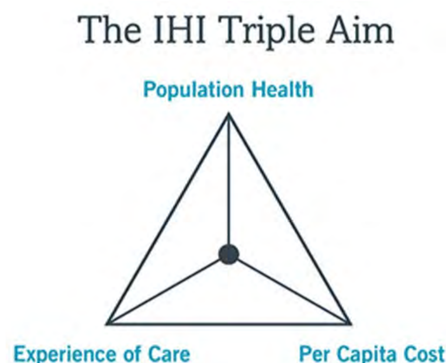
Anne Arundel County
COMMUNITY HEALTH
Needs Assessment, 2015

Preface

The Context of Health Care in Maryland and Anne Arundel County.

The health care landscape in Anne Arundel County, Maryland and the United States has been rapidly changing over the past several years and will continue to evolve. Health system reforms in public health, health care, insurance and other sectors are resulting in dramatic changes to both financing and service delivery. These changes include improving the efficiency and effectiveness of health organizations and services, as well as increasing connections and collaborations among public health, health care and other sectors (Centers for Disease Control and Prevention, 2014.)

Maryland, in particular, is a leader in health system transformation. Maryland's hospitals, guided by a five-year agreement with the Centers for Medicare & Medicaid Services, are making progress toward the Institute for Healthcare Improvement's Triple Aim of Health Care: to reduce costs, improve the health of communities and improve the experience of care for patients. Maryland is the only state in the nation that sets the rates hospitals can charge for their services. Rates are the same for all patients for the same service in the same hospital, whether they have Medicare, Medicaid, private health insurance, or pay out of their own pocket. In January 2014, the Maryland "Medicare waiver" was modernized to better reflect the current state of health care; a trend toward more outpatient care and prevention and less inpatient care. The new waiver agreement aligns with the goals of the Triple Aim of Health Care; less expensive care, better experiences for patients and healthier communities. The new agreement requires hospitals and the state to achieve specific cost and quality targets (Maryland Hospital Association, 2014).



All of Maryland's hospitals now operate under fixed annual budgets that shift incentives from volume to value. This is a model where hospitals are not rewarded based on how many patients they treat, but rather on how successful they are in keeping their patients and communities healthy. The result is that hospitals are keeping costs down by trimming unnecessary use of hospital services, improving quality and working to keep members of their communities healthier and out of the hospital. To do this, hospital leadership has moved care beyond their walls and into communities by expanding preventive care and collaborating with others to make sure care does not stop after a patient leaves the hospital (Maryland Hospital Association, 2014.) New models of care are being developed that include care coordination and navigation services, community health workers, non-traditional settings of care and unique partnerships. There is an increased awareness of the need to address the socioeconomic determinants of health through these new care models.

At the same time, due to the expansion of Medicaid and the decrease in uninsured patients, many public health departments are reducing the direct clinical services they provide. Increasingly, health departments are focusing their efforts on prevention and education, helping newly insured and others access health care services, and convening community stakeholders in coalitions to improve community health. Other governmental agencies are also being tasked with helping to keep the communities they serve healthier and able to live more productive lives. All of these changes have placed an increased emphasis on public-private partnerships, coalition building and advocacy for community health improvements. There is increased collaboration between health systems, community hospitals, insurance companies, physician practices, long-term care and other providers, as well as community-based organizations, public health departments and patients and consumers. These collaborations will only continue to grow and mature.

FOREWORD

The 2015 Anne Arundel County Community Health Needs Assessment (CHNA) is a compilation of summative (secondary) and formative (qualitative) data. The summative data was gathered from a variety of local, state and national sources. Population and socioeconomic statistics were compiled using data from the United States (U.S.) Census Bureau's Population Estimates Program and the American Community Survey 1-Year and 5-Year Estimates. Birth and death data files were obtained from the Maryland Department of Health and Mental Hygiene, Vital Statistics Administration. The emergency department and inpatient hospital discharge data files were obtained from the Maryland Health Services Cost Review Commission for topics like birth, mortality and hospital utilization. Other data sources used for this report were: Maryland Vital Statistics Annual Reports, Maryland Department of Health and Mental Hygiene's Annual Cancer Reports, Behavioral Risk Factor Surveillance System (BRFSS), Centers for Disease Control and Prevention's CDC WONDER Online Database, Centers for Medicare & Medicaid Services, National Vital Statistics Reports, County Health Rankings and a variety of local databases. The specific data sources are listed throughout the report.

