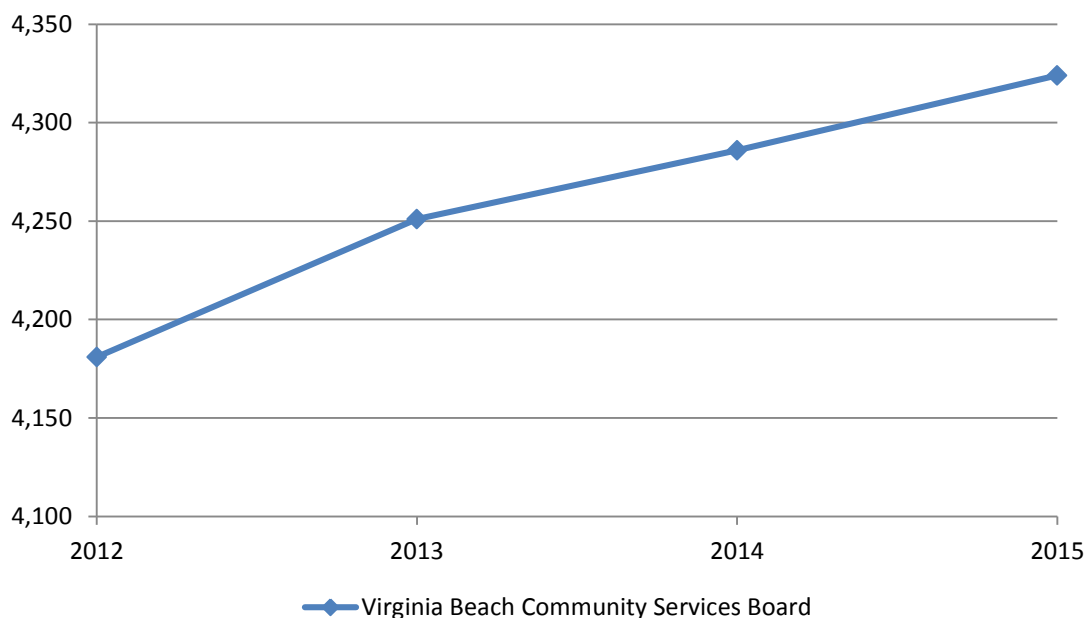


Figure 19: Persons Receiving Community Mental Health Services, Virginia Beach, 2012-2015

Source: Virginia Department of Behavioral Health and Developmental Services

Additional mental health facilities in Virginia Beach include:

- Kempsville Center for Behavioral Health
- Virginia Beach Psychiatric Center
- Sentara Behavioral Health Specialists

Public Health

The Virginia Beach Department of Public Health (VBDPH), a state-city cooperative agency, provides a range of services aimed at promoting healthy behaviors; preventing diseases and injuries; and protecting the environment to ensure access to safe food and water. Additionally, it prepares for and responds to public health emergencies. Direct services include immunization, family planning, maternity, and communicable disease clinics; maternal-child case management; Women, Infant and Child (WIC) food and nutrition support; dental clinic for children; vital records; environmental health inspections (food, pools, beach water, hotels, on-site septic and wells); education classes; and more.

Community Resources

AFFORDABLE HOUSING

Studies show that affordable housing can improve health outcomes by freeing up family resources to pay for health care and healthy food.¹⁰ High housing-related costs place a particular economic burden on low-income families. Figure 20 shows the percentage of cost burdened renters for 2010 and 2014 for households earning less than \$20,000 per year. A household is considered cost burdened if paying more than 30 percent of its household income for housing. In 2014, 95 percent of renter households earning less than \$20,000 a year in Virginia Beach were cost burdened compared to 89 percent in Virginia and the U.S. This represents 8,094 households in the city.

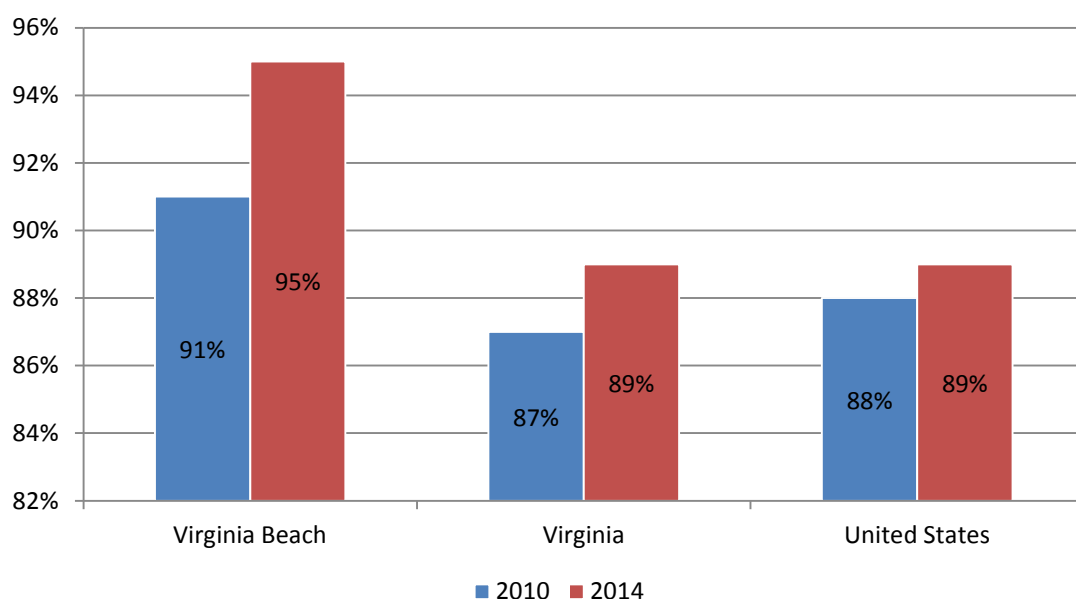


Figure 20: Percent of Cost Burdened Renters for Households Earning Less than \$20,000/Year, Virginia Beach, Virginia and U.S., 2010 and 2014
Source: U.S. Census Bureau, 2010 and 2014 American Community Survey 1-Year Estimates

TRANSPORTATION

Affordable and reliable transportation is essential for a healthy community. Public transit provides access to jobs, schools, grocery stores, health care, opportunities to socialize, and other resources beneficial to health. People with access to public transit walk and bike more than those without access and also drive less, which reduces automobile-related emissions.

Commuting Patterns

Between 2010 and 2014, the majority (81.8%) of Virginia Beach workers, age 16 and over, drove alone to work. Less than 1 percent of Virginia Beach workers took public transportation to work compared to 4.5 percent of workers statewide and 5.1 percent of workers nationwide (Table 7). Among those driving alone to work, 32 percent of commuters in Virginia Beach drove longer than 30 minutes compared to 38 percent in the state of Virginia. A recent study in the American Journal of Preventative Medicine found that the farther people commute by vehicle, the higher their blood pressure and body mass index.¹¹

The average travel time for Virginia Beach workers between 2010 and 2014 was just over 23 minutes, about 5 minutes shorter than the state average (Figure 21).

	Virginia Beach	Virginia	United States
Workers 16 years and over	231,508	3,964,601	141,337,148
Car, truck, or van – drove alone	81.8%	77.5%	76.4%
Car, truck, or van – carpooled	8.4%	9.6%	9.6%
Public transportation (excluding taxicab)	0.9%	4.5%	5.1%
Walked	2.6%	2.4%	2.8%
Other means	1.7%	1.5%	1.8%
Worked at home	4.6%	4.6%	4.4%

Table 7: Commuting Patterns, Virginia Beach, Virginia and the U.S., 2010-2014
Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

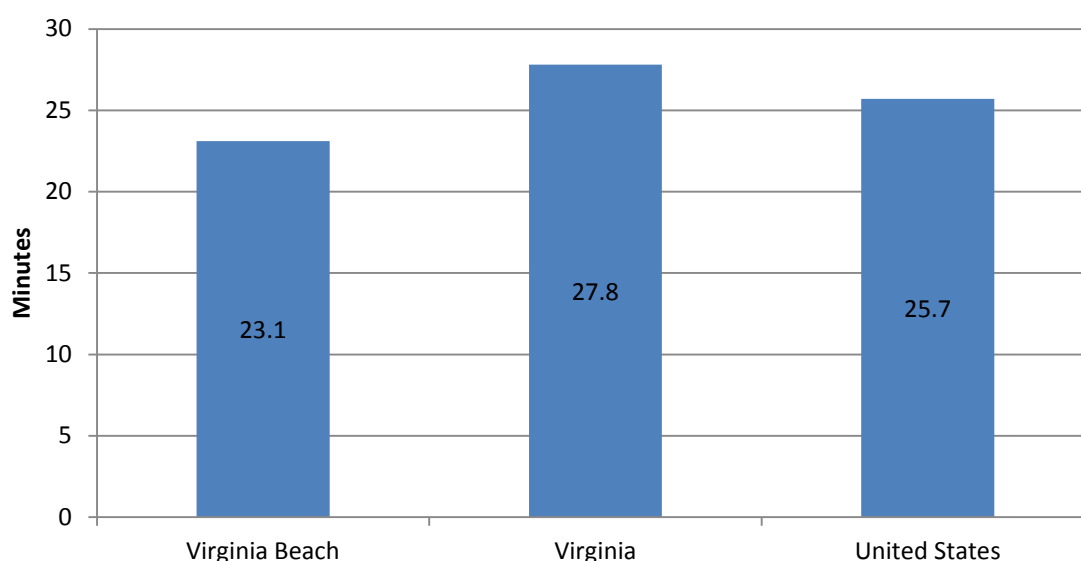


Figure 21: Mean Travel Time to Work (Minutes), Workers Age 16 Years+, Virginia Beach, Virginia and the U.S., 2010-2014
Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

Hampton Roads Transit

Hampton Roads Transit (HRT) is the public transportation provider for the region. HRT bus services connect the cities of Norfolk, Portsmouth, Virginia Beach, Chesapeake, Hampton and Newport News. In Virginia Beach, HRT operates 19 bus routes and 3 VB Wave Shuttle routes. HRT also provides paratransit services for people with disabilities. Hampton Roads Transit's Paratransit service is an origin-to-destination, shared-ride service serving the cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach. Hampton Roads Transit provides Paratransit services to and from locations within three-quarters of a mile of their existing fixed-route services using a variety of vehicles, including lift-equipped vans.¹²

Virginia Beach is currently in the process of doubling bus services — going from 110,000 hours a year to 229,000 hours a year. This includes adding two new bus lines, running buses more often during the day and expanding service on nights and weekends.¹³ Current maps and schedules can be found online at gohrt.com.

Bikeways and Trails

The bikeway and trail system serves an important function as part of the transportation network. Pedestrian and bicycle activities have always been a part of many outdoor recreation opportunities in Virginia Beach. Since 2011, the city's system of bikeways and trails has grown to 97 miles on-road and 137 miles off-road.¹⁴

RECREATIONAL FACILITIES AND PARKS

The role of the built environment is important for encouraging physical activity. Individuals who live closer to sidewalks, parks, and gyms are more likely to exercise.^{15,16,17} Virginia Beach has numerous outdoor spaces for people to stay active, socialize and enjoy the city's natural beauty. According to the Virginia Beach Parks and Recreation Department's 2016 Annual Report, 58 percent of Virginia Beach residents live within a 10 minute walk to a park.¹⁸

City Parks

Virginia Beach is home to 293 parks and park facilities, encompassing over 7,093 acres, including neighborhood and community parks, metro parks, signature parks, natural areas, waterway accesses, trail linkages, open space preservation areas and park athletic facilities. [Click here](#) to search for parks and facilities in Virginia Beach by name, proximity and specific features like playgrounds, ball fields, kayak launches and more.

Recreation Centers

The city of Virginia Beach has 7 community recreation centers, each with indoor swimming pools, cardio equipment, gymnasiums, and fitness areas.

FOOD STORES

Residents with better access to supermarkets and limited access to convenience stores tend to have healthier diets and lower levels of obesity.¹⁹ In 2012, fast-food restaurants²⁰ and convenience stores²¹ combined made up 49.5 percent of available food stores in Virginia Beach while grocery stores²² made up only 6.6 percent. Full-service restaurants²³ (40.9%) were the most prevalent type of food store in Virginia Beach (Figure 22).

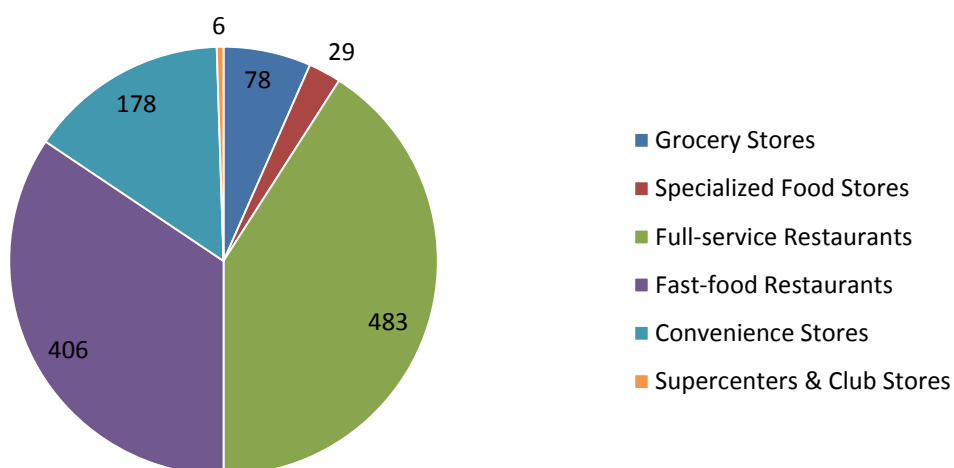


Figure 22: Food Stores by Type, Virginia Beach, 2012

Source: U.S. Department Of Agriculture, Food Environment Atlas

FOOD DESERTS

Limited access to healthy foods plays a significant role in poor dietary decisions. The online Food Desert Locator, developed by the U.S. Department of Agriculture's (USDA) Economic Research Service (ERS), is a tool that can be used to assist efforts to expand the availability of nutritious food in food deserts, or low-income communities that lack ready access to healthy food. A food desert is a low-income census tract where either a substantial number or share of residents has low access to a supermarket or large grocery store. "Low income" tracts are defined as those where at least 20 percent of the people have income at or below the federal poverty levels for family size, or where median family income for the tract is at or below 80 percent of the surrounding area's median family income. Tracts qualify as "low access" tracts if at least 500 persons or 33 percent of their population live more than a mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles).²⁴

Under these income and food access criteria, 8 census tracts in the city of Virginia Beach meet the definition of a food desert (Figure 23). These food desert tracts contain approximately 10,300 people with low access to sources of healthful food.

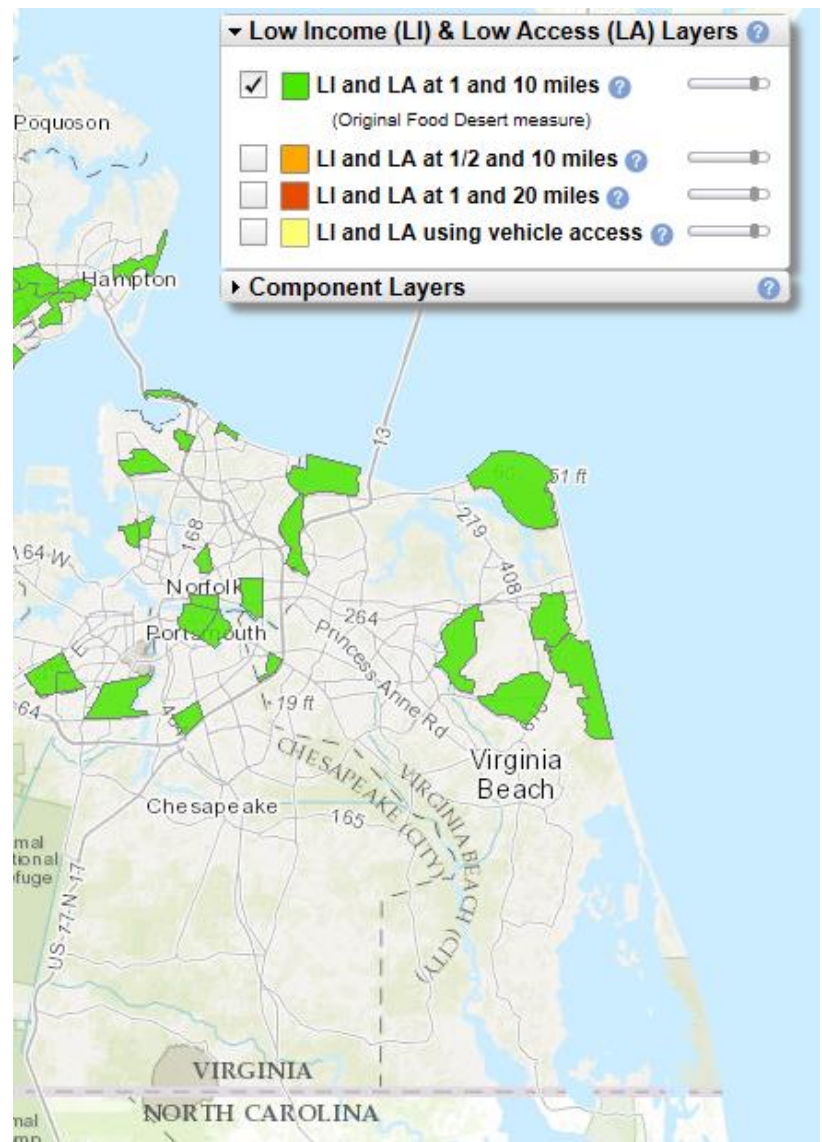


Figure 23: Food Deserts, Virginia Beach, 2016

Source: United States Department of Agriculture Economic Research Service

SCHOOLS

Primary and Secondary Education

High-quality education creates pathways to better health. The Virginia Beach City Public Schools system (VBCPS) is the largest school division in Hampton Roads. It is composed of 55 elementary schools, 15 middle schools, 11 high schools, 1 charter school and 5 secondary/post-secondary specialty centers.²⁵ To help prepare students for the workforce, VBCPS offers expanded academic choices. These include six school-within-a-school academies, three advanced academic programs, and one gifted program. English as a second language (ESL) classes also are offered across the school system to students whose home language is other than English and who have limited English proficiency.

	Students Grades - K-12
Student Enrollment	67,927
White	50.2%
Black/African-American	23.7%
Hispanic/Latino	10.9%
American Indian/Alaska Native	0.2%
Asian	5.7%
Native Hawaiian/Pacific Islander	0.5%
Multirace	8.8%
Female	48.8%
Male	51.2%
Economically disadvantaged	37.0%
Gifted	12.6%
Limited English proficiency	1.8%
Students with disabilities	10.0%

Table 8: Student Characteristics as of the Fall, Virginia Beach City Public Schools, 2015-2016

Source: Virginia Beach City Public Schools

Higher Education

There are a number of institutions of higher learning are available in and around the city of Virginia Beach, including:

- Christopher Newport University
- College of William and Mary
- Eastern Virginia Medical School
- Hampton University
- Norfolk State University
- Old Dominion University
- Regent University
- Tidewater Community College
- Virginia Wesleyan College

Other private and public colleges operate satellite campuses in the Virginia Beach area, including the University of Virginia, Virginia Tech, Saint Leo University, Troy University and The George Washington University.

HEALTH OPPORTUNITY INDEX

The Virginia Health Opportunity Index (HOI), which was first developed in 2012 as part of the Virginia Health Equity Report, provides a composite measure of the social determinants of health – the social, economic, educational, demographic and environmental factors that relate to a community’s well-being.

The Virginia HOI consists of 13 indicators that act as the building blocks of the HOI. These indicators were chosen following an extensive review of the literature on the Social Determinants of Health (SDOH). Although there are innumerable variables and indicators that could be included, indicators were chosen based on the following criteria:

- Their influence on health as expressed in the literature
- Input from Local Health Districts and other stakeholders
- The availability of data of consistent quality at the Census Tract level for all Census Tracts in Virginia

Those 13 indicators are organized into four profiles:

1. Community Environmental (indicator of natural, built and social environment)
2. Consumer Opportunity (measure of consumer resources available)
3. Economic Opportunity (measure of economic opportunities available, highlighting employment and income)
4. Wellness Disparity (measure of disparate access to health services)

The bars represent the proportion of the population living in Census Tracts in Virginia Beach at each opportunity level. Figure 24 shows that 36 percent of residents (159,650 of 442,151) in the city of Virginia Beach live in Census Tracts with a Very Low (signifying the least opportunity to be healthy) or Low opportunity score in the Health Opportunity Index. Although the individual experiences of residents will vary, people living in these communities may have more difficulty living healthy lives and making healthy choices.

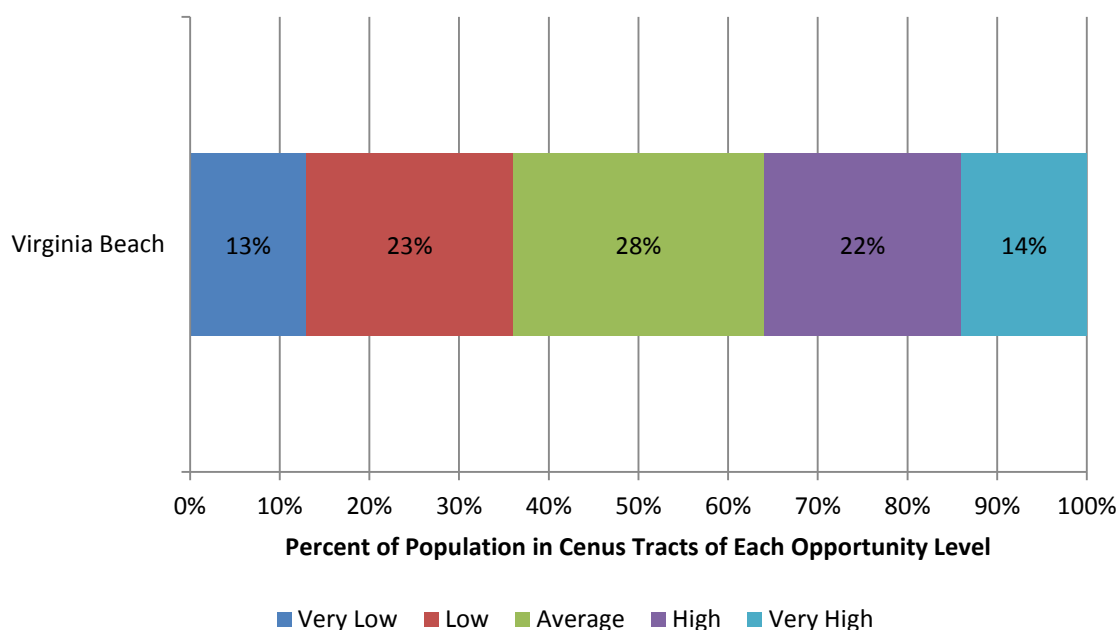


Figure 24: Health Opportunity Index, Virginia Beach, 2015

Source: Virginia Department of Health, Office of Health Equity

Health opportunity varies significantly block by block and street by street within Virginia Beach. Figure 25 shows the health opportunity at the Census Tract level in Virginia Beach. The darker colors on the map correspond to areas with higher levels of health opportunity and the lighter colors to areas with lower levels of health opportunity.

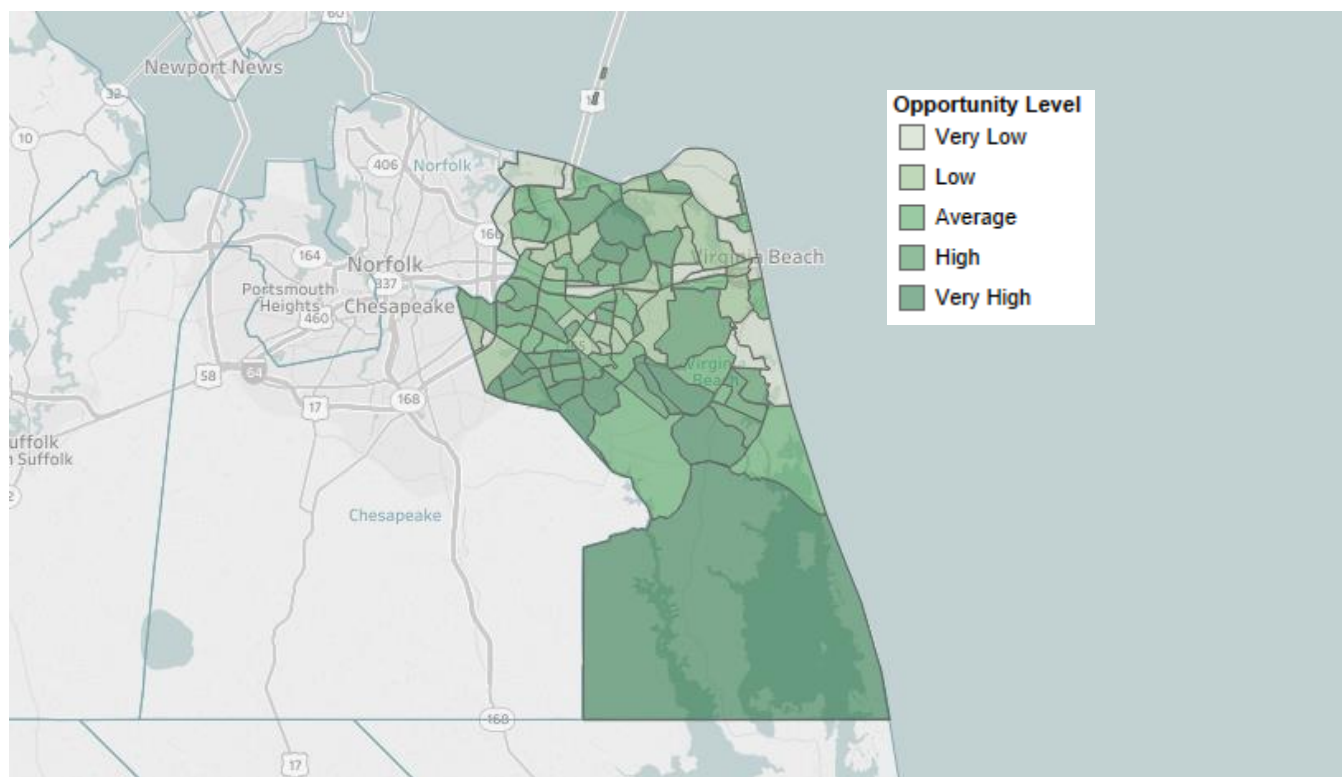


Figure 25: Health Opportunity Index by Census Tract, Virginia Beach, 2015
Source: Virginia Department of Health, Office of Health Equity

Community Safety

Community safety reflects not only violent acts in neighborhoods and homes, but also injuries caused unintentionally through accidents. High crime rates can deter residents from engaging in healthy behaviors such as exercising outdoors. In addition, exposure to crime and violence has been shown to increase stress. Unsafe neighborhoods can cause anxiety and depression, and are linked to higher rates of pre-term births and low birthweight babies, even when income is accounted for.²⁶

CRIME

The Virginia Beach Police Department maintains crime statistics and annually submits data to the Virginia State Police. Data is published through the Incident Based Reporting – Uniform Crime Report system. Crime is categorized into “Group A” (violent and more serious offenses) and “Group B” (less serious offenses).

In 2015, there were 23,169 Group A Offenses reported in the city of Virginia Beach, corresponding to an incident rate of 5,108.93 incidents per 100,000 residents.

	Virginia Beach		Virginia	
	Number	Rate per 100,000	Number	Rate per 100,000
Murder/Nonnegligent Manslaughter	19	4.19	382	4.56
*Forcible Sex Offenses	196	43.22	5,097	60.80
Robbery	272	59.98	4,459	53.19
Aggravated Assault	236	52.04	9,318	111.15
Arson	95	20.95	886	10.57
Burglary	946	208.60	21,068	251.32
Larceny	8,640	1,905.18	128,930	1,537.99
Motor Vehicle Theft	444	97.91	8,103	96.66
Destruction/Damage/Vandalism	3,596	792.94	57,719	688.52
Drug/Narcotic Offenses	2,954	651.38	56,100	669.21
Prostitution	38	8.38	1,124	13.41

*Forcible Sex Offenses includes forcible rape, forcible sodomy, sexual assault with an object, and forcible fondling

Table 9: Group A Offenses, Virginia Beach, 2015

Source: Department of State Police, Virginia Uniform Crime Reporting Program, Crime in Virginia Report

VIOLENT CRIME

The rate of violent crime is a measure of how safe people are in their neighborhoods and communities. In Virginia Beach, the number of violent crimes including murder and nonnegligent manslaughter, rape, robbery, and aggravated assault has steadily declined since 2009. In 2015, the violent crime rate for the city was 138.3 per 100,000 population compared to 195.6 statewide. Nationally, the violent crime rate rose 3.1 percent, from 361.6 per 100,000 residents in 2014 to 372.6 in 2015 (Figure 26).

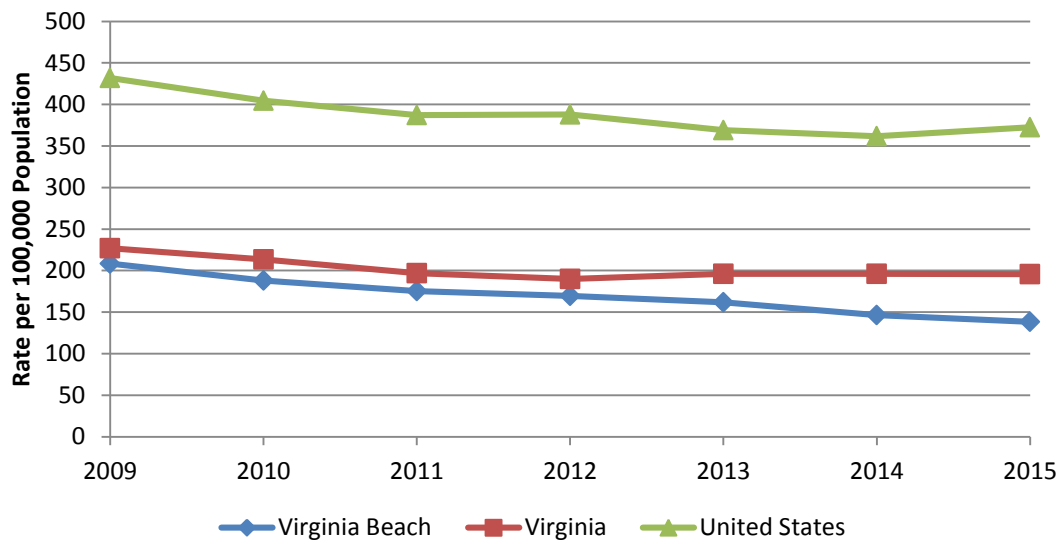


Figure 26: Violent Crime (Murder, Forcible Sex Offenses, Robbery and Aggravated Assault), Virginia Beach, 2009-2015

Source: Federal Bureau of Investigation (FBI), Uniform Crime Reporting Program, Crime in the United States

JUVENILE CRIME

Juvenile crime can harm families, schools and communities. In 2015, there were 1,439 arrests of juveniles between the ages of 10 and 17 in Virginia Beach, a decrease of 55.1 percent since 2009 (Figure 27). Of the 1,439 juvenile arrests in 2015, 52 were for violent crimes including forcible sex offenses, robbery and aggravated assault.

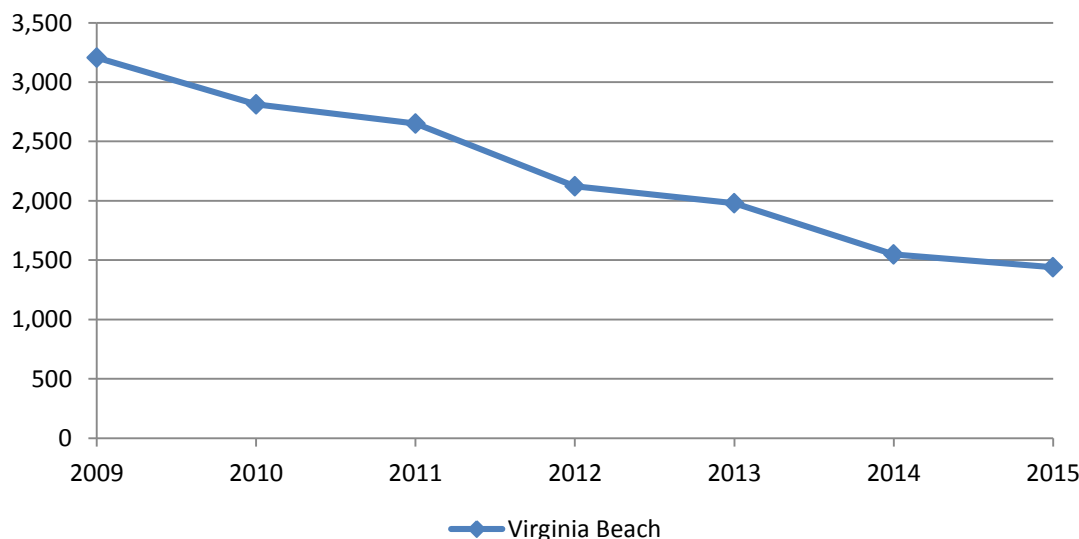


Figure 27: Juvenile Arrests, Virginia Beach, 2009-2015

Source: Department of State Police, Virginia Uniform Crime Reporting Program, Crime in Virginia Report

ALCOHOL AND DRUG-RELATED CRIME

According to the National Council on Alcohol and Drug Dependence (NCADD), alcohol and drugs are implicated in an estimated 80 percent of criminal offenses in the United States. Alcohol in particular was found to be closely associated with violent crimes, including murder, rape, and assault.²⁷ From 2010 to 2014, the number of arrests for public drunkenness in Virginia Beach decreased by over 930, from over 4,010 to around 3,080. The city's rate of 683 per 100,000 population is its lowest since 2010, yet it is still substantially higher than the state and nation as a whole (Figure 28).

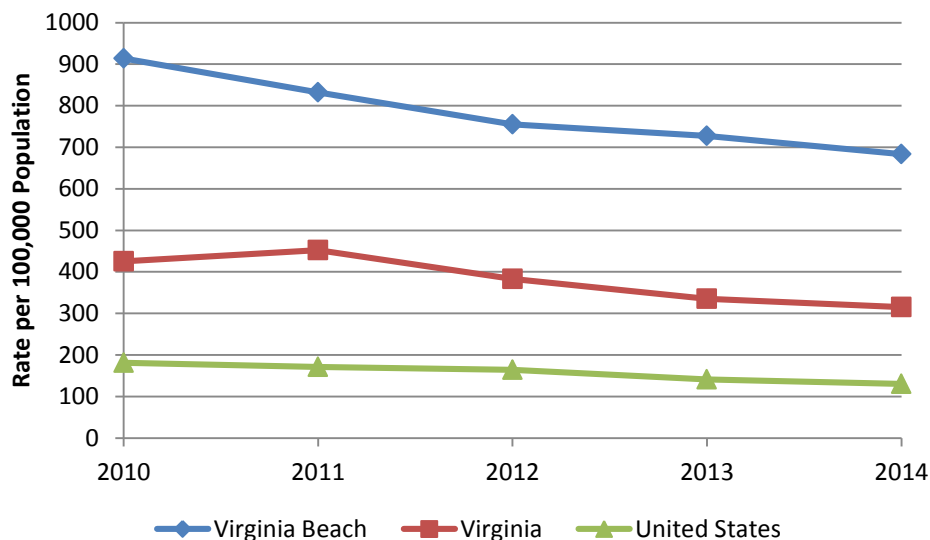


Figure 28: Arrests for Public Drunkenness, Virginia Beach, Virginia, and the U.S., 2010-2014

Source: The Planning Council, An Investment in Priorities, 2016 Edition

Virginia Beach's rate for drug and narcotic offenses was 651 per 100,000 people in 2015. This rate has increased since 2009, when the rate was 543 per 100,000 residents (Figure 29). According to the Virginia Beach Police Department's 2015 annual report, law enforcement made an estimated 1,882 arrests for drug abuse violations in 2015. Of these arrests, 288 were for sale/manufacturing of drugs and 1,594 were for possession of drugs.²⁸

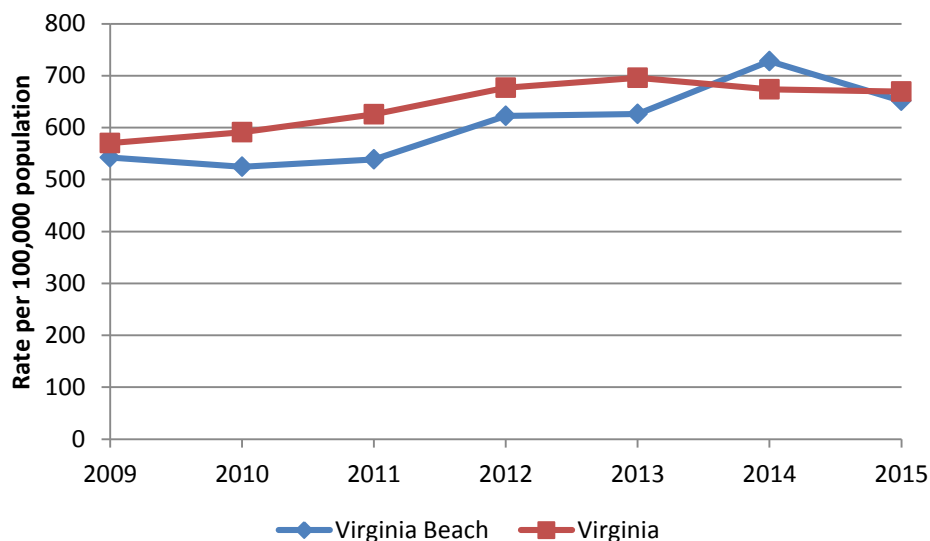


Figure 29: Drug and Narcotic Offenses Rate per 100,000 Population, Virginia Beach and Virginia, 2009-2015

Source: Department of State Police, Virginia Uniform Crime Reporting Program, Crime in Virginia Report

DOMESTIC AND INTIMATE PARTNER VIOLENCE

Intimate partner violence (IPV) is a serious, preventable public health problem that affects millions of Americans.²⁹ The most recent data, from the 2014 Family and Intimate Partner (FIP) Homicide Report, indicate that in 2014, 4.5 percent of all homicides in Virginia Beach were attributed to family and intimate partner violence.³⁰ There were 5 FIP homicide deaths in Virginia Beach in 2014. These deaths occurred at a rate of 1.1, representing a 13 percent decrease from 2013 (1.5). Compared to other localities in the state, Virginia Beach had the fourth highest number of FIP Homicides in 2014.

CHILD ABUSE

Data from the Virginia Department of Social Services shows that there were 390 founded reports of child abuse and neglect in Virginia Beach in 2016, a decrease of 155 cases since 2011-12 (Figure 30). The most common type of abuse was neglect -- a failure to provide adequate food, shelter, clothing, or supervision (Table 10).

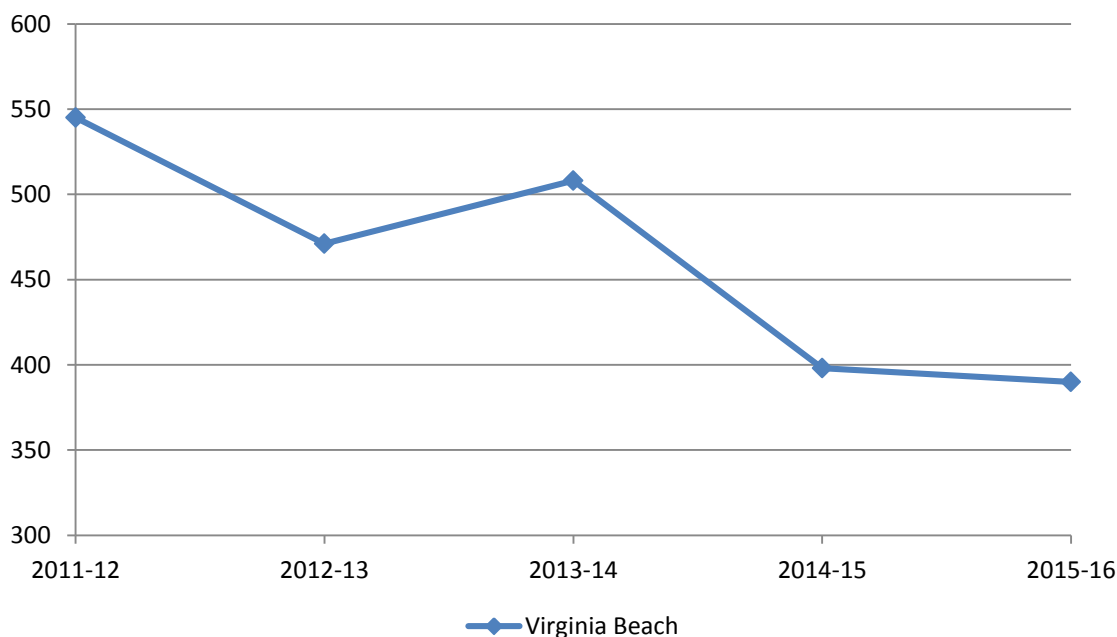


Figure 30: Founded Child Abuse and Neglect, Virginia Beach, 2011-2016

Source: Virginia Department of Social Services

Abuse/Neglect Type	Referrals	Accepted	Family Assessment	Investigated	Founded	Appealed	Unfounded
Invalid	2,867	5	5	0	0	0	0
Medical Neglect	64	53	28	25	12	2	11
Mental Abuse/Neglect	15	15	13	2	1	0	1
Physical Abuse	727	670	437	229	116	29	80
Physical Neglect	1,291	1,170	774	394	229	28	129
Sexual Abuse	119	106	0	97	30	12	50
Substance Exposed Infants	15	14	11	3	2	0	1
Total	5,098	2,033	1,268	750	390	71	272

Table 10: Virginia Child Protective Service, Accountability Referrals Type of Abuse Annual Report, Virginia Beach, July 1, 2015 to June 30, 2016

Source: Virginia Department of Social Services

Environmental Quality

AIR QUALITY

Maintaining a healthy environment, especially air and water, leads to increased quality of life and improved community health.³¹ Studies have shown that several air pollutants, most notably ozone and fine particulate matter, can contribute to increased morbidity and mortality. According to the 2016 County Health Rankings, the average daily density of fine particulate matter in micrograms per cubic meter (PM2.5) in the city of Virginia Beach is 11.8 compared to 12.7 in Virginia.

LEAD EXPOSURE

Childhood lead poisoning is considered the most preventable environmental disease among young children.³² Lead exposure can lead to damage of the brain, kidneys, nervous and at high levels can cause seizures, coma, and death.³³ In 2015, there were no confirmed cases of elevated blood lead levels in children under 6 years of age in Virginia Beach (Table 11).

	Population < 72 Months	Number Confirmed Elevated	Confirmed Blood Level Category				
			10-14 µg/dL	15-19 µg/dL	20-44 µg/dL	45-69 µg/dL	≥ 70 µg/dL
Virginia Beach	34,899	0	0	0	0	0	0
Virginia	611,895	211	118	47	44	2	0

Note: 2010 U.S. Census Population Data were used. Results based on one test per child per year. A confirmed elevated blood lead level (EBLL) is defined as a single elevated venous test ≥ 10 µg/dL or two elevated capillary tests within 84 days/12 weeks and is only counted once in the year in which it initially occurred.