The 2015 CHNA draws on qualitative data gathered from **12 key informants as follows:**

CEO, University of Maryland Baltimore Washington Medical Center (UMBWMC)
CEO, Anne Arundel Medical Center (AAMC)
Executive Director, Anne Arundel County Mental Health Agency
Health Officer, Anne Arundel County Department of Health
Health Consultant, Anne Arundel County
Director, Anne Arundel County Crisis Response
Clinical Director, Anne Arundel County Mental Health Agency
Community Health Director, AAMC
Two county legislative leaders
Director, Anne Arundel County Department of Aging and Disabilities
Program Director, Domestic Violence Program, YWCA of Annapolis and Anne Arundel County
Further qualitative data was gathered from **eight focus groups as follows:**

Emergency Department and Emergency Response. Personnel from both hospitals' ERs, the EMS system, the Anne Arundel County Fire Department, and County Public School System psychologists and counselors (18)

Low-Income Youth. Job seekers, high school drop outs, Medicaid recipients, single parents. (8)

North County. Community members, substance abuse professionals, health professionals, law enforcement, council member (12)

South County. Community members, substance abuse professionals, law enforcement, health professionals (10)

Behavioral Health (1). Residential providers, crisis response, mental health professionals, behavioral health providers (9)

Behavioral Health (2). Parents, mental health providers (5)

Seniors. Three groups including professionals, care coordinators and senior citizens (20)

Hispanic Community. Consumers, attorney, non-profit leader (6)

Interviews and conversations were recorded, with the permission of participants, and transcribed verbatim. The data was read and reread until dominant themes emerged which became the subtext of the report. All participants gave permission for their words to be used in the final report, although their identities are protected.

The authors take full responsibility for the interpretations and analyses presented here.
The report has only one fundamental goal: to help frame an informed discussion about community health needs and trends in Anne Arundel County, Maryland, in order to contribute to planning and actions that address those needs.

Information Gaps in the Data

•The mental health secondary data in this report reflects the public mental health system only.

•Substance abuse numbers reflect self-reports and those abusers coming to the attention of the police departments.

•Numbers for heroin and other opiate addictions rely heavily on police reports and emergency room data. There is no accurate count for the number of heroin addicts in the county.

•Domestic violence numbers are unreliable. Many incidences of domestic violence go unreported and reflect only those victims who seek medical attention or who seek support through a domestic violence service provider.

•Homeless youth and family numbers reflect only those families or youth in a shelter or counted by the local public school system. Those families staying with a friend or another family are not captured in the secondary data.

•Opinions from youth consumers of mental health services were not captured in this report.

•Anecdotal information pointed to a growing number of undocumented residents in the county. Currently there is no method to capture an accurate number of those residents.

About The Authors

Dr. Pamela Brown is currently the Executive Director of the Anne Arundel County Partnership for Children, Youth and Families. She completed her Ph.D. in Educational Leadership at Florida Atlantic University. Her dissertation focused on the importance of community partnerships in diverse neighborhoods. She is a University Research Reviewer and Dissertation Chair for the University of Phoenix specializing in qualitative case study methods. She is certified to conduct ethical research through the Collaborative Institutional Training Initiative at the University of Miami. She has been conducting community needs assessments for over 20 years.

Bikash Singh, an epidemiologist with the Anne Arundel County Department of Health, conducted secondary data analysis. Mr. Singh has a Master's in Public Health with a specialization in epidemiology, and he has extensive experience in epidemiology, health data analysis and demography.

The Anne Arundel County Community Health Needs Assessment (CHNA) is the result of a working collaboration of the University of Maryland Baltimore Washington Medical Center, Anne Arundel Medical Center, Anne Arundel County Department of Health and the Anne Arundel County Mental Health Agency. The CHNA was developed as a planning tool for use by the Healthy Anne Arundel Coalition, both hospitals and county government agencies, and it will be used as information for each hospital's community benefit plans as well as for the strategic and operational plans of the Healthy Anne Arundel Coalition. Additionally, this plan will be used by other Healthy Anne Arundel Coalition partner organizations including the City of Annapolis, Housing Authority of the City of Annapolis, Anne Arundel County Public Schools, the Community Foundation of Anne Arundel County and MedStar Harbor Hospital. All organizations throughout Anne Arundel County, including community-based organizations, faith-based organizations and businesses are encouraged to use the CHNA findings.

With thanks to Lauren Fretz, University of Alabama, for graphics and design.

Summary of Principal Findings

Population: According to 2013 census estimates, the Anne Arundel County population is 556,348; a growth of 11.2% since 2000. While the White Caucasian population of the county continues to diminish, the Hispanic population is growing more significantly than all races/ ethnicities and is now at 6.4% or 34,854 residents.

Seniors: The senior population (over 65) trend is one of rapid growth, increasing from the 2013 figure of 99,086 to 140,000 by 2030, when the trend line begins to dip. As of 2013, there were 75,607 Medicare beneficiaries in Anne Arundel County.

Leading Causes of Death: In 2013, life expectancy in the county rose to an average of 79.8 years. Cancer was the leading cause of death, followed by heart disease which accounted for nearly 47% of all deaths. There was a 6% decline in age-adjusted death rates for all cancer deaths among Blacks, an 11% decline among Whites and a 22% decline among Hispanics of any race. In 2013, 22% of all deaths in Anne Arundel County were from heart disease.