Table 11: Reported confirmed elevated blood lead levels (EBLLs), children under 72 months of age, Virginia Beach and Virginia, 2015

Source: Lead-Safe Virginia Program, Virginia Department of Health, 2015 Surveillance Summary Report

WATER QUALITY

Drinking Water

Water for the city of Virginia Beach is provided by the Virginia Beach Department of Public Utilities. The 2016 Virginia Beach Water Quality Report shows the city's water is of a higher quality than that required by all state and federal health and safety standards for drinking water. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Since beginning its lead sampling program in 1992, Virginia Beach's water has never exceeded federally mandated maximum levels. In the most recent sampling period (January 1 through December 31, 2015) none of the samples tested were above 15 ppb (parts per billion) and in 90 percent of the samples lead was not detectable.³⁴

Beach Water Monitoring

Bacteria levels in beach water are monitored at 46 public beaches in Virginia during the swimming season (May to September). Water samples are collected weekly by Local Health Departments and analyzed by local laboratories for enterococci bacteria. If bacteria levels exceed Virginia's Water Quality Standard of 104 colony forming units (cfu)/100 mL of water, a swimming advisory is issued.³⁵ Two swimming advisories were issued in Virginia Beach during the 2016 swimming season (Appendix A). For both cases, water quality returned to normal and the beaches were deemed safe for swimming within one day.

Health Behaviors

A healthy lifestyle is one in which individuals eat nutritious foods, regularly engage in physical activity, avoid smoking and substance abuse, limit alcohol use, and get regular medical checkups. Living an unhealthy lifestyle often results in lost workdays, lower productivity, and negative health outcomes, including chronic disease; it also strains private and government health care resources.³⁶

OVERWEIGHT AND OBESITY

Overweight and obesity are major contributors to preventable death. Being overweight or obese increases the risk of morbidity from high blood pressure, abnormal cholesterol, type 2 diabetes, heart disease, stroke, osteoarthritis, breathing problems and breast, prostate and colon cancers. Higher body weights are also associated with increase in all-cause mortality.³⁷ Overweight and obesity refer to body weight greater than what is normally considered healthy as measured by Body Mass Index (BMI), which uses an individual's height and weight to determine a score. A BMI of ≤ 18.4 is considered underweight, 18.5-24.9 normal weight, 25.0-29.9 overweight, and ≥ 30.0 obese. After declining to 61.9 percent in 2013, Virginia Beach's percentage of overweight or obese adults increased to 68.3 percent in 2014 (Figure 31).

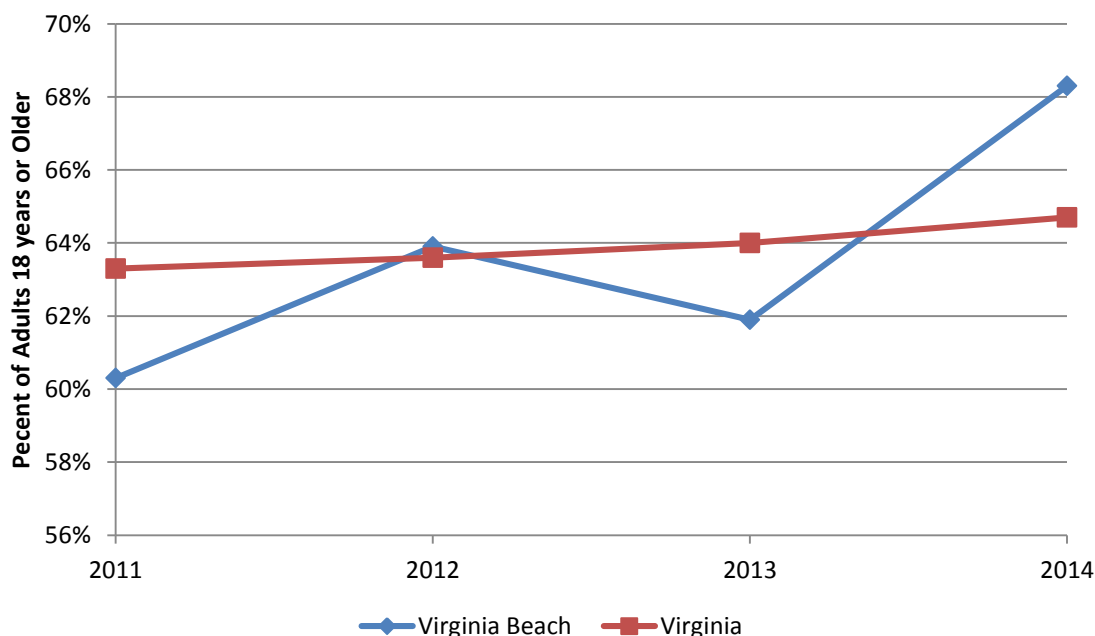


Figure 31: Percent of Adults who are Overweight or Obese, Virginia Beach and Virginia, 2011-2014

Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

PHYSICAL ACTIVITY

Adults who are physically active are healthier and less likely to develop many chronic diseases than adults who aren't active, regardless of their gender or ethnicity.³⁸ The U.S. Department of Health and Human Services' Physical Activity Guidelines for Americans recommends that adults engage in at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous-intensity exercise and two or more days of muscle-strengthening activities each week. Among Virginia Beach residents in 2014, 22.5 percent of adults reported getting no exercise within the past month, slightly lower than the state average of 23.5 percent (Figure 32).

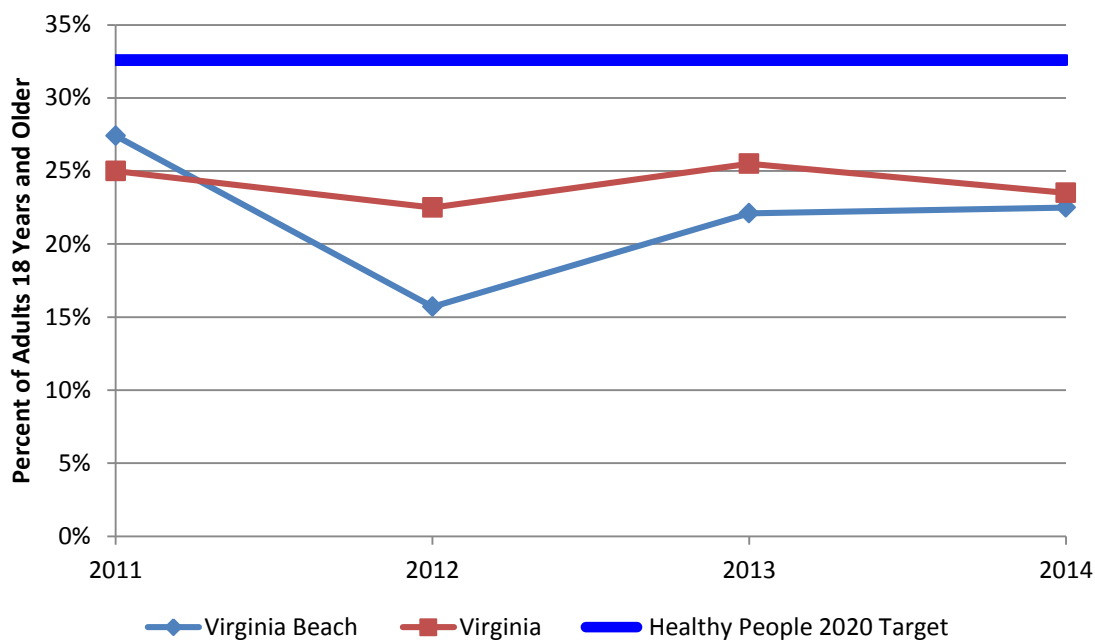


Figure 32: Self-reported Physical Inactivity, Virginia Beach and Virginia, 2011-2014
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

DIET

Good nutrition is essential for health. In 2013, 19.4 percent of Virginia Beach adults reported consuming five or more servings of fruit and vegetables a day, higher than the state average of 17.8 percent (Figure 33).

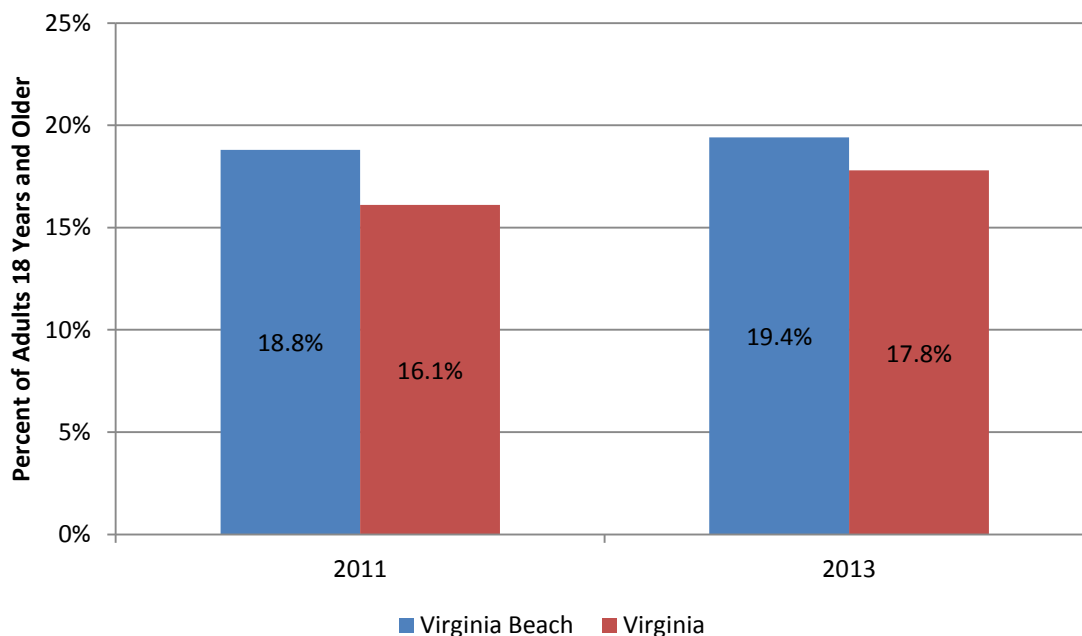


Figure 33: At Least Five Servings of Fruit and Vegetables Consumed, Virginia Beach and Virginia, 2011 and 2013
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

TOBACCO USE

Tobacco use is the leading preventable cause of death and disease in the United States. Each year, approximately 480,000 Americans die from tobacco-related illnesses.³⁹ More than 16 million Americans suffer from at least one disease caused by smoking.⁴⁰ Figure 34 shows the percentage of adult smokers in Virginia Beach and Virginia. In 2014, Virginia Beach's adult smoking rate of 22.0 was slightly higher than the state average of 19.5 percent. The percentage of adult smoking in Virginia Beach in 2014 was significantly higher than the Healthy People 2020 target (12.0 percent).

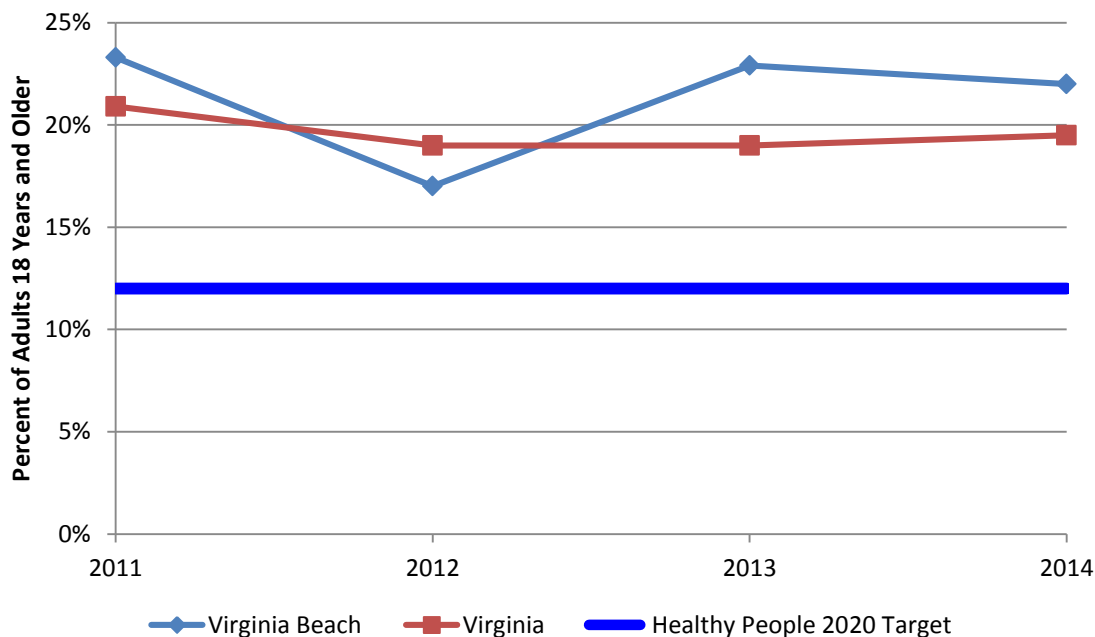


Figure 34: Self-Reported Adult Smokers, Virginia Beach and Virginia, 2011-2014

Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

BINGE DRINKING

Drinking too much alcohol cost the United States \$249 billion in 2010 from losses in productivity, health care, crime and other expenses; binge drinking was responsible for 77 percent of these expenses. Binge drinking is associated with many health problems to include injuries (from car crashes to domestic violence), unintended pregnancy, high blood pressure, stroke and liver disease.⁴¹ Binge drinking is defined as 5 or more alcoholic drinks for a man during a single occasion and 4 or more drinks for a woman. In Virginia Beach, 18.1 percent of adults reported that they engaged in binge drinking during the past 30 days in 2014. The rate in Virginia is lower at 15.2 percent (Figure 35).

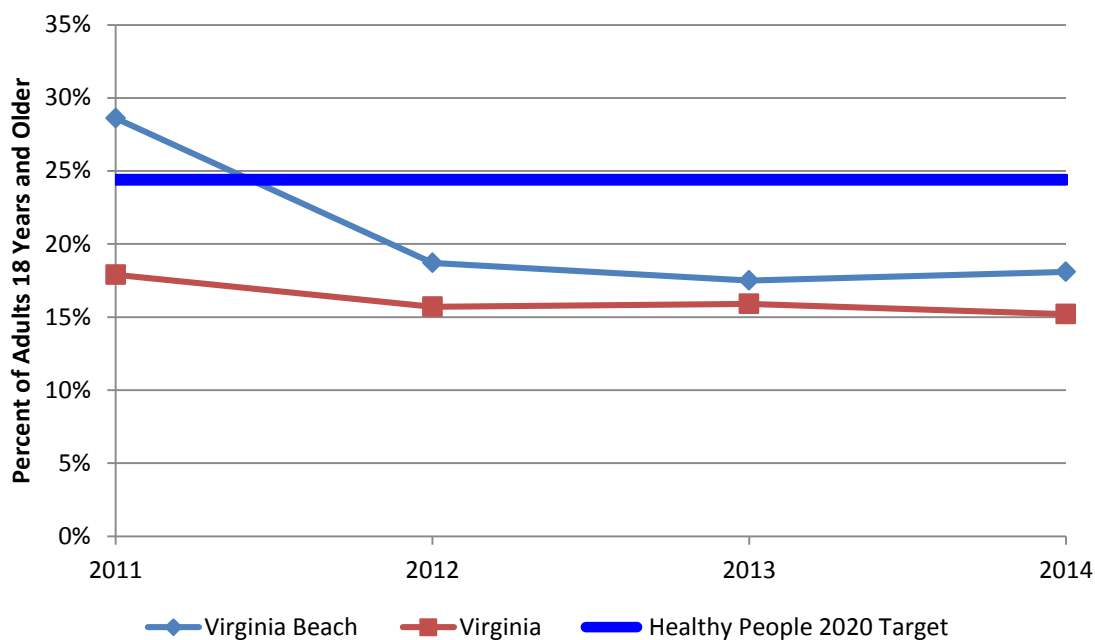


Figure 35: Self-reported Binge Drinking, Virginia Beach and Virginia, 2011-2014
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

SEATBELT USE

Failure to use safety restraints increases the risk of injury during a motor vehicle crash. As shown in Figure 36, the proportion self-reported seatbelt users in Virginia Beach has increased since 2011. In 2014, the percentage of seatbelt users in Virginia Beach (90.6%) was over three percentage points higher than the state average of 87.2 percent.

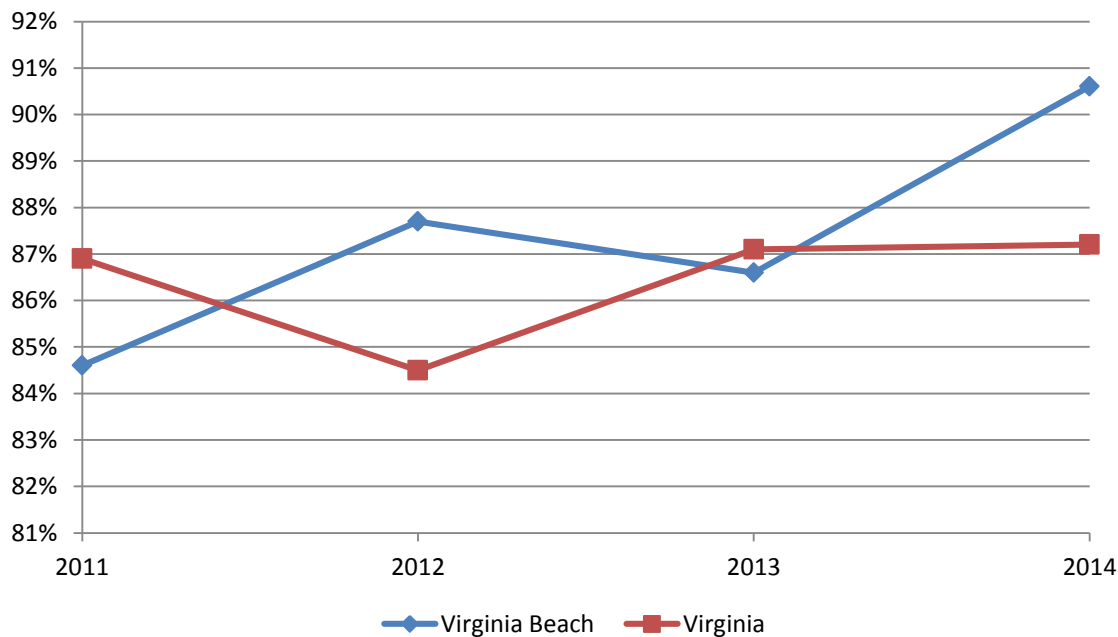


Figure 36: Percent of Self-Reported Seatbelt Users, Virginia Beach and Virginia, 2011-2014
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

DENTAL CLEANING

Good self-care, such as brushing with fluoride toothpaste, daily flossing, and professional treatment, is important to good oral health.⁴² In 2013, 75.4 percent of adults 18 years and older in Virginia Beach reported having their teeth cleaned by a dentist or dental hygienist within the past year. This is higher than the state rate of 68.3 percent.

IMMUNIZATION RATES

Vaccines are among the most cost-effective clinical preventative service and play a key role in the health and wellness of our community. They provide the first line of defense against infectious diseases. For each group of children born in a year who receive the standard childhood immunizations, over their lifetime the CDC estimates that 33,000 lives are saved and 14 million cases of disease are prevented.⁴³

Due largely to school entrance requirements and increased vaccine availability, childhood immunization rates remain at high levels. In 2016, the percentage of kindergarteners in public school who were adequately immunized in Virginia Beach was 95.4 percent (Figure 37).

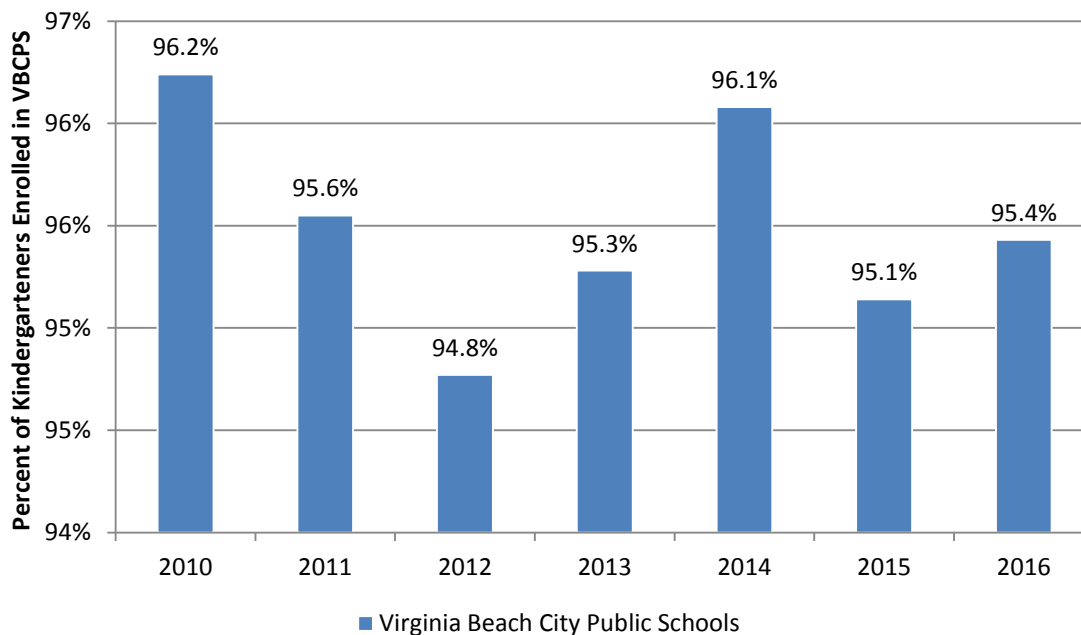


Figure 37: Adequately Immunized Kindergarteners, Virginia Beach, 2010-2016

Source: Virginia Department of Health Division of Immunization

Seniors, adults 65 years or older, represent another vulnerable population that benefits significantly from immunizations. Approximately 50,000 adults die each year from vaccine preventable diseases in the United States with influenza and invasive pneumococcal disease being the most common causes.⁴⁴ In 2011-2013, 73.5 percent of adults aged 65 years and older in Virginia Beach reported receiving the pneumococcal vaccine compared to 69.5 percent in Virginia. The percentage of adults aged 65 years and older who reported receiving the influenza was substantially lower in Virginia Beach than for the state as a whole (Figure 38).

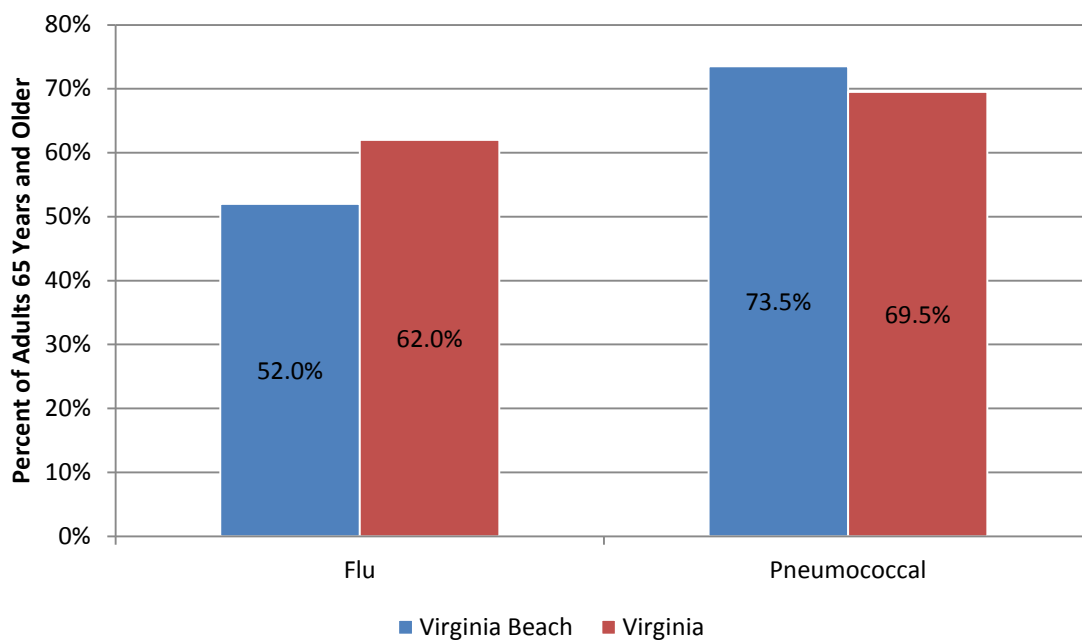


Figure 38: Immunizations for Older Adults, Virginia Beach and Virginia, 2011-2012-2013
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

Data from the Virginia Behavioral Risk Factor Surveillance Survey shows that influenza vaccination rates in Virginia Beach adults increased from 41.7 percent in 2011 to 45.4 percent in 2014, slightly higher than the state rate of 43.5 percent, but well below the Healthy People 2020 goal of 70.0 percent (Figure 39).

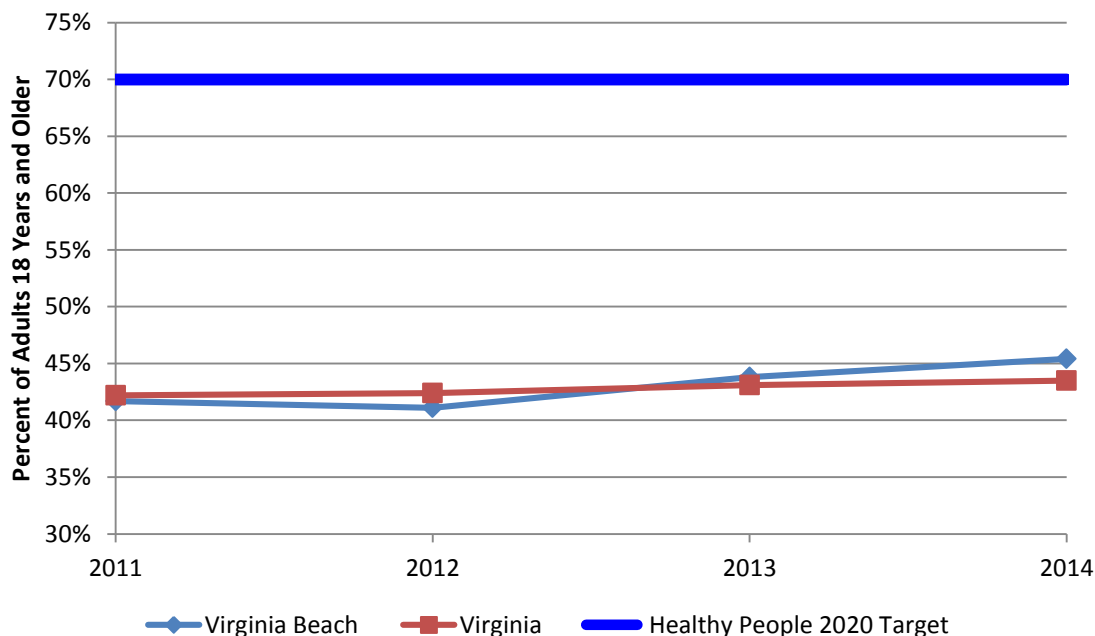


Figure 39: Flu Vaccination Rate, Virginia Beach and Virginia, 2011-2014
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

Maternal and Child Health

The well-being of pregnant women and their children influences the health of the next generation and can help predict future public health challenges for families, communities, and the health care system.

LIVE BIRTH RATE

Between 2003 and 2014, the rate of live births in Virginia Beach hovered between 13 and 15 births per 1,000 residents and remained higher than the Virginia rate. The Virginia Beach rate peaked in 2006 at 15.5 births per 1,000 residents, but by 2013 this rate had dropped to 13.4. The number and rate of births increased in the city of Virginia Beach in 2014 for the first time since 2010 (Figure 40). There were 6,088 live births in Virginia Beach in 2014, translating to a live birth rate of 13.5 per 1,000 population.⁴⁵

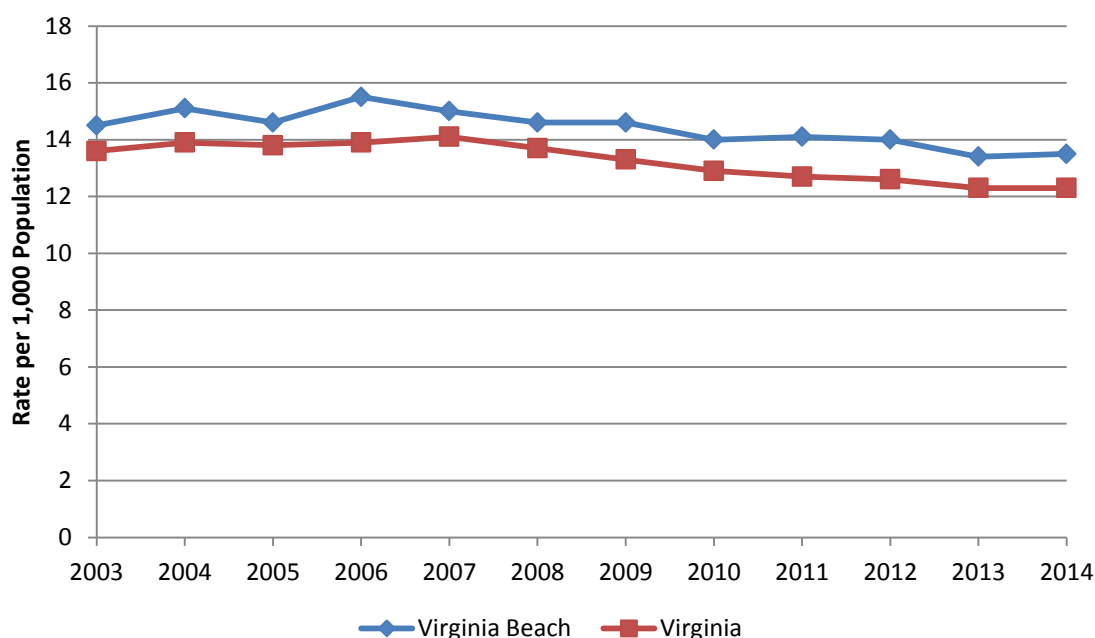


Figure 40: Live Birth Rate, Virginia Beach, 2003-2014

Source: Virginia Department of Health, Division of Health Statistics

PRENATAL CARE

Prenatal care is important for the health of mothers and babies. Pregnancy carries many health risks for the mother. Prenatal care is associated with better health outcomes for babies, including improved birth weight, a lowered risk of preterm delivery, and lower risk of infant mortality. Sociodemographic characteristics, such as race/ethnicity, education, location, marital status, and age influence mothers obtaining prenatal care.⁴⁶

Between 2003 and 2013, the percentage of Virginia Beach women receiving prenatal care in the first trimester has fluctuated, from a high of 89.4 percent in 2003 to a low of 86.2 percent in 2006 (Figure 41). In 2013, 87.5 percent of pregnant women in Virginia Beach received prenatal care in their first trimester, compared to 82.9 percent in Virginia.

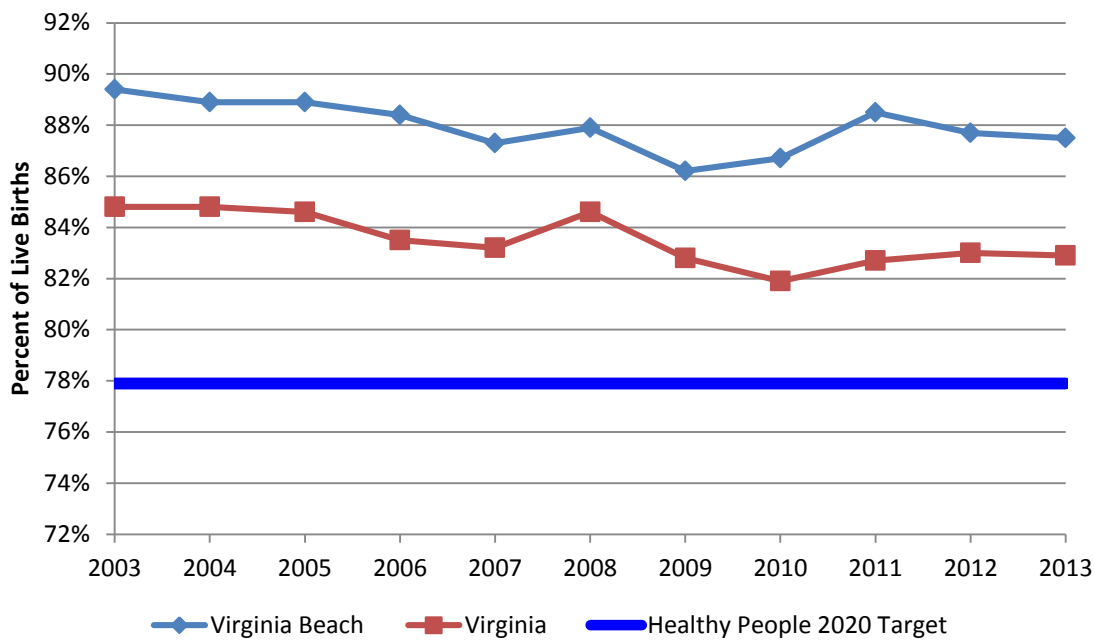


Figure 41: Percent of Pregnant Women who Receive Prenatal Care in First Trimester, Virginia Beach and Virginia, 2003-2013
Source: Virginia Department of Health, Division of Health Statistics

NON-MARITAL BIRTHS

Nonmarital births are at higher risk of having adverse birth outcomes such as low birthweight, preterm birth, and infant mortality than are children born to married women.⁴⁷ The percentage of all births to unmarried women declined to 30.2 percent in 2014, from 30.9 percent in 2013 (Figure 42).

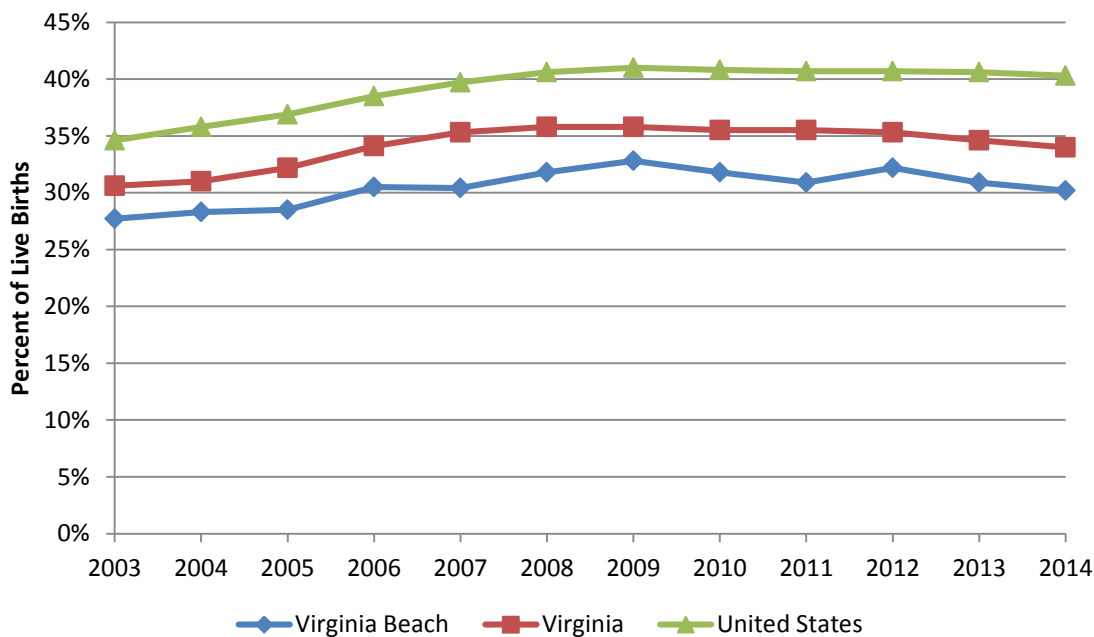


Figure 42: Percent of Non-Marital Births, Virginia Beach and Virginia, 2004-2013
Source: Virginia Department of Health, Division of Health Statistics

LOW BIRTH WEIGHT

Low birthweight refers to a baby born weighing less than 2,500 grams (5 pounds, 8 ounces). Babies born with a low birthweight have a higher probability of experiencing developmental problems and short- and long-term disabilities and are at greater risk of dying within the first year of life than infants born at a normal weight. Between 2005 and 2014, the percentage of low weight births in Virginia Beach decreased from 8.4 percent to 7.6 percent, lower than the Virginia rate (7.9%) and the Healthy People 2020 target (7.8%) (Figure 43).

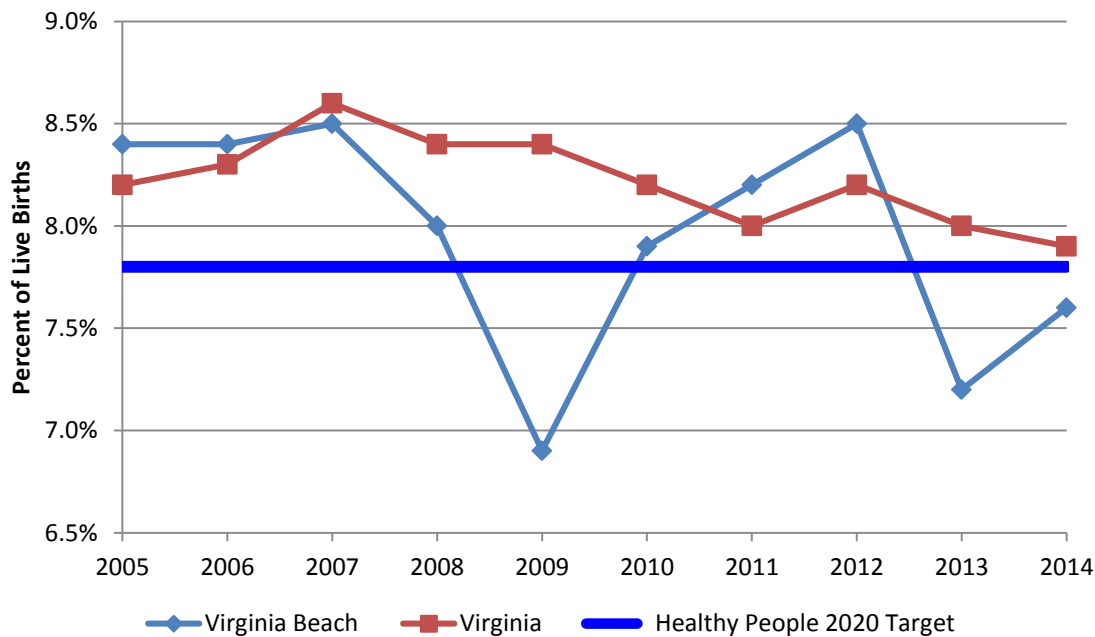


Figure 43: Percent of Low Birth Weight Births, Virginia Beach and Virginia, 2003-2014

Source: Virginia Department of Health, Division of Health Statistics

Significant racial disparities exist among birth outcomes for pregnant women and infants in Virginia Beach. Table 12 shows that in 2014, the rate of low birthweight for black infants in Virginia Beach (11.9%) was nearly twice that of white infants (5.9%).

		Percent of Low Weight Births				
		2010	2011	2012	2013	2014
Virginia Beach	White	6.6%	6.8%	6.5%	6.1%	5.9%
	Black	11.4%	11.9%	13.7%	11.7%	11.9%
Virginia	White	6.9%	6.6%	6.7%	6.6%	6.4%
	Black	12.5%	12.4%	13.1%	12.4%	12.4%

Table 12: Percent of Low Weight Births by Race, Virginia Beach and Virginia, 2010-2015

Source: Virginia Department of Health, Division of Health Statistics

INFANT MORTALITY

Infant mortality is defined as the death of a baby before his or her first birthday. In 2013, 34 infants in Virginia Beach died before their first birthday, resulting in an infant mortality rate of 5.7 deaths per 1,000 live births (Figure 44). An examination of infant mortality stratified by race demonstrates the same phenomenon in Virginia Beach as in the state — African-American babies die more frequently than white babies. In 2013, the infant mortality rate in Virginia Beach was 4.2 infant deaths per 1,000 live births among white infants, lower than the Virginia (5.2) rate; it was 13.1 among African American infants, which was higher than the Virginia rate (12.2) (Figure 45).

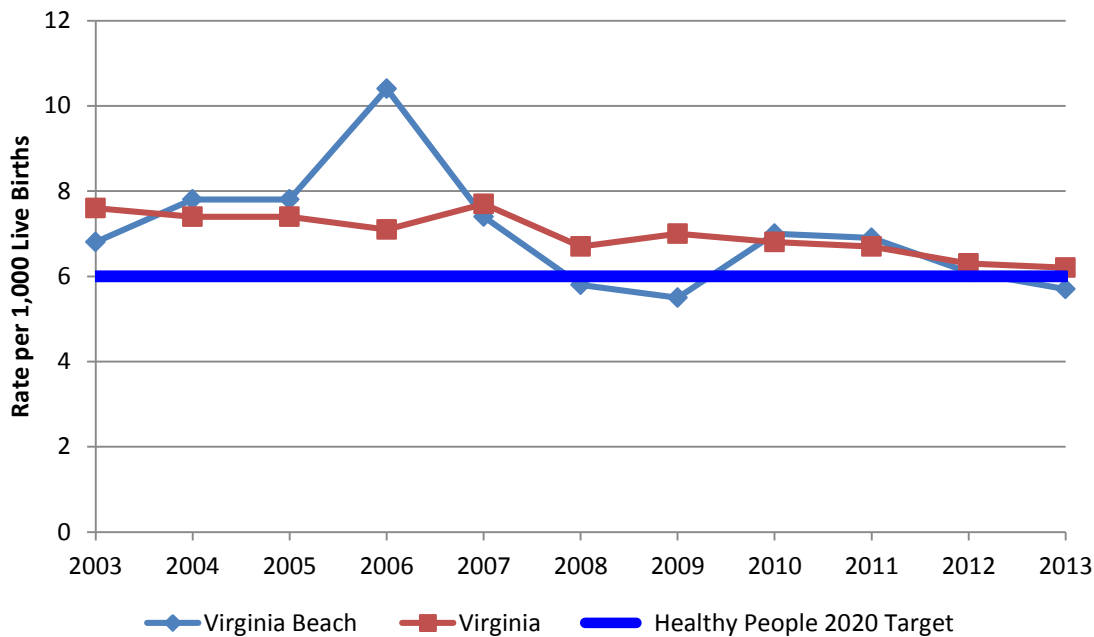


Figure 44: Infant Mortality Rate, Virginia Beach and Virginia, 2004-2013

Source: Virginia Department of Health, Division of Health Statistics

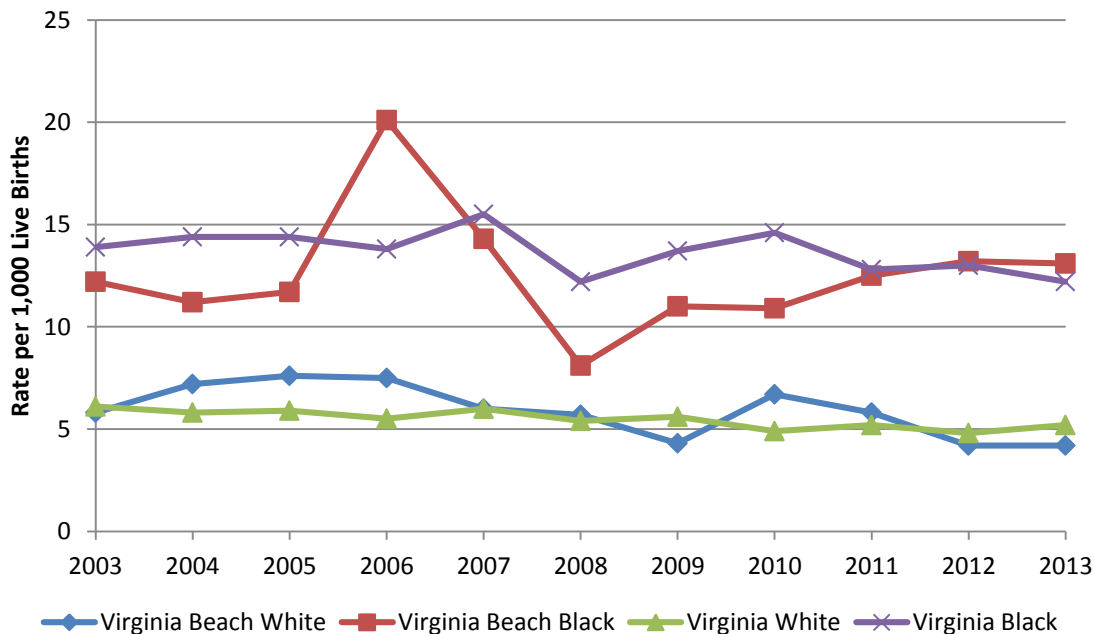


Figure 45: Infant Mortality Rate by Race, Virginia Beach and Virginia, 2004-2013

Source: Virginia Department of Health, Division of Health Statistics

TEEN PREGNANCY

Teen childbearing can carry health, economic, and social costs for mothers and their children. Pregnancy and birth are significant contributors to high school dropout rates among girls. The children of teenage mothers are more likely to have lower school achievement and to drop out of high school, be incarcerated at some time during adolescence, and give birth as a teenager.⁴⁸ The city of Virginia Beach has seen significant drops in the teen pregnancy rate and births to teens. In 2013, 246 infants were born to teens, ages 10 to 19 years old, in Virginia Beach. Since 2003, the teen pregnancy rate in Virginia Beach has fallen from 33.2 per 1,000 females (ages 10-19) to 15.3 in 2013 (Figure 46). Births to teen dropped from 494 in 2003 to 246 in 2013. These trends are comparable to state and national trends. The state teen pregnancy rate continues to be slightly lower than the city rate (14.4 for the state versus 15.3 for the city).