Obesity: Overweight and obesity are still significant health issues in Anne Arundel County leading to secondary issues such as diabetes. The obesity rates for those with a Body Mass Index (BMI) of 30 or more increased almost four percentage points. Approximately 69,000 (12%) of Anne Arundel County residents live in an area categorized as a food desert, which is an urban neighborhood or rural towns without ready access to fresh, healthy and affordable food.

Access to Health Care: The Affordable Care Act (ACA) has increased access and expectations for health care. The number of Anne Arundel County Medicaid enrollments increased from 68,166 in January 2013 to 84,616 in December 2014. Nonetheless, access to primary care is a growing issue in the county. Compared to Maryland, Anne Arundel County has 21.6% fewer primary care physicians and 8.5% less dentists per 100 population.

Mental Health: The demand for mental health services has increased for every age group. 11,321 residents were served by the County Mental Health Agency in 2014, an increase of 11% from FY13. There has been a 14.5% increase in mental health services for children ages 6 to 12 and a 9.6% increase for children between 13 and 17 years of age. Residential mental health beds are almost nonexistent in the county, although there are 259 residential rehabilitation beds (for the chronic and persistent mentally ill). There are only 24 crisis beds and only one in-patient psychiatric unit with 14 beds, and it is often full. There is one Spanish-speaking psychiatrist available to the Hispanic uninsured population. There are very few Spanish speaking mental health counselors.

Opioids: In 2014, the county had the third highest number of prescription opioid-related deaths in Maryland (after Baltimore City and Baltimore County). The increase in controls on prescription drugs has made the trade in prescription opioids more expensive. Partly because of this, heroin

(a derivative of opium and an illegal opiate drug) has made a profound reappearance on the streets of Anne Arundel County. Out of 101 intoxication deaths that occurred in Anne Arundel County in 2014, 53 were heroin-related. There was almost a three-fold increase in the number of heroin-related deaths (from 18 to 53) between 2010 and 2014.

Co-Occurring Issues: The relationship between substance abuse and mental illness is well documented. Patients with mental health issues may "self-medicate" by using and abusing drugs to manage their mental illness. Officials with Pathways substance abuse treatment center estimate that 80% of their population has a co-occurring disorder, yet treatment and payment options are often in traditional silos.

Access to Substance Abuse Treatment Services: Treatment options are limited in the county, especially in-patient treatment. There are currently five residential treatment providers, including Chrysalis House, Damascus House, Hope House, Samaritan House and Pathways, operated by Anne Arundel Medical Center. Pathways offers a variety of outpatient services and 40 in-patient beds, 32 for adults and eight for adolescents age 13-17. There is promise of a 120-bed facility at the Crownsville hospital site and renovations are already underway. Chrysalis House is still the only residential treatment facility that offers in-patient services to women and their children.

Emergency Departments (ED): The two hospital EDs have become the "catch-all" for somatic and behavioral health treatment. The ED is a trusted venue and one of the main "front doors" for primary care, especially among lower income residents. There were 335 visits to the ED for every 1,000 individuals in the county. The ED visit rate for Blacks was the highest among the racial and ethnic groups examined. For those residents with critical substance abuse and mental health issues, the ED is often their only choice. Domestic violence, sexual assault or abuse victims present in increasing numbers at the ED. ED providers are often involved in time consuming charting and the integration of victims' care with law enforcement, social workers and patient advocates.

Communication Among Agencies: There is a lack of communication and partnering between the various health and human services agencies, including emergency personnel. Communication between agencies is made more awkward by the regulations for patient confidentiality laid out by the Health Insurance Portability and Accountability Act (HIPAA) and the Family Educational Rights and Privacy Act (FERPA).

Transition Points and Care Coordination: The two points of entry and discharge into EDs, hospitals and other systems were highlighted as problematic. At the point of admission, community service providers are not part of the process. The discharge process, especially from EDs, is often hurried with no means to follow up with the patient. Referrals may be made at this point; and the patient, who could have a variety of wellness and social issues, is expected to follow up. There are care coordinators in the health and human services systems, but their work is not coordinated across silos of care.

Poverty: There are 33,352 Anne Arundel County residents (6.3%) living below the poverty level, a slight dip from the 2011 level of 34,410 residents (6.4%). Census estimates suggest 14.7% of the single parent households in the county make an income that is below the federal poverty level.

North and South Polarization: The majority of negative social and health indicators are polarized in the northern and southern regions of the county. The highest percentage of poverty is in the ZIP code that contains Brooklyn at a staggering 26.5%. In South County, access to health care is very limited and there are few primary care doctors. Of the 11 medically underserved areas of the county, all but two are in South County.

Transportation: The lack of transportation continues to be a major issue for the county. There is no public transportation in South County, including taxi service, and only three bus routes serve the county. Neither city nor county bus routes operate early in the morning or later in the evening, and the wait between buses can be one to one and a half hours.