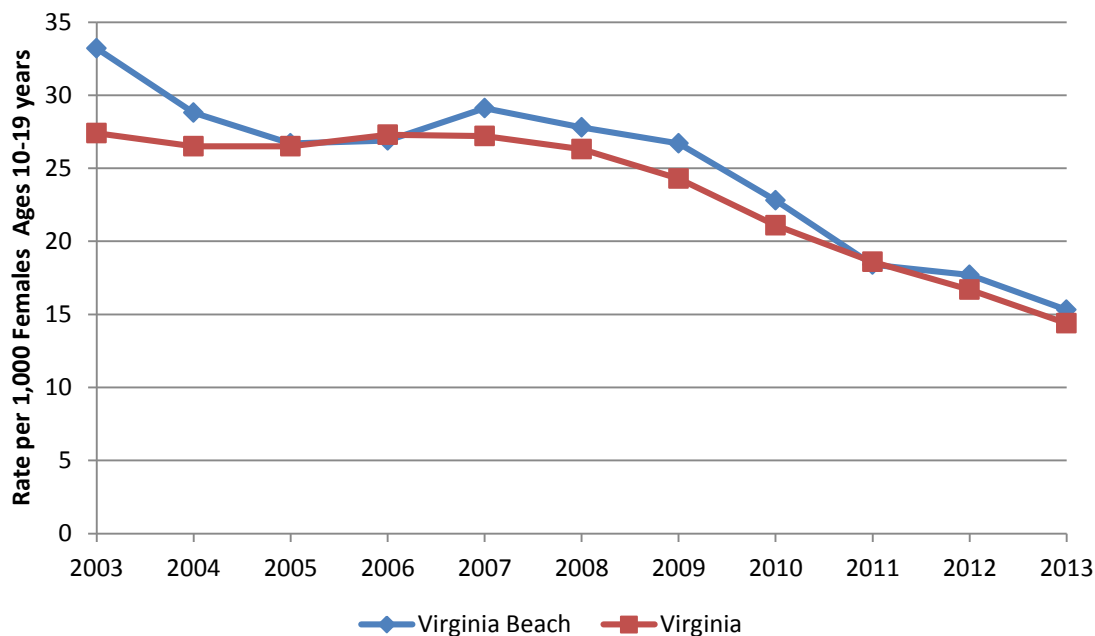


Figure 46: Teen Pregnancy Rate, Virginia Beach and Virginia, 2004-2013

Source: Virginia Department of Health, Division of Health Statistics

Despite a steady decrease in the teen pregnancy and birth rates among girls ages 10 to 19 over the last decade, birth rates remain higher among black adolescents than among their white counterparts. Table 13 displays the number and rate of live teen births in 2013 for Virginia Beach and Virginia. Among black teens, the birth rate in Virginia Beach was 12.8 births per 1,000 in 2013, while among white teens, it was 6.5 births per 1,000.

		Number	Rate
Virginia Beach	White	115	6.5
	Black	94	12.8
	Other	37	16.5
	Total	246	9.0
Virginia	White	2,794	7.9
	Black	1,884	15.1
	Other	638	16.6
	Total	5,316	10.3

Table 13: Number and Rate of Live Births to Teens Ages 10-19 by Race, Virginia Beach and Virginia, 2013

Source: Virginia Department of Health, Division of Health Statistics

Teen birth rates differ substantially by age. The rate of teen pregnancies was highest for older teens, ages 18 to 19 years old, in both the city and the state in 2013 (Figure 47). In Virginia Beach, 78.2 percent of all teen births in 2013 occurred to 18 to 19 year olds.⁴⁹

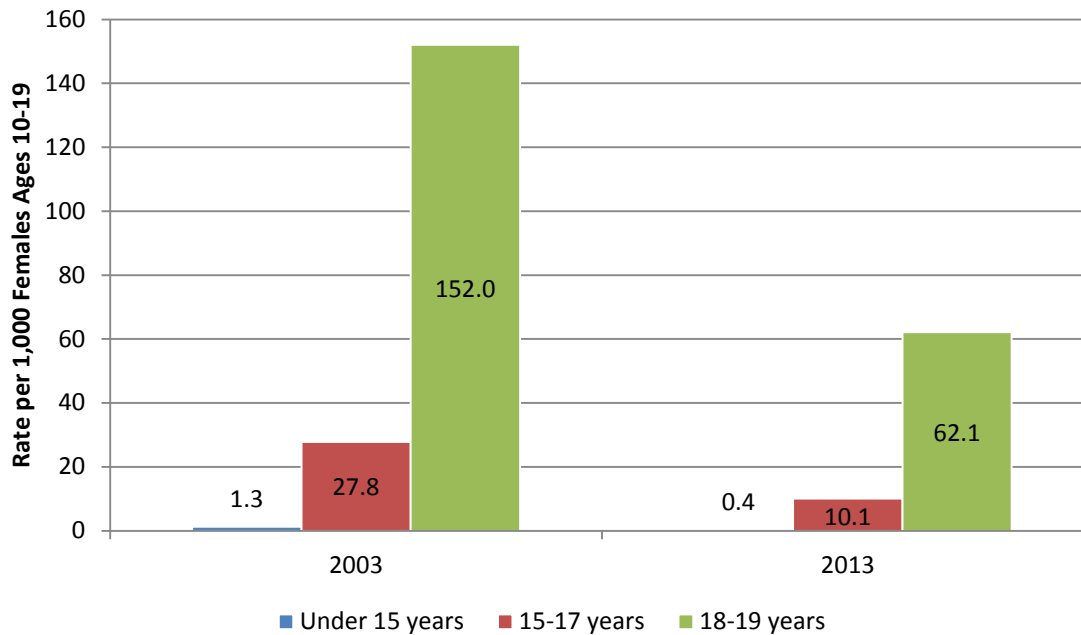


Figure 47: Teen Pregnancy Rate by Age, Virginia Beach, 2004 and 2013
Source: Virginia Department of Health, Division of Health Statistics

Mortality

LIFE EXPECTANCY

Life expectancy is a measure of the overall health of the population. It represents the average number of years of life that could be expected if current death rates were to remain constant. In 2014, life expectancy at birth was 78.8 years for the total U.S. population—81.2 years for females and 76.4 years for males. In Virginia, the overall life expectancy of a baby born in 2014 was 79.8 years; this varied, however, by sex and race (Figure 48).

A baby girl born in the Commonwealth of Virginia in 2014 could expect to live 82.0 years, 4.5 years longer than a baby boy, whose life expectancy would be 77.5 years. The differential between male and female life expectancy was greater among blacks than whites. Black males born in 2014 could expect to live 74.0 years, 5.5 years fewer than black females (79.5 years). The difference between white males and females was 4.4 years, with life expectancies at birth of 77.8 and 82.2 years, respectively. White females could expect to live 2.7 years longer than black females. The lower life expectancy among blacks may be partly accounted for by higher infant mortality rates, as well as higher mortality rates throughout the lifespan.

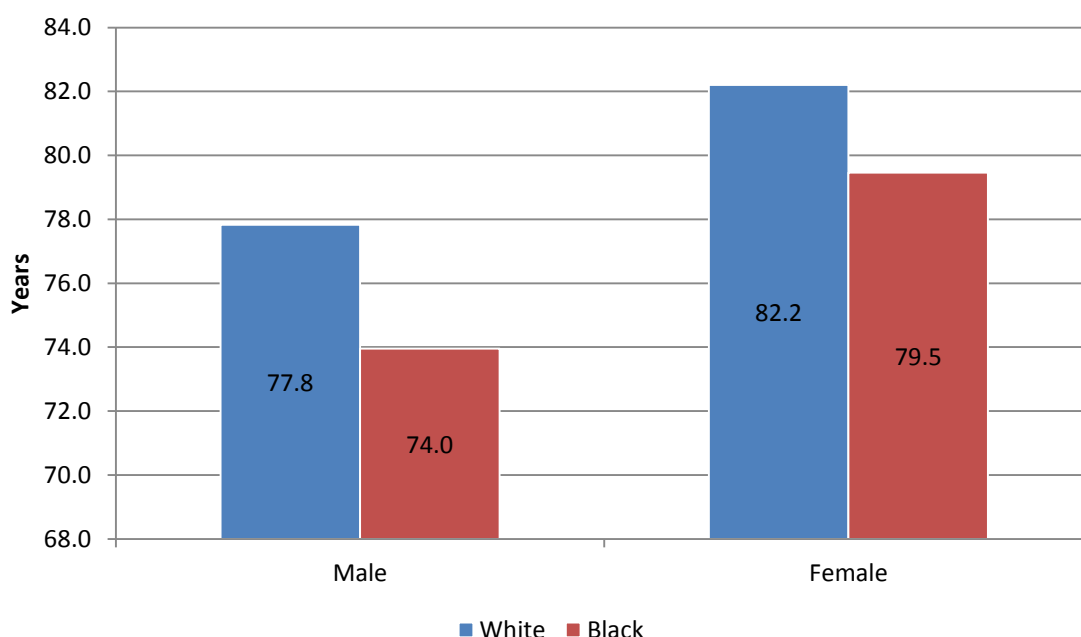


Figure 48: Life Expectancy at Birth by Race and Sex, Virginia, 2014
Source: Virginia Department of Health, Division of Health Statistics

Communities across the city of Virginia Beach also experience disparities in life expectancy. Figure 49, shows life expectancy at birth for Census Tracts in Virginia Beach. The map illustrates the vastly different health outcomes experienced by Virginia Beach residents living just a few miles apart. In 2010-2014, life expectancy at birth ranged from a low of 68.2 years for Census Tract 44806 to a high of 85.7 years for Census Tract 46013 (Table 14).

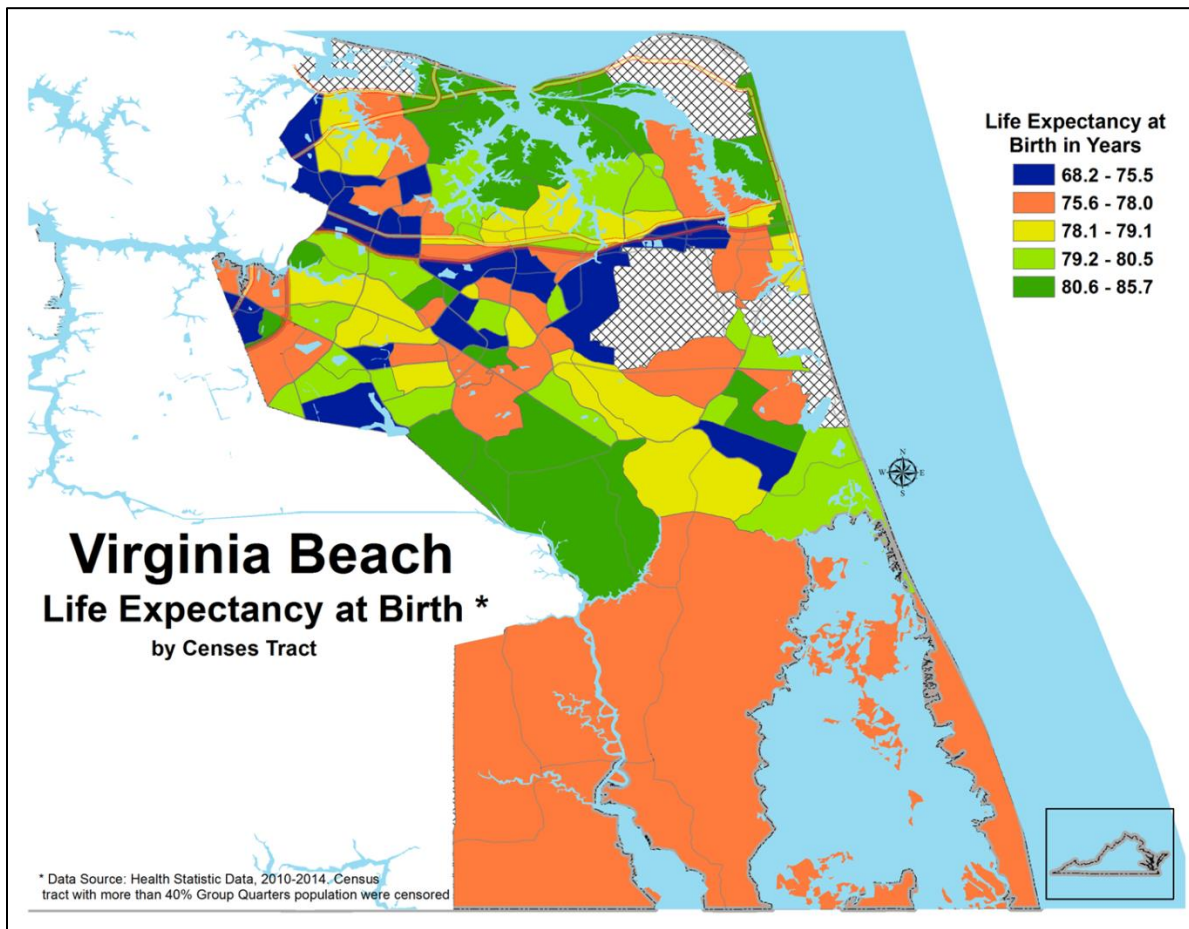


Figure 49: Map of Life Expectancy by Census Tract, Virginia Beach, 2007-2013

Source: Virginia Department of Health, Division of Health Statistics

Rank	Census Tracts with the Lowest Life Expectancy		Census Tracts with the Highest Life Expectancy	
	Census Tract	Years	Census Tract	Years
1	44806	68.18	46013	85.74
2	41002	69.89	42000	85.49
3	44805	72.29	46016	85.45
4	46220	73.29	46221	85.24
5	45801	74.15	43003	85.21
6	45420	74.44	43800	84.90
7	40600	74.47	45803	83.77
8	40402	74.48	41400	83.62
9	45810	74.49	43600	83.43
10	46012	74.55	43400	82.91

Table 14: Life Expectancy for Selected Census Tracts, Virginia Beach, 2010-2014

Source: Virginia Department of Health, Division of Health Statistics

MORTALITY RATES

An estimated 3,032 Virginia Beach residents died from all causes in 2014. The age-adjusted mortality rate has declined since 2007 in Virginia Beach and Virginia (Figure 50). In the city of Virginia Beach, the mortality rate decreased from 715.5 age-adjusted deaths per 100,000 residents in 2007 to 692.8 in 2014.

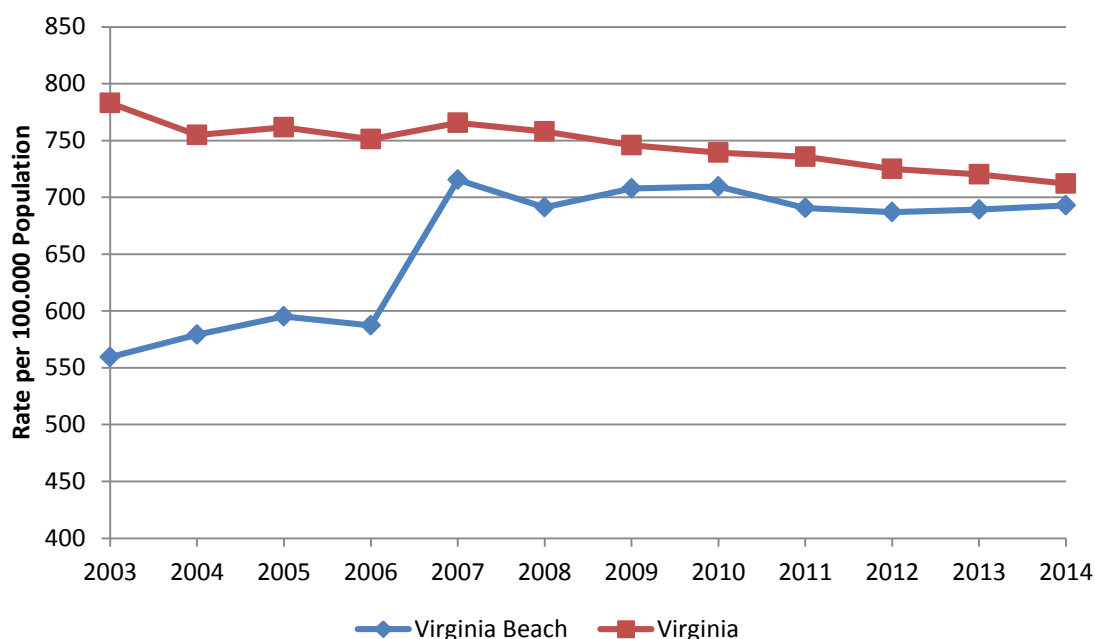


Figure 50: Age-Adjusted Mortality Rates, Virginia Beach and Virginia, 2004-2013
Source: Virginia Department of Health, Division of Health Statistics

LEADING CAUSES OF DEATH

According to the Virginia Department of Health, the five leading causes of death in Virginia Beach in 2014 were cancer, heart disease, unintentional injury, stroke, and chronic lower respiratory diseases. The top two causes, cancer and heart disease, accounted for 44.2 percent of all deaths in Virginia Beach in 2014. Table 15 displays the age-adjusted death rate for each of the 14 leading causes of death in Virginia Beach and Virginia. Compared to the state, Virginia Beach residents had higher mortality rates for cancer, diabetes, influenza and pneumonia, suicide, and Parkinson’s disease in 2014.

Leading Causes of Death	Virginia Beach	Virginia
Malignant Neoplasms (Cancer)	164.2	160.4
Diseases of the Heart	138.6	154.8
Cerebrovascular Diseases (Stroke)	31.9	36.7
Chronic Lower Respiratory Diseases	31.6	35.1
Unintentional Injury	30.3	35.9
Diabetes Mellitus	19.5	18.4
Influenza and Pneumonia	18.2	17.0
Alzheimer’s Disease	16.4	20.7
Suicide	14.2	12.6
Septicemia	13.3	15.1
Nephritis and Nephrosis	13.3	17.5
Chronic Liver Disease	8.5	8.7
Parkinson’s Disease	8.5	7.2
Primary Hypertension and Renal Disease	6.1	7.5

Table 15: Leading Causes of Death Age-Adjusted Mortality Rate per 100,000 Population, Virginia Beach and Virginia, 2014
Source: Virginia Department of Health, Division of Health Statistics

CANCER-RELATED MORTALITY

Cancer is the leading cause of death in Virginia Beach. In 2014, Virginia Beach's cancer mortality rate was 164.2 deaths per 100,000 people, slightly lower than the 2013 rate (166.9) but higher than the state average of 160.4 (Figure 51).

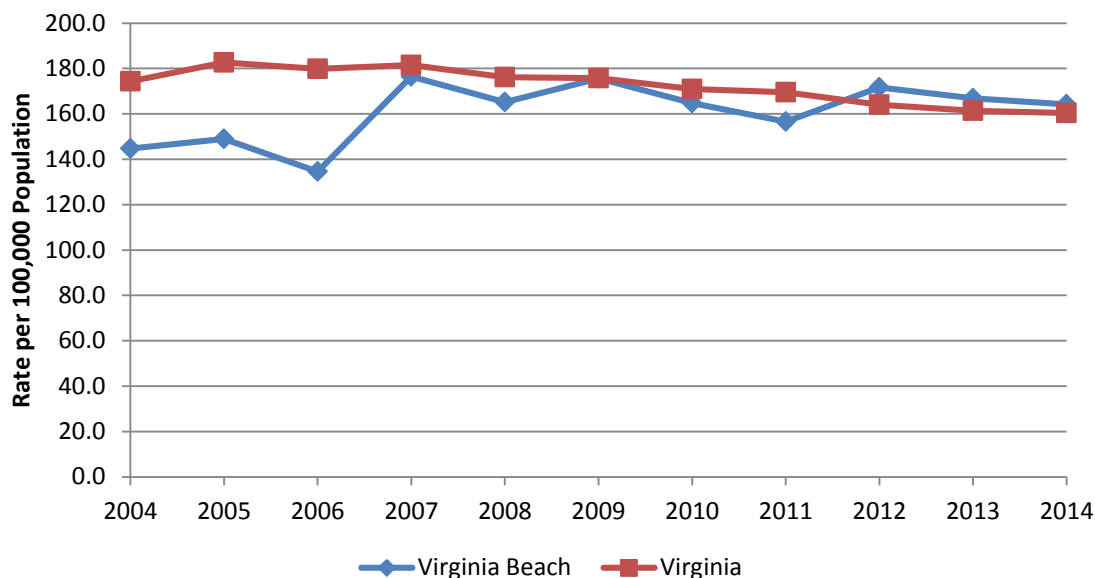


Figure 51: Age-Adjusted Cancer Death Rate, Virginia Beach and Virginia, 2004-2013

Source: Virginia Department of Health, Division of Health Statistics

Figure 52 provides the five-year total mortality rates per 100,000 by cancer type for Virginia Beach and Virginia. Virginia Beach mortality rates for melanoma, lung and female breast cancer are not meeting the Healthy People 2020 targets.

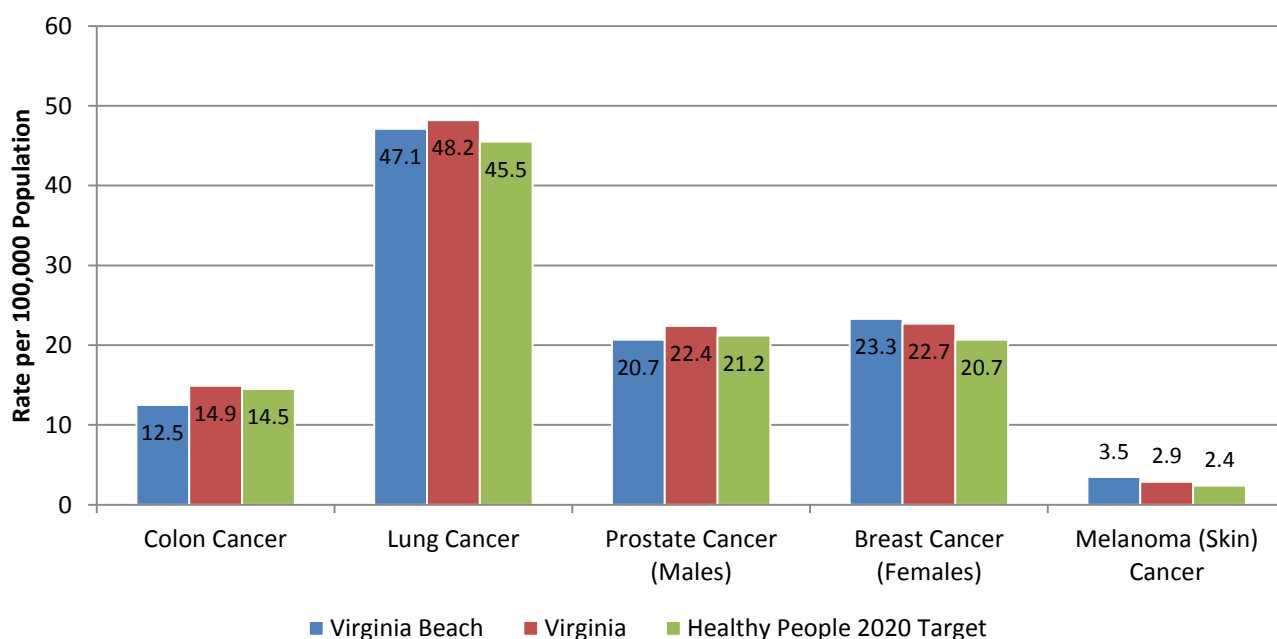


Figure 52: Age-Adjusted Cancer Death Rate by Type, Virginia Beach and Virginia, 2008-2012

Source: Virginia Department of Health, Division of Health Statistics

From 2008-2012, the rate of people dying from cancer varied, depending on their race. As shown in Table 16, black males were more likely to die from cancer than white males in Virginia Beach and Virginia.

	White		Black		All Races*	
	Deaths	Rate	Deaths	Rate	Deaths	Rate
Virginia Beach	2,687	168.4	507	188.1	3,342	166.7
Virginia	54,971	168.2	13,746	203.7	70,400	171.2

*Includes white, black and other races

Table 16: Age-Adjusted Cancer Death Rate per 100,000 Population by Race, Virginia Beach and Virginia, 2008-2012

Source: Virginia Department of Health, Division of Health Statistics

HEART DISEASE MORTALITY

Heart Disease is Virginia Beach's second leading cause of death. The age-adjusted mortality rate for heart disease in Virginia Beach increased slightly from 138.5 in 2013 to 138.6 in 2014, which was lower than the Virginia rate (154.8), but higher than the Healthy People 2020 target (103.4) (Figure 53). Healthy People 2020 states, "the risk of Americans developing and dying from cardiovascular disease would be substantially reduced if major improvements were made across the U.S. population in diet and physical activity, control of high blood pressure and cholesterol, smoking cessation, and appropriate aspirin use."⁵⁰

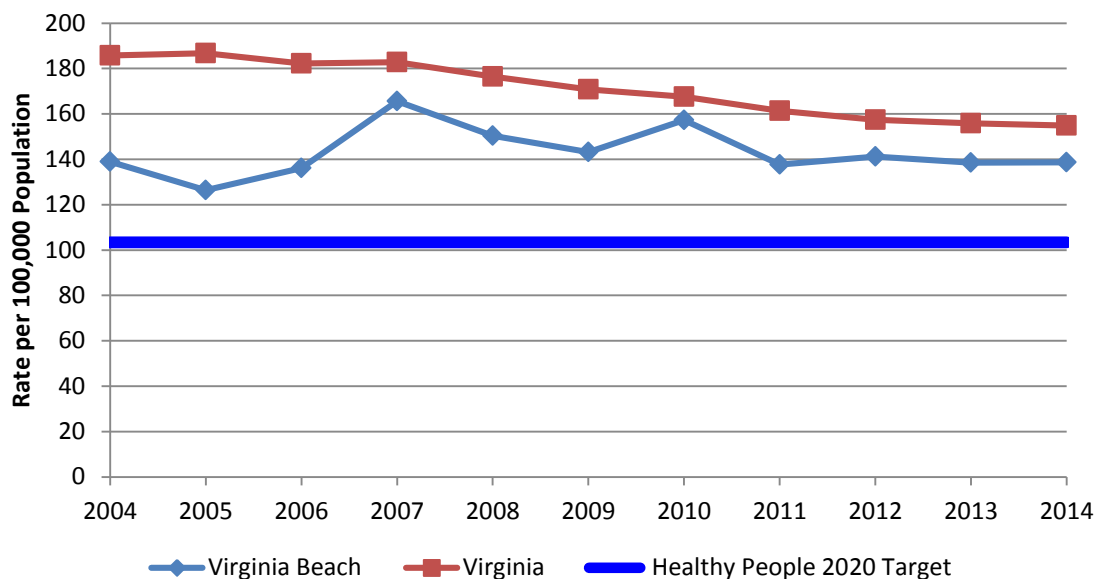


Figure 53: Age-Adjusted Heart Disease Death Rate, Virginia Beach and Virginia, 2004-2014

Source: Virginia Department of Health, Division of Health Statistics

STROKE

On average, one American dies from stroke every four minutes. Stroke is the fifth leading cause of death in the United States, but the risk of having a stroke varies with race and ethnicity. Nationally, the risk of having a stroke is nearly twice as high for blacks than for whites, and blacks are more likely to die following a stroke than whites.⁵¹

Over the last decade, the age-adjusted stroke mortality rate in Virginia Beach decreased to a rolling average of 32.5 deaths per 100,000 residents in 2010-2014, which was lower than the Virginia rate of 39.8. Despite the progress, stroke remains the third leading cause of death in Virginia Beach. In 2014, there were 136 deaths due to stroke in Virginia Beach. The stroke mortality rate in the city was 31.9 deaths per 100,000 residents, lower than overall rate for the state (36.7) and below the Healthy People 2020 target (34.8) (Figure 54).

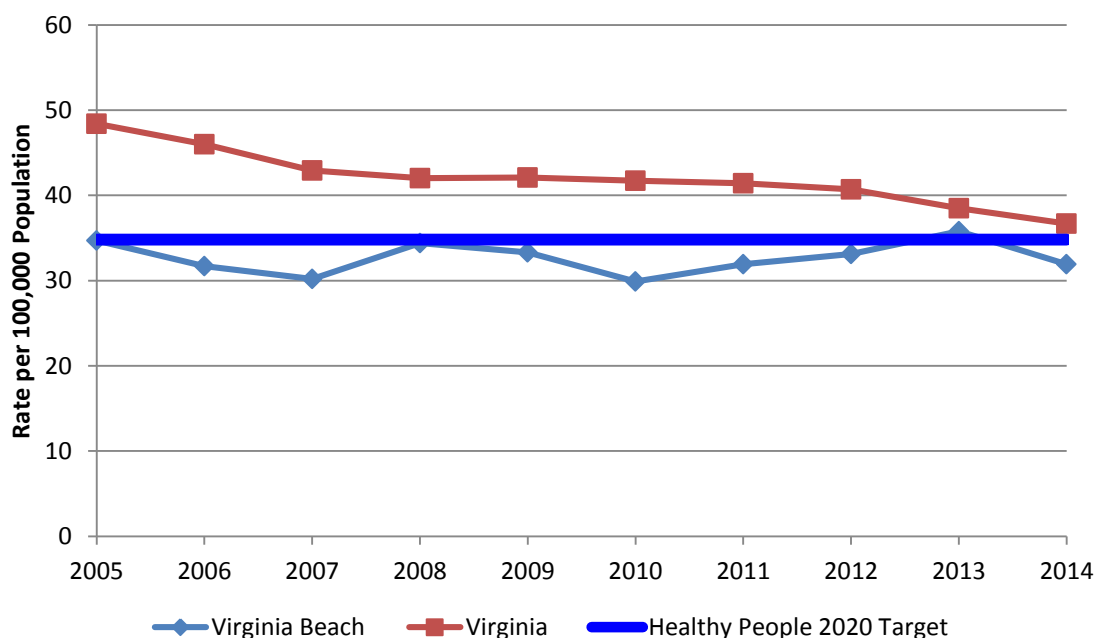


Figure 54: Stroke Age-adjusted Mortality Rate, Virginia Beach and Virginia, 2005-2014

Source: Virginia Department of Health, Division of Health Statistics

INJURY-RELATED MORTALITY

Injuries are a major cause of death and disability in Virginia Beach and Virginia. In 2014, over 220 of Virginia Beach residents of all ages died from injuries. Traumatic brain injuries⁵² were the leading cause of all injury related deaths, contributing to about 38 percent of all injury related deaths. Traumatic brain injuries are caused by a bump, blow, or jolt to the head or a penetrating head injury that disrupts normal function of the brain.⁵³ Suicide was the second leading cause of injury-related death for 8 of the 10 years between 2005 and 2014. Figure 55 displays the injury-related mortality rates by type of injury for Virginia Beach from 2005 to 2014.

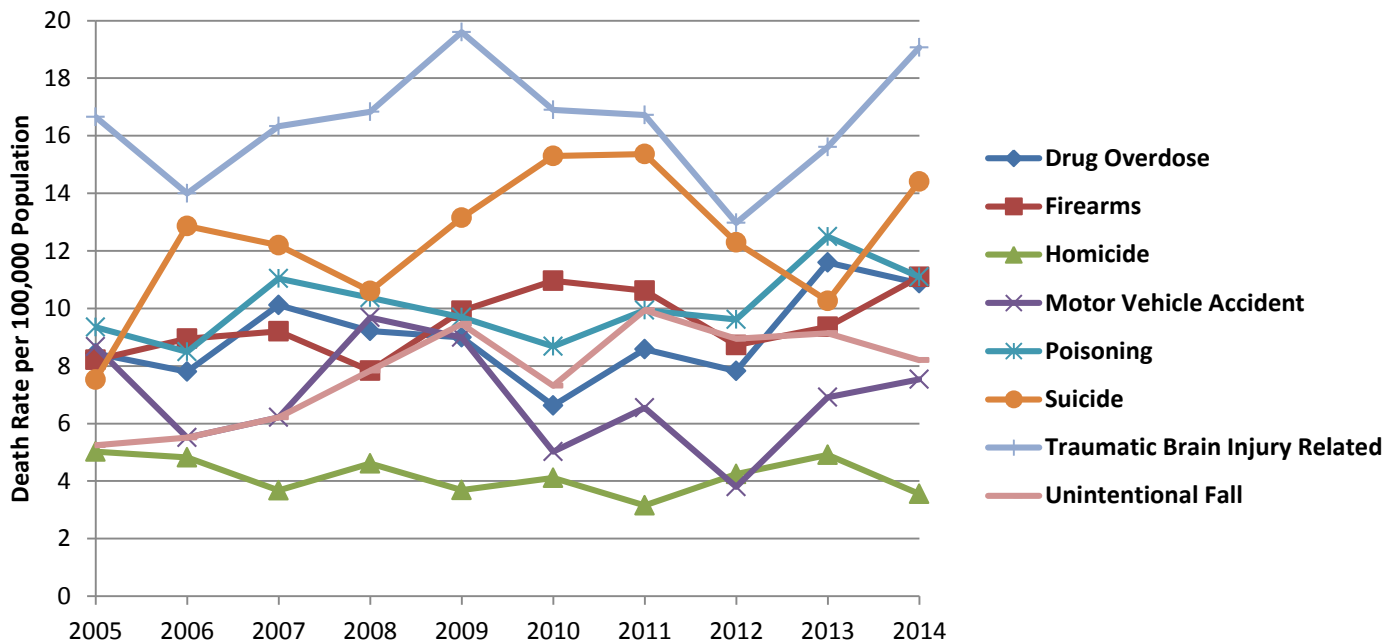


Figure 55: Injury Death Rate Trend, Virginia Beach, 2005-2014

Source: Virginia Vital Records and Health Statistics Electronic Death Certificates

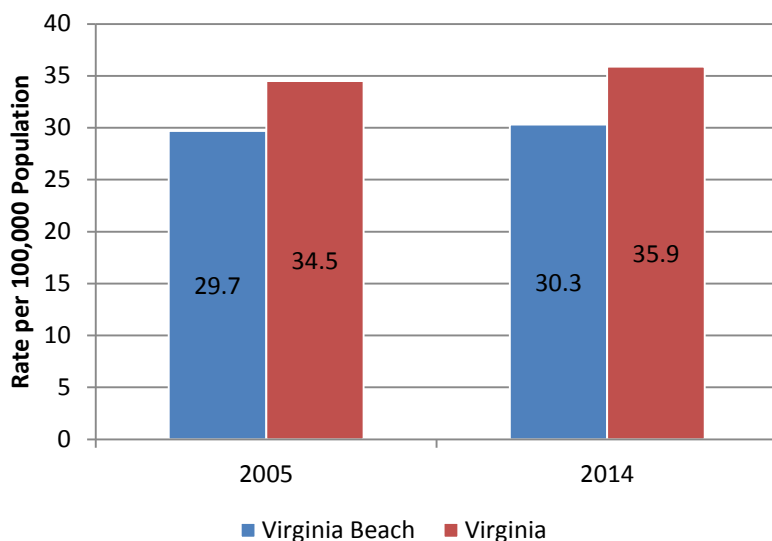


Figure 56: Age-Adjusted Unintentional Injury Death Rate per 100,000 Population, Virginia Beach and Virginia, 2005 and 2014

Source: Virginia Department of Health, Division of Health Statistics

Unintentional Injury-Related Mortality

Injuries are grouped into two categories identified by the manner in which the injury occurs: *unintentional* and *intentional*. Unintentional injuries (accidents) are the third leading cause of death in Virginia Beach. The age-adjusted mortality rate for unintentional injuries in Virginia Beach increased from 29.7 deaths per 100,000 residents in 2005 to 30.3 in 2014, which was lower than the Virginia rate (35.9) (Figure 56). Major causes of unintentional injuries include motor-vehicle crashes, drowning, poisoning, fires and burns, falls, sports- and recreation-related injuries, firearm-related injuries, choking, suffocation, and animal bites.

Intentional Injury-Related Mortality

Suicide

The economic and human cost of suicidal behavior to individuals, families and communities makes suicide a serious public health problem.⁵⁴ Suicide ranks among the highest causes of mortality in Virginia Beach. From 2005 through 2014, 546 Virginia Beach residents lost their lives to suicide. In 2014, the Virginia Beach age-adjusted suicide mortality rate was 14.2 per 100,000 residents, higher than both the statewide average (12.6) and the Healthy People 2020 target (10.2) (Figure 57).

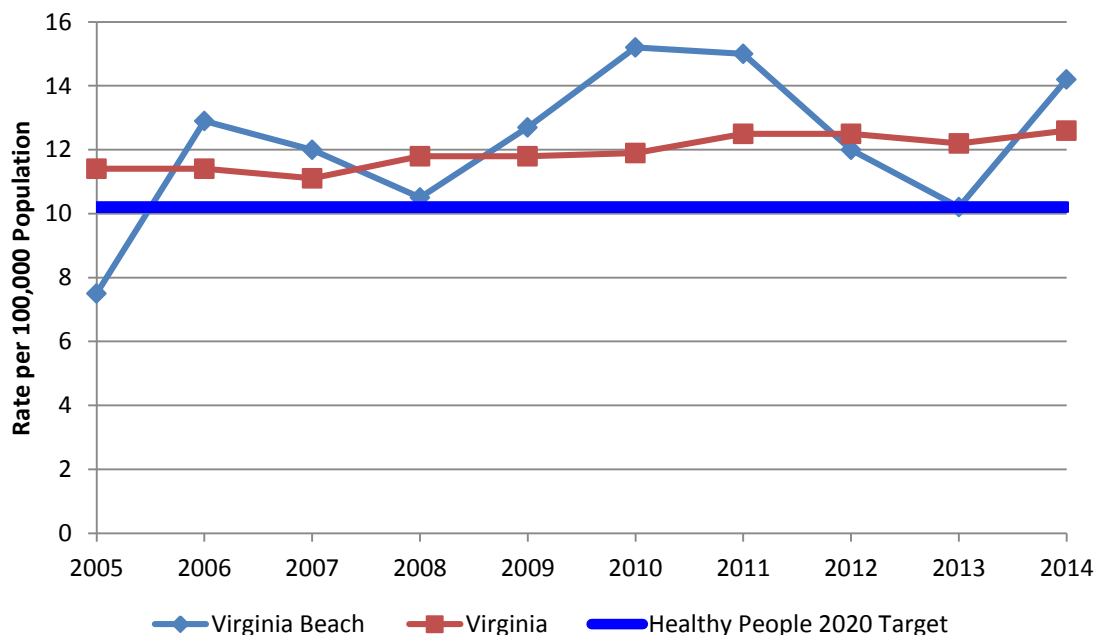
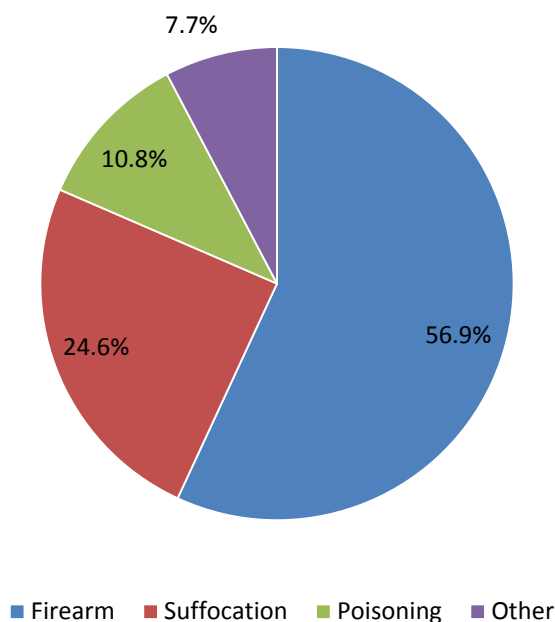


Figure 57: Suicide Mortality Rate, Virginia Beach and Virginia, 2005-2014
Source: Virginia Vital Records and Health Statistics Electronic Death Certificates



Although more women than men attempt suicide, men are more likely than women to die by suicide. One reason is that men are more likely to use deadlier means such as firearms when they set out to take their own lives.⁵⁵

In 2014, men accounted for 85 percent of all suicide deaths in Virginia Beach. Firearms were the most common method of death by suicide, accounting for 56.9 percent of all suicide deaths. The next most common methods were suffocation and poisoning (Figure 58).

Figure 58: Suicide Deaths by Method, Virginia Beach, 2014
Source: Virginia Online Injury Reporting System (VOIRS)

Homicide

While suicides have increased in Virginia Beach over the past 10 years, homicides have decreased. Sixteen homicides occurred in Virginia Beach in 2014, a 27.3 percent decrease from 2005 when there were 22 homicides (Figure 59). The number of homicides was highest among Virginia Beach residents ages 25 to 39 years, and the overall number for males was 4 times higher than females.