Housing: Rising home prices, high private rents and a lack of affordable and multi-family housing are continuing problems for large segments of the population. The median price for a house in Anne Arundel County is fourth highest in the state at $320,000. In 2013, Anne Arundel County homeowners spent 34.3% and renters spent a staggering 49.5% of their income on housing. There are 9,000 families on the waiting list for public housing and 10,000 families on the waiting list for Housing Choice (Section 8) vouchers.

Homelessness: Homelessness is a continuing issue for individuals and families in the county. The fastest growing homeless population is homeless families and youth who are staying with friends or living temporarily in motels. There are over 250 families living in a shelter or transitional housing. The Anne Arundel County Public School System's estimates suggest there are over 925 county students who do not sleep in their own homes on any given night.

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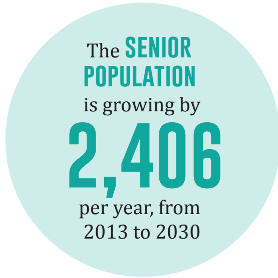
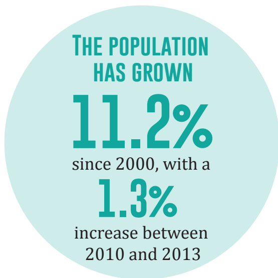
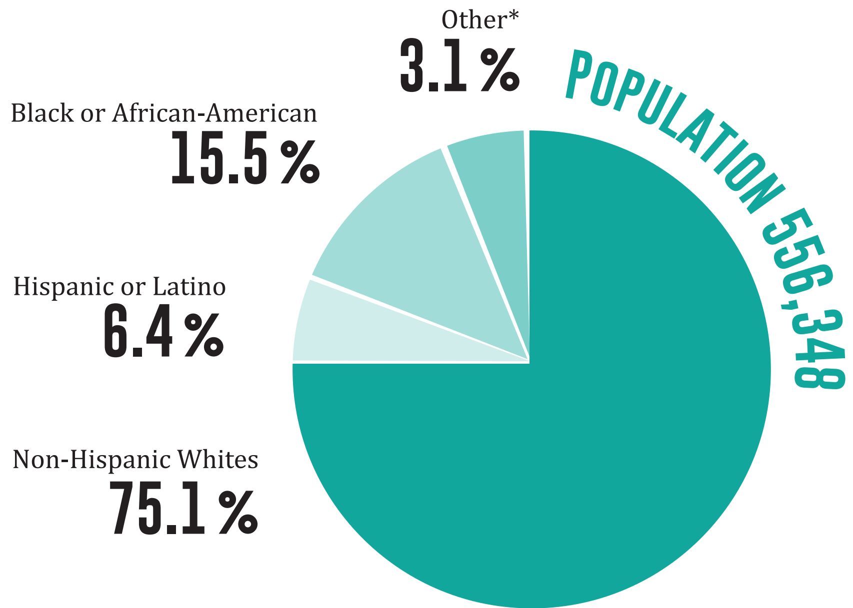
Anne Arundel County

OVERVIEW

Needs Assessment, 2015







U.S. Census Bureau, American Community Survey, 2013. "Other" here includes "American Indian and Alaskan Native", "Asian", "Native Hawaiian or other Pacific Islander", "Some other race", or "Two or more races". Therefore, the "White" and "Black" figures are those who were counted as "White alone" or "Black alone."

POVERTY is concentrated in the **NORTH AND SOUTH OF THE COUNTY.**

33,352 residents (6.3%) **LIVE BELOW THE POVERTY LEVEL**

26.5% of residents living in the ZIP Code that contains Brooklyn **LIVE IN POVERTY**

2 MAJOR HOSPITALS
Anne Arundel Medical Center (AAMC) in Annapolis and the University of Maryland Baltimore Washington Medical Center (BWMC) in Glen Burnie

County Overview

Anne Arundel County is located in the state of Maryland and is home to more than 556,000 residents. The county is located in the heart of the nation's fourth largest marketplace, the Baltimore-Washington D.C. corridor. It is situated between the rapidly growing Washington Metropolitan Area and the redeveloping Baltimore Metropolitan Area. The county is adjacent to America's East Coast Main Street (I-95), the Northeast Corridor, which is the longest high-speed rail corridor in the United States, and to the Port of Baltimore, which has been expanded to accept greater amounts of shipborne commerce due to the widening of the Panama Canal.

The county is an appealing place to live. Its natural beauty can be enjoyed through two state and 70 county parks and through an extensive network of recreation and transportation trails. With 534 miles of linear coastline, the county ranks second for waterfront, after Frederick County, in the state and second in the nation when compared to other counties. Despite this abundance of water there are only five points of public water access for county residents.