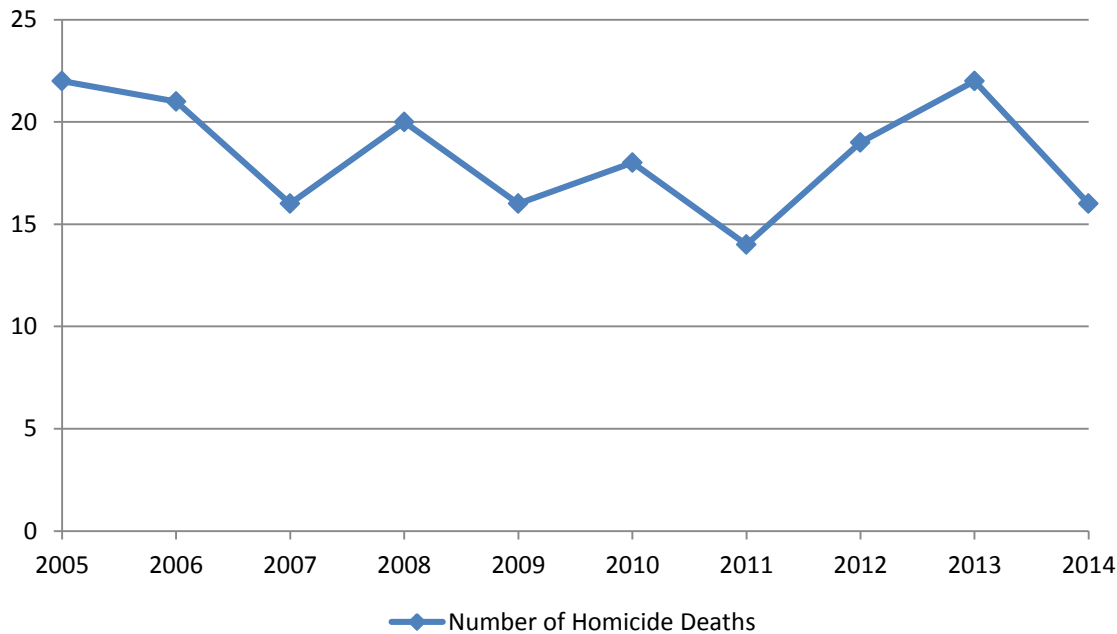


Figure 59: Homicide Deaths, Virginia Beach, 2005-2014

Source: Virginia Vital Records and Health Statistics Electronic Death Certificates

Infectious Diseases

COMMUNICABLE DISEASES

Table 17 shows the rates of selected vaccine preventable diseases that were reported in 2015 compared to 2011. The reported number of varicella (chicken pox) cases in Virginia Beach decreased by nearly 80 percent between 2011 and 2015.

	2011	2015
Hepatitis A	0.2	0.2
Hepatitis B, acute	0.2	0.2
Mumps	0.2	0.2
Pertussis	2.3	1.6
Varicella (Chicken Pox)	8.9	1.8

Table 17: Number of Reported Communicable Diseases per 100,000 Population, Virginia Beach, 2011 and 2015

Source: Virginia Electronic Disease Surveillance System (VEDSS)

Figure 60 shows the top 10 communicable diseases by incidence rate for Virginia Beach in 2015. Hepatitis B, an inflammatory illness of the liver caused by the hepatitis B virus (HBV), was the leading reportable communicable disease in Virginia Beach in 2015. There were 87 cases of chronic Hepatitis B reported in Virginia Beach in 2015. This equates to an incidence rate of 19.3 cases per 100,000 population. Salmonellosis, one of the most common foodborne illnesses in the United States, is a bacterial infection usually acquired through contaminated food or exposure to live animals. In 2015, a total of 49 cases of salmonellosis (10.9 cases per 100,000 population) were reported in Virginia Beach. Campylobacter, like salmonella, is one of the leading causes of foodborne illness in the United States.⁵⁶ Campylobacter infections are generally mild and often require little to no treatment other than hydration and rest. However, Guillain-Barre syndrome and reactive arthritis are two long-term complications that have been linked to campylobacteriosis.⁵⁷ In 2015, there were 48 cases of campylobacteriosis were reported in Virginia Beach, an increase of 65.5 percent compared to 2014.

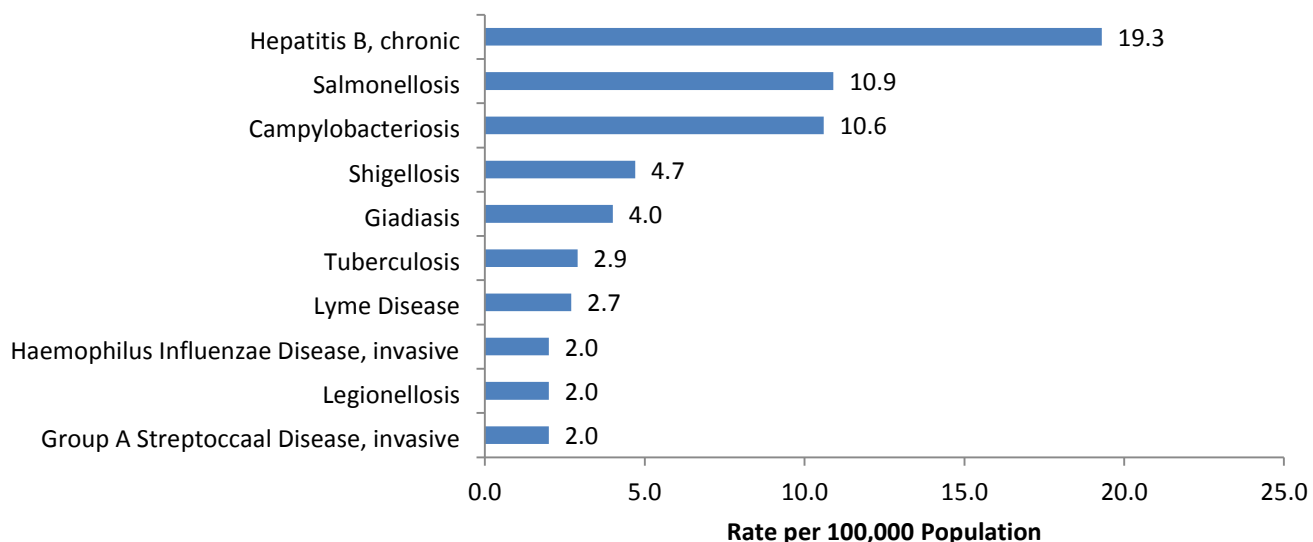


Figure 60: Top 10 Communicable Diseases by Incidence Rate, Virginia Beach, 2015

Source: Virginia Electronic Disease Surveillance System (VEDSS)

SEXUALLY TRANSMITTED INFECTIONS

Rates for sexually transmitted infections including HIV, chlamydia, gonorrhea, and syphilis are significantly higher in Virginia Beach compared to Virginia. In 2015, chlamydia and gonorrhea were the two most commonly reported infectious diseases in Virginia Beach (Table 18).

Sexually Transmitted Infection	Virginia Beach		Virginia	
	Number of Cases	Rate per 100,000	Number of Cases	Rate per 100,000
Chlamydia	2,332	517.7	36,340	436.4
Gonorrhea	678	150.3	8,621	103.5
HIV/AIDS	65	14.4	929	11.2
Total Early Syphilis	86	19.1	860	10.3

Table 18: Sexually Transmitted Infections, Virginia Beach and Virginia, 2015
Source: STD*MIS, Division of Disease Prevention, Virginia Department of Health

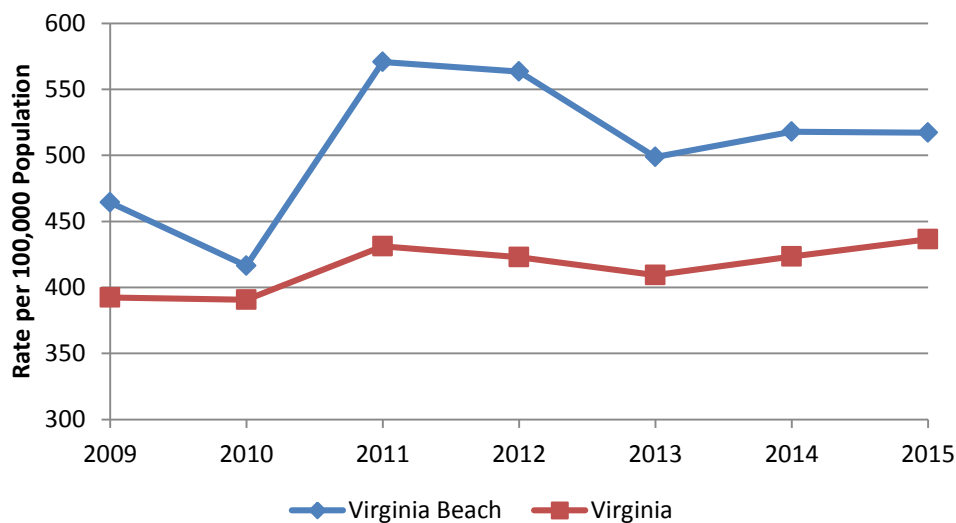


Figure 61: Chlamydia Incidence, Virginia Beach and Virginia, 2009-2015
Source: STD*MIS, Division of Disease Prevention, Virginia Department of Health

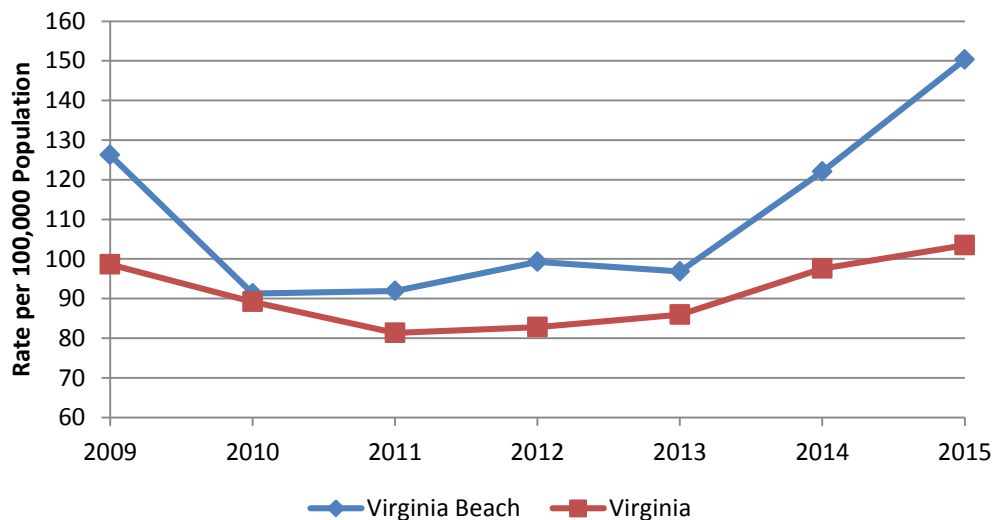


Figure 62: Gonorrhea Incidence, Virginia Beach and Virginia, 2009-2015
Source: STD*MIS, Division of Disease Prevention, Virginia Department of Health

Ambulatory Care Sensitive Conditions

According to the Agency for Health Care Quality and Research, ambulatory care sensitive events are hospitalizations that could be prevented with good outpatient care, which facilitates early intervention and prevention of complications and more severe disease. Hospitalization for an ambulatory care sensitive condition is considered to be a measure of access to appropriate primary health care. A disproportionately high rate is presumed to reflect problems in obtaining access to appropriate primary care. If few events, such as hospitalization for diabetes, asthma, or hypertension, occur, the primary care system is likely functioning well. Health care events identified as ambulatory care sensitive conditions include diabetes, asthma, hypertension, chronic obstructive pulmonary disease (COPD), low birthweight, congestive heart failure, angina, bacterial pneumonia, urinary infection, pediatric gastroenteritis, dehydration, and perforated appendix. For this assessment, data were compiled for the first four conditions.

DIABETES

Diabetes is a chronic disease where individuals have abnormally high blood glucose levels. Diabetes is the leading cause of kidney failure, lower-limb amputations, and adult-onset blindness. People with diabetes are twice as likely to heart disease or stroke as people without diabetes.⁵⁸ According to data from the Virginia Behavioral Risk Factor Surveillance (BRFSS), the percentage of Virginia Beach adults 18 years old and above with diabetes increased from 2012 to 2013. In 2013, 8.6 percent of Virginia Beach adults reported being diagnosed with diabetes, compared to 9.8 percent in the state (Figure 63).

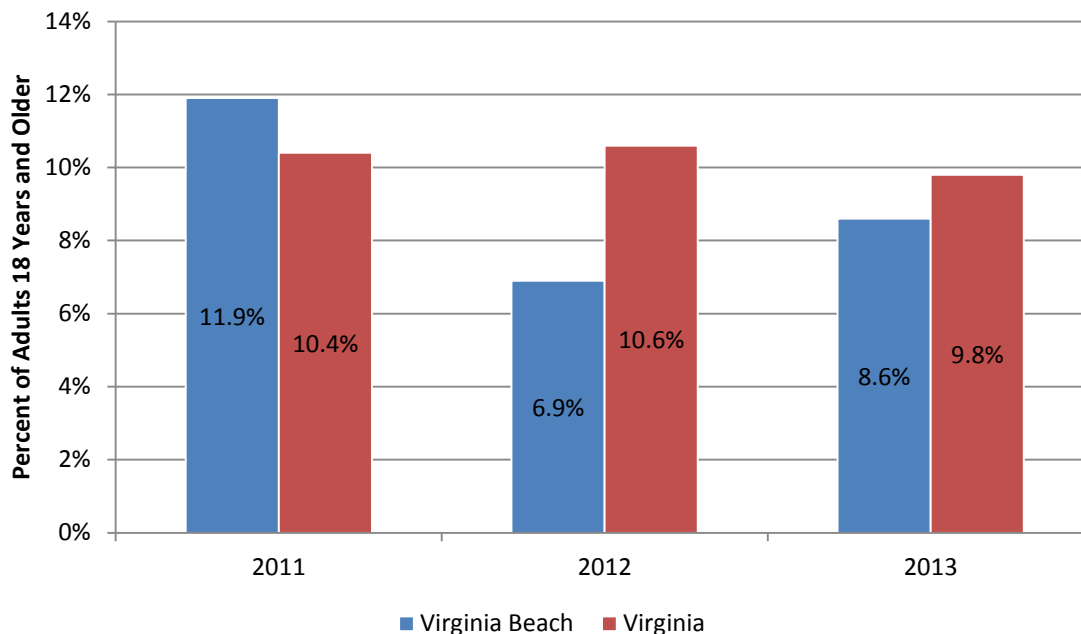


Figure 63: Self-Reported Diabetes Rate, Virginia Beach and Virginia, 2011-2013
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

In 2013, the diabetes hospitalization rate in Virginia Beach was 14.0 hospital discharges per 100,000 residents, which was lower than Virginia (15.7) (Table 19).

	Virginia Beach	Virginia
Hospital Discharge Rate for Diabetes	14.0	15.7

Table 19: Diabetes Hospital Discharge Rate per 100,000, Virginia Beach and Virginia 2013
Source: Bon Secours 2016 Community Health Needs Assessment, Virginia Health Information

HYPERTENSION

Blood pressure is the force of blood pushing against the walls of the arteries as the heart pumps blood. High blood pressure, also called hypertension, happens when this force is too high. Blood pressure normally rises and falls throughout the day, but it can damage your heart and cause health problems if it stays high for a long time. High blood pressure was a primary or contributing cause of death for more than 410,000 Americans in 2014.⁵⁹ Figure 64 shows the self-reported rate of hypertension for Virginia Beach and Virginia in 2011 and 2013. In 2013, 31.8 percent of adults 18 years and older in Virginia Beach reported being diagnosed with high blood pressure, an increase of 19.1 percent from 2011. However, this likely underreports the true effect of hypertension in each locality. About 1 in 5 adults is unaware of having high blood pressure and would not report having it.⁶⁰

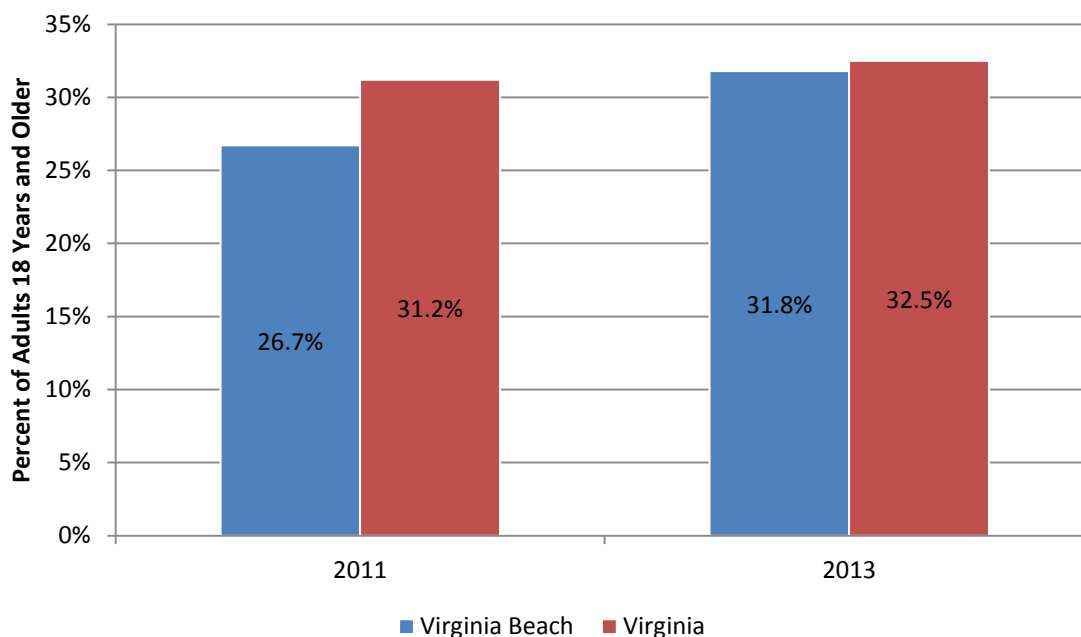


Figure 64: Self-Reported High Blood Pressure, Virginia Beach and Virginia, 2011 and 2013
Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

ASTHMA

Asthma is a lung disease that causes wheezing, breathlessness, chest tightness, and coughing. It can be triggered by indoor and outdoor factors. According to the 2013 Virginia BRFSS, 6.2 percent of Virginia Beach residents reported that they had asthma compared to 8.7 percent of adults across the state. Virginia Beach had a higher hospital discharge rate for asthma in 2013 than Virginia (Table 20).

	Virginia Beach	Virginia
Hospital Discharge Rate for Asthma	7.8	7.6

Table 20: Asthma Hospital Discharge Rate per 100,000, Virginia Beach and Virginia 2013
Source: Bon Secours 2016 Community Health Needs Assessment, Virginia Health Information

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Chronic obstructive pulmonary disease (COPD) is a group of progressive diseases that make it hard to breathe. These diseases include emphysema and chronic bronchitis. COPD is a major cause of disability, and it's the third leading cause of death in the United States.⁶¹ In 2014, it was the fourth leading cause of death in Virginia Beach. Symptoms often worsen over time and can limit your ability to do routine activities. Tobacco smoke, a major risk factor for COPD, is involved in 80 to 90 percent of cases. Other risk factors include occupational chemical and dust exposures. In 2013-2014, 6.5 percent of Virginia Beach adults reported being diagnosed with COPD, the same as the state rate. Table 21 shows that the hospitalization rate for COPD was lower in Virginia Beach in 2013 compared to the state.

	Virginia Beach	Virginia
Hospital Discharge Rate for COPD	10.2	15.7

Table 21: COPD Hospital Discharge Rate per 100,000, Virginia Beach and Virginia 2013
Source: Bon Secours 2016 Community Health Needs Assessment, Virginia Health Information

Mental Health

Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, can affect a person's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.⁶² Poor physical and mental health days measure the number of days in the past 30 days that individuals rated their physical or mental health as not good. Estimates of poor physical health days are based on responses to the CDC's BRFSS question: "Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?" Estimates for poor mental health days are based on responses to the question: "Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" Self-reported healthy/unhealthy days have been widely used and studied for their validity. One study found that counties with adults who reported more unhealthy days were more likely to have higher unemployment, poverty, percentages of adults who did not complete high school, mortality rates, and prevalence of disability.⁶³ In 2014, Virginia Beach residents reported an average of 3.2 poor physical health days and 3.0 poor mental health days (Figure 65).

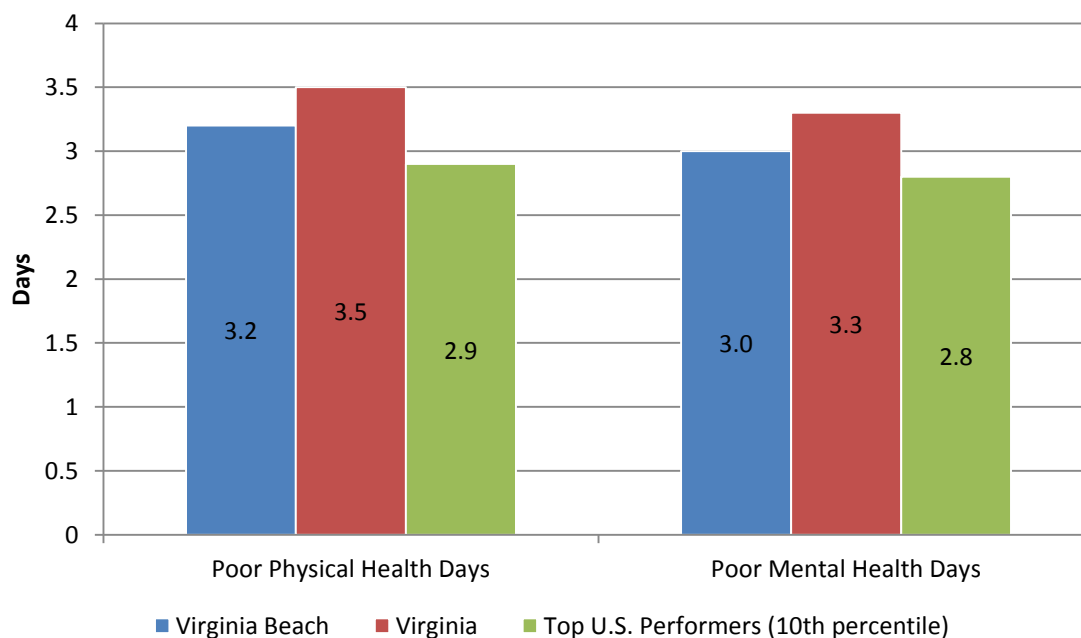


Figure 65: Poor Physical/Mental Health in the Last 30 Days, Virginia Beach and Virginia, 2014

Source: County Health Rankings; CDC's BRFSS

Persons who reported 14 or more days of poor mental health were defined as having frequent mental distress (FMD). Frequent mental distress may interfere with daily activities, such as eating well, maintaining a household, working, or sustaining personal relationships.⁶⁴ In 2014, the overall FMD prevalence among Virginia Beach adults was 9 percent compared to 10 percent in Virginia.⁶⁵

MENTAL DISORDERS

Mental disorders are generally characterized by changes in mood, thought or behavior. Evidence has shown that mental disorders, especially depressive disorders, are strongly related to the occurrence, successful treatment, and course of many chronic diseases including diabetes, cancer, cardiovascular disease, asthma, and obesity.⁶⁶

According to the Virginia Department of Behavioral Health and Developmental Services, in 2012, 18,545 adults in Virginia Beach had a serious mental illness (Table 22). A serious mental illness is defined as a severe and persistent mental or emotional disorder that impairs the functioning of adults, age 18 years of age or older, in such primary aspects of daily living as personal relationships, self-care skills, living arrangements, or employment. Individuals with serious mental illness who have also been diagnosed as having a substance use disorder or intellectual disorder are also included in this definition.

	Virginia Beach
Serious Mental Illness (Population Age 18+)	18,545
Intellectual and Related Developmental Disabilities	8,046
Drug and Alcohol Dependence (Population Age 12+)	18,037

Table 22: Mental Health Disorders Prevalence Estimates, Virginia Beach, 2012

Source: Virginia Department of Behavioral Health and Developmental Services' 2014-2020 Comprehensive State Plan

The percentage of adults reporting a history of depression in Virginia Beach has decreased 19.1 percent since 2012 (Figure 66). In 2014, 14.8 percent of Virginia Beach adults reported ever being diagnosed with depression compared to 17.4 percent of adults in the state. Depression is associated with an increased risk for mortality from suicide.⁶⁷ In 2014, suicide was the ninth leading cause of death in Virginia Beach.⁶⁸ (Additional information about suicide can be found on page 49 of this report.)

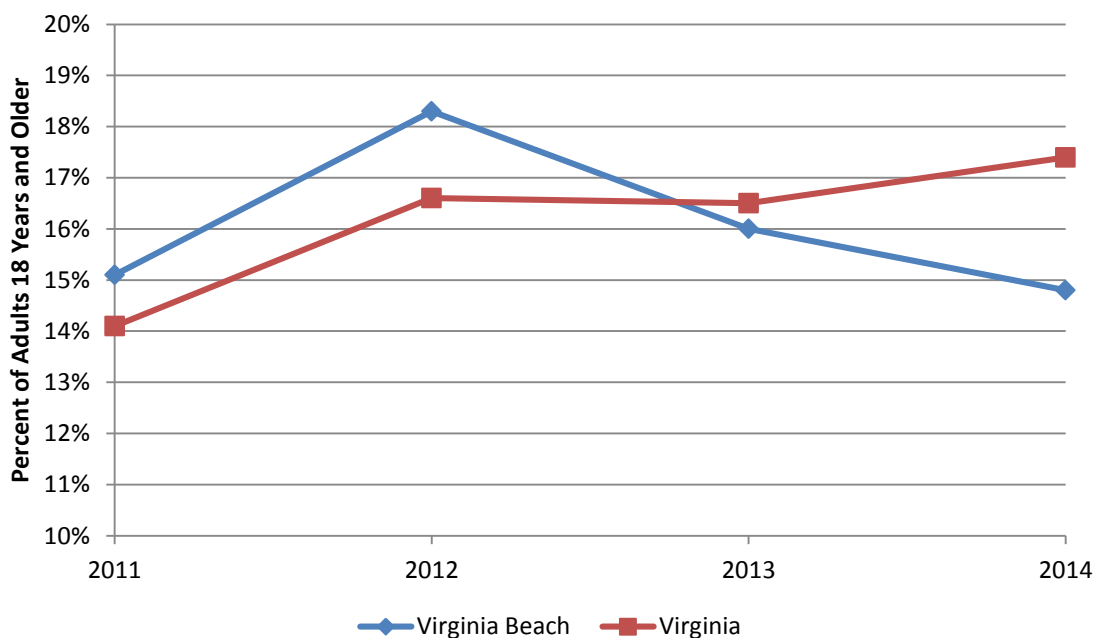


Figure 66: Self-Reported Depressive Disorder Rate, Virginia Beach and Virginia, 2011-2014

Source: Virginia Behavioral Risk Factor Surveillance Survey (BRFSS)

Mental Disorders in Children

According to the CDC, “Mental disorders are chronic health conditions that can continue through the lifespan. Without early diagnosis and treatment, children with mental disorders can have problems at home, in school, and in forming friendships. This can also interfere with their healthy development, and these problems can continue into adulthood.”⁶⁹ Federal and state regulations define emotional disturbance as a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree which adversely affects educational performance:

- An inability to learn which cannot be explained by intellectual, sensory, or other health factors;
- An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
- Inappropriate types of behavior or feelings under normal circumstances;
- A general pervasive mood of unhappiness or depression; or
- A tendency to develop physical symptoms or fears associated with personal or school problems.

The term includes children who are schizophrenic, but does not include children who are socially maladjusted unless it is determined that they are emotionally disturbed.⁷⁰

Over the last several years, both the number and rate of public school students identified as having an emotional disturbance have declined in the city and in the state. The city’s number went from 504 in 2009-10 to 406 in 2014-15. The city’s rate per 1,000 students decreased from 7 to 6 over the same period. The state’s rate in 2014-15 was 7.2 (Figure 67).

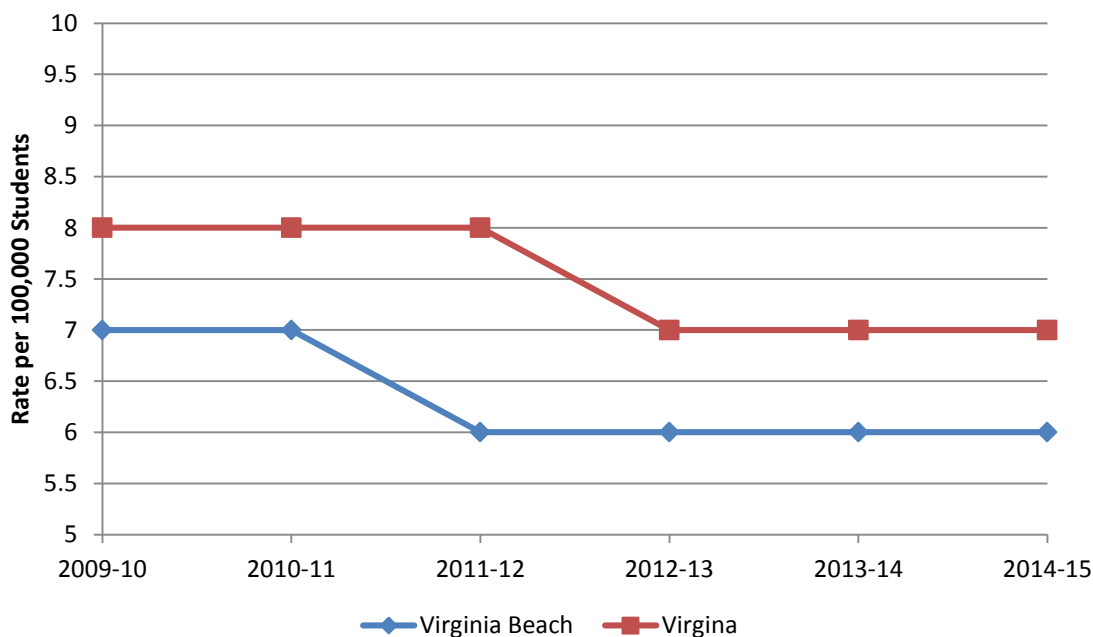


Figure 67: Public School Students (Ages 3-22) Identified as Having an Emotional Disturbance, Virginia Beach and Virginia, 2009-2015
Source: Virginia Department of Education, Statistics & Reports/Enrollment & Demographics/Special Education Child Count/Custom Reports

SUBSTANCE ABUSE

Substance abuse has a major impact on individuals, families, and communities. By 2020, mental and substance use disorders are predicted to surpass all physical diseases as a major cause of disability worldwide. Additionally, drug and alcohol use can lead to other chronic diseases such as heart disease and diabetes. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), addressing the impact of substance use alone is estimated to cost Americans more than \$600 billion each year.⁷¹

In 2015, 56 drug overdose deaths occurred in the city of Virginia Beach, representing a 5-year increase of 32.3 percent, from 9.3 deaths per 100,000 residents in 2011 to 12.3 deaths per 100,000 residents in 2015 (Figure 68).

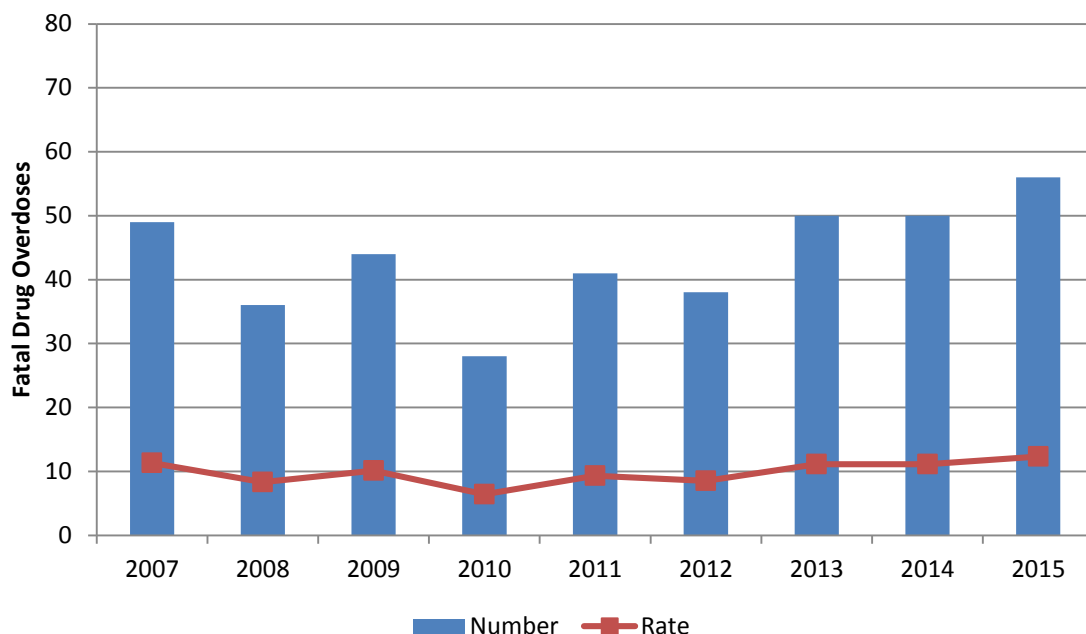


Figure 68: Number of Fatal Drug Overdoses, Virginia Beach, 2007-2015
Source: Virginia Department of Health Office of the Chief Medical Examiner

Compared to other localities within the state of Virginia, Virginia Beach had the third highest number of fatal overdoses in 2015, trailing only Fairfax County and Richmond City (Table 23).

Locality	Fatal Drug Overdoses	
	Number	Rate
1. Fairfax County	82	7.3
2. Richmond City	65	29.8
3. Virginia Beach City	56	12.3
4. Norfolk City	50	20.2
5. Chesapeake City	42	17.6
6. Henrico County	42	13.1

Table 23: Number and Rate of Fatal Drug Overdoses by Most Common Localities of Injury in Virginia, 2015
Source: Virginia Department of Health Office of the Chief Medical Examiner

According to the CDC, 91 Americans die every day from an opioid overdose.⁷² From 2007-2015, opioids (fentanyl, heroin, and/or one or more prescription opioids) made up approximately 84 percent of all fatal drug overdoses annually in Virginia Beach. However, this percentage is increasing each year due to the significant increase in fatal fentanyl and/or heroin overdoses beginning in late 2013 and early 2014 (Figure 69).

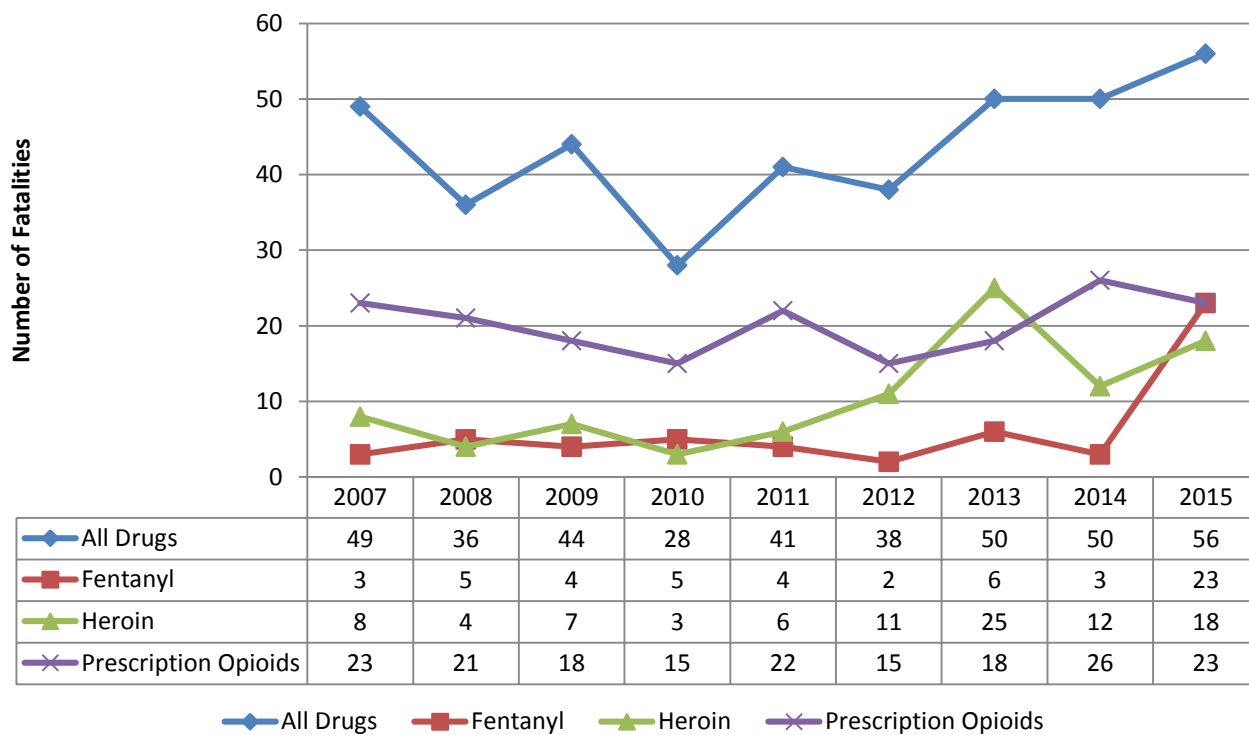


Figure 69: Number of Fatal Drug Overdoses, Virginia Beach, 2007-2015
Source: Virginia Department of Health Office of the Chief Medical Examiner

Key Findings

- Since 2007, fatal prescription opioid overdoses have been the leading category of drugs causing or contributing to death in Virginia Beach. In 2015, there were 23 deaths from prescription opioids in Virginia Beach, the highest of any locality in the state of Virginia.
- From 2007 to 2015, 94 Virginia Beach residents died from heroin overdoses. From the lowest number in 2010 to 2015, there's been a 500 percent increase in the total number of heroin-related overdose deaths in the city.
- In 2015, 23 fentanyl-related overdose deaths occurred in Virginia Beach, a 667 percent increase from 2014, with fentanyl-related deaths accounting for 41.1 percent of all drug poisoning deaths that year, a substantial increase compared with 6 percent in 2014.

Community Input

FOCUS GROUPS

Community input was gathered through focus groups with residents and service providers. The results helped to provide further insight into the survey findings through intensive discussions with residents on their perceptions of quality of life and health in their communities.

Background & Methodology

In collaboration with Sentara Virginia Beach General Hospital, the Virginia Beach Department of Public Health conducted 5 focus groups in the city of Virginia Beach between July and October 2016. Feedback from the focus groups provided primary, qualitative data regarding the health needs of the community. The community members that participated in the focus groups represent a diverse cross-section of Virginia Beach residents. Special effort was made to solicit input from underserved and underrepresented populations.

Findings

Despite the varied backgrounds of participants, the community input yielded many common themes. Some of the key issues most frequently mentioned are summarized below.

Key Health Issues

When asked about major health issues facing the Virginia Beach community, participants identified the following issues:

- Obesity/Overweight
- Cancer
- Diabetes
- Hypertension
- Heart Disease
- Mental Health and Substance Abuse
- Aging Issues

The health needs listed most often as concerns were obesity and related issues, including difficulty accessing healthy food, the need for guidance on healthy behaviors and life-style related diseases such as diabetes and hypertension.

Mental health concerns were raised many times in relation to both children and adults. Participants said that barriers to receiving mental healthcare are stigma, cost, and availability of providers. Substance abuse issues were also discussed at length by participants.

Participants mentioned that there is a growing aging population in the area and explained that the need for aging services and caregiving support is increasing.

Access to Health Care

Barriers to Health Care

Lack of awareness of health resources available in the community was seen as a major barrier to accessing care. Participants repeatedly stated that people in the community are not aware of the health care services and options that are available to them.

Several participants indicated that they or someone they know have had difficulty obtaining health care services. Participants indicated that lack of insurance coverage and inability to pay were major barriers to accessing health care services in the community. One participant acknowledged that the emergency department was not an appropriate place to go for basic medical care or to treat chronic health problems, but said she sometimes used the emergency department because her options for care were so limited.

Transportation was also cited as a barrier in accessing health care. Participants talked about how the system is fragmented and not easily accessible throughout the city.

Community Assets

In an effort to identify potential resources to assist in addressing the community's top needs focus group participants were asked to share their perceived strengths and assets of the community.

Participants noted numerous strengths and assets of Virginia Beach including:

- Strong non-profits and social service organizations
- Health care services and providers
- Community gardens and farmers markets
- Recreation centers
- Employee wellness programs
- Support groups
- Access to high quality secondary education and higher education institutions

Areas of Opportunity

When asked what more could be done to improve health in the community, participants emphasized the need to improve communication and awareness about existing services. In addition, participants suggested the following to improve community health:

- Health fairs
- Nutrition and exercise programs
- Chronic disease management programs
- Increased community outreach
- Prescription assistance programs
- Patient navigation services

Appendix A: Virginia Beach's Beach Monitoring Advisory Data

Water Monitoring Location	Number	2010	2011	2012	2013	2014	2015	2016
Back Bay Beach	Advisories	0	0	0	0	1	0	0
	Days	0	0	0	0	1	0	0
Little Island Beach South	Advisories	0	0	1	0	0	0	0
	Days	0	0	1	0	0	0	0
Little Island Beach North	Advisories	0	0	0	0	0	0	0
	Days	0	0	0	0	0	0	0
Sandbridge South	Advisories	0	0	0	0	0	0	0
	Days	0	0	0	0	0	0	0
Sandbridge North	Advisories	0	0	1	0	0	0	0
	Days	0	0	1	0	0	0	0
Dam Neck South	Advisories	0	0	0	0	0	0	0
	Days	0	0	0	0	0	0	0
Dam Neck Middle	Advisories	1	0	0	0	0	0	1
	Days	2	0	0	0	0	0	1
Dam Neck North	Advisories	0	0	0	0	0	1	0
	Days	0	0	0	0	0	1	0
Camp Pendleton	Advisories	0	0	0	0	1	0	0
	Days	0	0	0	0	1	0	0
Croatan	Advisories	0	0	1	0	1	0	0
	Days	0	0	1	0	2	0	0
15th Street	Advisories	1	0	0	0	0	0	1
	Days	1	0	0	0	0	0	1
28th Street	Advisories	0	0	0	0	1	0	0
	Days	0	0	0	0	2	0	0
45th Street	Advisories	0	0	0	0	1	0	0
	Days	0	0	0	0	1	0	0
63rd Street	Advisories	0	0	0	1	1	0	0
	Days	0	0	0	1	1	0	0
78th Street	Advisories	0	0	0	0	0	0	0
	Days	0	0	0	0	0	0	0
Fort Story South	Advisories	1	0	0	0	0	0	0
	Days	1	0	0	0	0	0	0
Fort Story West	Advisories	0	0	0	0	1	0	0
	Days	0	0	0	0	1	0	0
First Landing Park	Advisories	1	0	0	0	2	0	0
	Days	1	0	0	0	2	0	0
Sea Gate	Advisories	1	0	1	0	1	0	0
	Days	1	0	1	0	2	0	0
Lesner Bridge East	Advisories	1	0	3	2	1	0	0
	Days	1	0	4	2	2	0	0
Chesapeake Beach	Advisories	1	1	1	0	1	0	0
	Days	1	1	1	0	2	0	0
Chick's Beach	Advisories	3	1	1	1	1	0	0
	Days	3	2	1	1	2	0	0
TOTAL	Advisories	10	2	9	4	13	1	2
	Days	11	3	10	4	19	1	2

Table 24: Frequency of Swimming Advisories, Virginia Beach, 2010-2016
Source: Virginia Department of Health, Office of Epidemiology

Appendix B: Endnotes

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²⁰ Fast-Food Restaurants: Establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to the customer's location.

²¹ Convenience Stores: Establishments primarily engaged in retailing a limited line of goods that generally includes milk, bread, soda, and snacks. Also includes the number of gasoline convenience stores, which are engaged in retailing automotive fuels (for example, diesel fuel, gasohol, and gasoline) in combination with convenience store or food mart items. These establishments can either be in a convenience store (food mart) setting or a gasoline station setting

²² Grocery Store: Establishments primarily engaged in retailing a general line of food, such as canned and frozen foods; fresh fruits and vegetables; and fresh and prepared meats, fish, and poultry. Included in this industry are delicatessen-type establishments primarily engaged in retailing a general line of food.

- ²³ Full-Service Restaurants: The number of full-service restaurants in the county. Full-service restaurants include establishments primarily engaged in providing food services to patrons who order and are served while seated (i.e., waiter/waitress service) and pay after eating. These establishments may provide this type of food service to patrons in combination with selling alcoholic beverages, providing take-out services, or presenting live nontheatrical entertainment.
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