The Chesapeake Bay is perhaps Anne Arundel County's most treasured natural resource, constituting the largest estuary in the United States. However, despite many efforts by federal, state and local governments and other interested parties, pollution in the bay does not meet existing water quality standards. Nineteen separate local water bodies are not currently meeting water quality standards. Maryland Department of Environment has established clean-up plans for seven of these segments. The good news is that since the 1983 clean-up effort was launched, nutrient pollution has been reduced by 20% (Chesapeake Bay Foundation, 2015). According to the Chesapeake Bay Foundation, all of our rivers are "impaired" under the Clean Water Act, meaning they do not meet water quality standards for their intended use. The pollutants that are largely responsible for these impairments are nutrients in the form of nitrogen and phosphorus, and sediment that come from polluted runoff. Polluted runoff also contributes 81% of the suspended sediments in the Severn River. The Patapsco (North County) has seven impairments, making it the worst in Maryland.

Air quality is another issue for the county. Anne Arundel was given an F by the American Lung Association for an average of 23 unhealthy, high ozone days every year between 2011 and 2013. The grade remained the same for the newly released 2015 figures. High ozone causes respiratory harm (e.g., worsened asthma, worsened COPD, inflammation) can cause cardiovascular harm (e.g., heart attacks, strokes, heart disease, congestive heart failure) and may cause harm to the central nervous system.

The county's four distinct geographic quadrants reflect major differences. West County, dominated by the military installation of Fort George G. Meade (Fort Meade), is growing more than any other area. That growth is fueled by job and operational additions at Fort Meade, the National Security Agency, Baltimore/Washington International Thurgood Marshall Airport (BWI Airport) and the Arundel Mills complex featuring Maryland Live! Casino. The growth is also related to Maryland's Base Realignment and Closure (BRAC). The northern part of the county (specifically Glen Burnie, Brooklyn and Pasadena) touches the edges of Baltimore City and shares issues related to urban poverty, including an upswing in drug abuse. The central part of the county is dominated by the historic City of Annapolis, situated on the Chesapeake Bay at the mouth of the Severn River. Annapolis is one of only two incorporated towns in the entire county, the other being Highland

Beach. Finally, the area referred to as South County most resembles some of the rural communities found on Maryland's Eastern Shore.

Last year the county was number one in job growth among the five largest regional counties. The county has a growing defense industry marked by the presence of the National Security Administration (NSA), the Defense Information Systems Agency (DISA) and U.S. Cyber Command, all at Fort Meade. Eight of the nation's top ten defense contractors have a presence in the county. In aggregate, the county is home to 14,500 businesses which employ an estimated 205,000 workers. Over 300 of these have 100 or more workers. Key private sector employers include Booz Allen Hamilton, Johns Hopkins HealthCare, Northrup Grumman Electronic Systems, Rockwell Collins, Southwest Airlines, Anne Arundel County Medical Center, University of Maryland Baltimore Washington Medical Center and KEYW Corporation (Maryland Department of Business and Economic Development, 2014).

Population

In 2013, the estimated population of Anne Arundel County was 556,348. The population has grown 11.2% since 2000, with a 1.3% increase between 2010 and 2013 (Table 1). While the White Caucasian population of the county continues to diminish, the Hispanic population is growing more significantly than all races/ethnicities and is now at 6.4% or 34,854 residents. The county has the fourth largest Hispanic population by percentage among Maryland counties. Approximately 68% of the non-Hispanic population lives in eight ZIP codes: Glen Burnie (West), Severn, Odenton, Laurel, Brooklyn, Annapolis (ZIP code 21401), Glen Burnie (East) and Eastport. The largest sector of the Hispanic population is from Central American countries. This is significantly different from the overall U.S. Hispanic population, which is overwhelmingly Mexican (63%). In Anne Arundel County, the Hispanic population is made up of 30% Central Americans (mostly Salvadorans), 29% Mexicans, 16% Puerto Ricans, 9% South Americans and 3% Cubans (Pew Research Center, 2011).

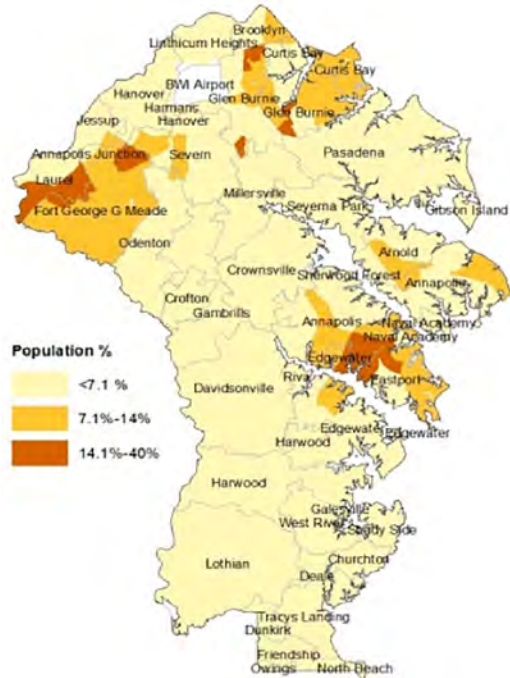
Table 1

Ethnic/Racial Composition							
	2000		2010		2013		Percent Change, 2000-2012
	Number	%	Number	%	Number	%	%
Total Population	**489,656**	**100.0**	**537,656**	**100.0**	**544,426**	**100.0**	**11.2**
Non-Hispanic Whites	390,519	79.8	405,456	75.4	408,715	75.1	4.6
Other Races	**99,137**	**20.2**	**132,200**	**24.6**	**135,711**	**24.9**	**37.0**
Hispanic or Latino	12,902	2.6	32,902	6.1	34,854	6.4	170.0
Black or African-American	65,755	13.4	83,484	15.5	84,230	15.5	28.0
Other*	20,480	4.2	15,814	3.0	16,627	3.1	18.0

Source: U.S. Census Bureau, American Community Survey, 2013. "Other" here includes "American Indian and Alaskan Native," "Asian," "Native Hawaiian or other Pacific Islander," "Some other race," or "Two or more races." Therefore, the "White" and "Black" figures are those who were counted as "White alone" or "Black alone."

Figure 1

Hispanic Population by Census Tract,
Anne Arundel County, 2013



Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates Hispanic Population by Census Tract, Anne Arundel County.

The **HISPANIC POPULATION** is growing more significantly than all races/ethnicities and is now at **6.4%**

The Hispanic Population has **INCREASED** by **170%** from 2000 to 2013

Population By Age

The population distribution among Anne Arundel County residents by age is similar to that of Maryland and the U.S. Among county residents, Hispanics are the youngest with a median age of 26.7 years, while Whites are the oldest with a median age of 42.2 years.

Table 2

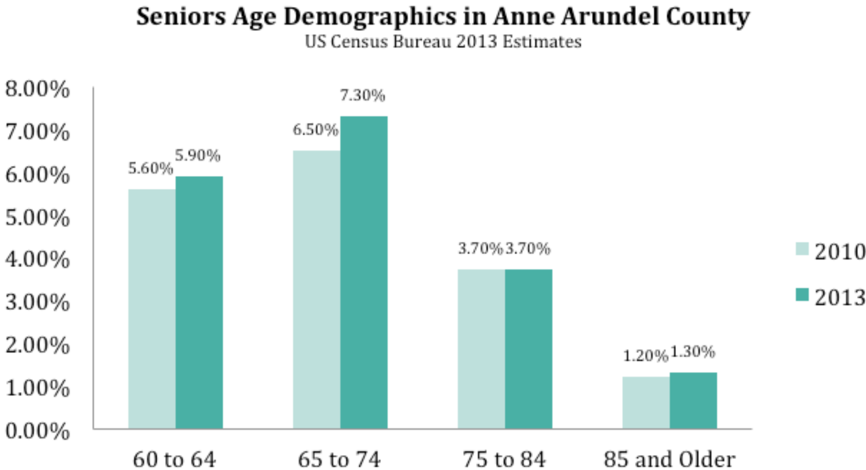
Population by Age, Anne Arundel County Compared to Maryland and U. S., 2013			
	Anne Arundel County	Maryland	United States
Under 5 Years Old	6.3%	6.2%	6.3%
18 Years and Over	77.2%	77.3%	76.7%
65 Years and Over	13.1%	13.4%	14.1%
Median Age (Years)	38.5	38.0	37.3

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

SENIORS

In Maryland, 13.4% of the population is 65 or older. Anne Arundel County has a slightly lower percentage at 13.1%. When those over 60 are included, the percentage increases to 18.2% representing 99,086 people. The 2013 estimates from the U.S. Census Bureau clearly indicates that the largest increase for our county is in the age group 65-74 (Figure 2).

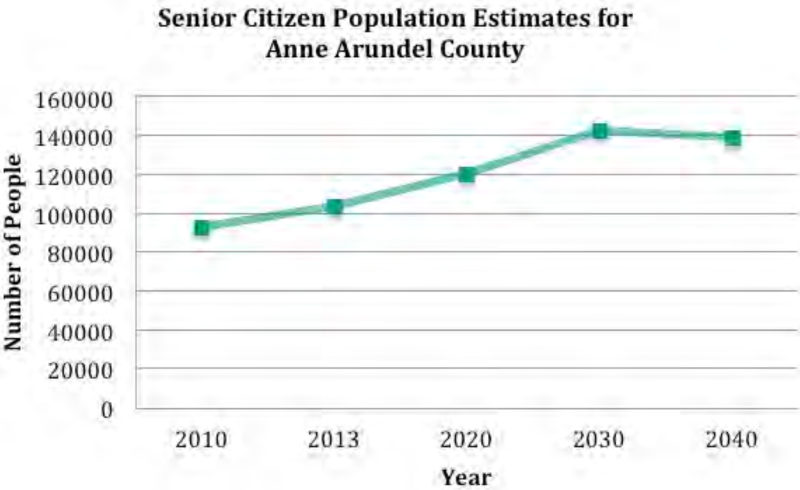
Figure 2



Source: Maryland Department of Aging, 2014

In line with the rest of the nation, the county trend for the senior population is one of rapid growth. According to the Maryland Department of Aging (2014), in Anne Arundel County that trend will continue until 2030 when the trend line begins to dip (Figure 3). By that time the population is estimated to increase from the 2013 figure of 99,086 to 140,000. In the next 15 years, seniors will have an exponentially increasing impact on county services, supports, resource allocation and health care use.

Figure 3



Source: Maryland Department of Aging, 2014

Income

Anne Arundel County is a tale of extremes. There is much wealth and natural beauty for residents but there are deep pockets of poverty to the North and South particularly. The income gap between rich and poor in the county has widened since 2010.There is an increase at both ends of the economic scale; households living below the poverty line and households with a combined income of $200,000 or more (Table 3). There has also been a significant increase in households with a combined income over $100,000. County median family income stands at $101,268 compared to $97,914 in 2010. It is higher than the state ($88,738) and the nation ($64,719).

Table 3

Estimated Annual Household Income Numbers 2010 and 2013					
Total Number of Households	2010: 195, 999		2013: 199,904		
Per household	Number	%	Number	%	Percent Change
Less than $25,000	20,819	10.62	21,890	10.95	5.14%
$25,000-34,999	12,201	6.23	11,584	5.79	-5.06%
$35,000-49,999	19,077	9.73	18,623	9.32	-2.38%
$50,000-74,999	34,853	17.78	32,962	16.49	-4.69%
$75,000-99,999	29,982	15.30	29,086	14.55	-2.99%
$100,000-199,999	61,569	31.41	64,274	32.15	4.39%
$200,000 and above	17,498	8.93	21,485	10.75	22.79%
TOTAL	195,999	100	199,904	100	

Source: U.S. Census Bureau American Community Survey, 2013 Estimates

Poverty

Poverty is defined in different ways. The federal government classifies a family of four (two adults, two children) with an annual income below $24,250 as living in poverty (2015 adjustment), although the amount is not adjusted for geographic differences in the standard of living across the nation. There are 33,352 Anne Arundel County residents (6.3%) living below the poverty level (Table 4), a slight dip from the 2011 level of 34,410 residents (6.4%). Of the 199,904 households below the poverty level in the county, families occupy 138,458. There are 31,377 households led by single parents, of which 22,565 have a female as the head of household. Economic well-being for households headed by a single parent can be fragile. Estimates suggest 14.7% of the single parent households in the county make an income that is below the federal poverty level.

Table 4

Poverty Status, Anne Arundel County, 2013		
	Number Below Poverty Level	Percent Below Poverty Level
Population Below Poverty Level	33,352	6.3%
Age		
Under 18 Years	9,966	8.0%
18 to 64 Years	19,765	5.8%
65 Years and Over	3,621	5.5%
Sex		
Male	14,860	5.8%
Female	18,492	6.8%
Race and Ethnicity		
White, not Hispanic or Latino	16,701	4.4%
Black or African American	9,997	12.7%
Asian	2,092	11.0%
Hispanic (of any race)	3,172	9.4%

Source: U.S. Census, American Community Survey, 2013 Estimates

Poverty is concentrated in the North and South of the county (Table 5). The highest percentage of poverty is in the ZIP code that contains Brooklyn (which contains a small portion of Baltimore City residents) at a staggering 26.5%. ZIP code 21077 (Harmans) has the second highest poverty level in the county at 16.5%, yet it is surrounded by an area of huge economic growth including the Maryland Live! Casino and BWI Airport. The Brooklyn poverty rate is 4.2 times higher than that of the average county's poverty rate. Curtis Bay and Harmans have a poverty rate 2.6 times higher than that of the average county's poverty rate.

Table 5

Selected Poverty Percentages by ZIP Code Anne Arundel County, 2013		
ZIP Code	Area	Poverty Percentage
21225	Brooklyn	26.5%
21077	Harmans	16.8%
21226	Curtis Bay	16.5%
21060	Glen Burnie (East)	11.2%
21061	Glen Burnie (West)	10.8%
20714	North Beach	9.9%
20751	Deale	9.2%
	Anne Arundel County	**6.3%**

Source: U.S. Census, American Community Survey, 2013 Estimates

Poverty can also be measured by the number of persons receiving what used to be called Food Stamps and is now called the Supplemental Nutrition Assistance Program (SNAP). Anne Arundel County has a lower percent of households receiving SNAP benefits (5.6%) compared to Maryland (9.5%) and the U.S. (12.4%) but the numbers have risen sharply since 2009 to a high of 22,792 adults. Brooklyn, Curtis Bay, Lothian, Glen Burnie (East and West), North Beach, Shady Side, Jessup, Severn, Linthicum Heights and Eastport have higher than average households which are on Food Stamp/SNAP benefits. Overall, 5.6% households in the county received Food Stamp/SNAP benefits in 2013. Brooklyn (30.9%) has highest percentage of households on Food Stamp/SNAP benefits followed by Curtis Bay (22%) (Figure 4).

Figure 4

Percentage of Food Stamps/SNAP Recipency Hosehold by ZIP Code, 2013

Source: U.S. Census Bureau, 2013 estimates

Figure 5

Major Hospitals in Anne Arundel County, 2015

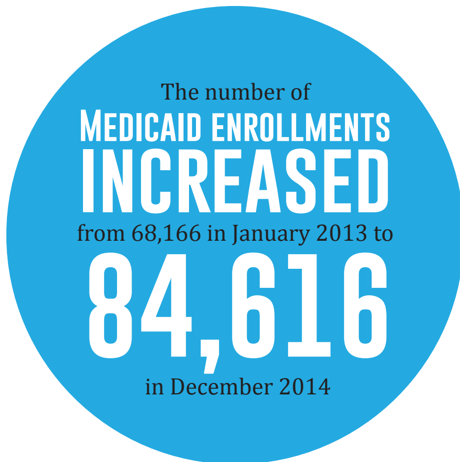
Source: Anne Arundel County Department of Health, 2015

Health Care Services

Anne Arundel County is served by two major hospitals: Anne Arundel Medical Center (AAMC) in Annapolis and the University of Maryland Baltimore Washington Medical Center (UMBWMC) in Glen Burnie (Figure 5). Both AAMC and UMBWMC are affiliated with academic medical centers, which offer advantages to patients requiring highly-specialized tertiary care. MedStar Harbor Hospital, which is located just north of the county line in Baltimore City, also serves county residents. Additionally, there are four Federally Qualified Health Centers (FQHCs) that serve county residents: Chase Brexton Health Centers, Family Health Centers of Baltimore, Owensville Primary Care and Total Health Care. The Anne Arundel County Department of Health also offers a range of physical and behavioral health services at five clinic sites. The Anne Arundel County Mental Health Agency, Inc. provides a wide range of quality mental health services to Medicaid recipients and other
low-income and uninsured county residents who meet certain criteria. Other health care services available in the county include primary care practices, outpatient specialty care, community clinics, urgent care facilities and retail store-based health clinics.

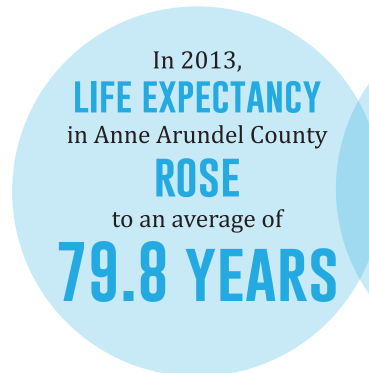
Many providers of health care offer financial assistance. All hospitals in Maryland have financial assistance policies that provide medically necessary services to all people regardless of their ability to pay. Depending on their circumstances, patients can receive coverage for up to 100% of their medically necessary care. Payment plans are also available. FQHCs, community clinics and governmental providers offer services on a sliding scale or free basis. Assistance with enrolling in publicly funded entitlement programs and health insurance plans through the state health benefit exchange are available from the hospitals, county health departments, social service agencies and the Maryland Health Care Connection. However, it is important to note that not all health care providers, particularly behavioral health providers, accept all insurance plans or self-pay patients.

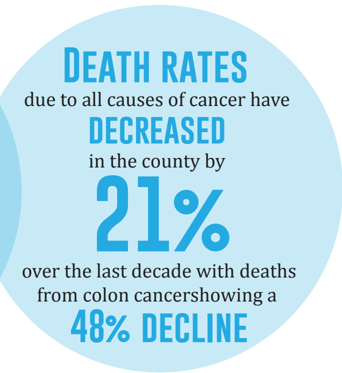
Anne Arundel County HEALTH CHAPTER 1 Needs Assessment, 2015



Hospitalizations by Age Group Anne Arundel County, 2013		
Age Group	**Number of Hospitalizations**	**Rate per 1,000**
0 to 18 yrs.	9,371	74.1
19 to 39 yrs.	12,584	76.6
40 to 64 yrs.	18,143	94.3
Greater than 64 yrs.	19,435	267.9

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission





Primary Care Physicians, Dentists and Mental Health Providers Anne Arundel County, Maryland				
	Anne Arundel County Total	Anne Arundel County Ratio	Maryland Ratio	Top U.S. Counties (90th percentile)
Primary Care Physicians (2012)	385	1,430:1	1,131:1	1,045:1
Dentists (2013)	366	1,518:1	1,392:1	1,377:1
Mental Health Providers (2014)	774	718:1	502:1	386:1

Source: Anne Arundel County Health Rankings and Roadmaps, 2015

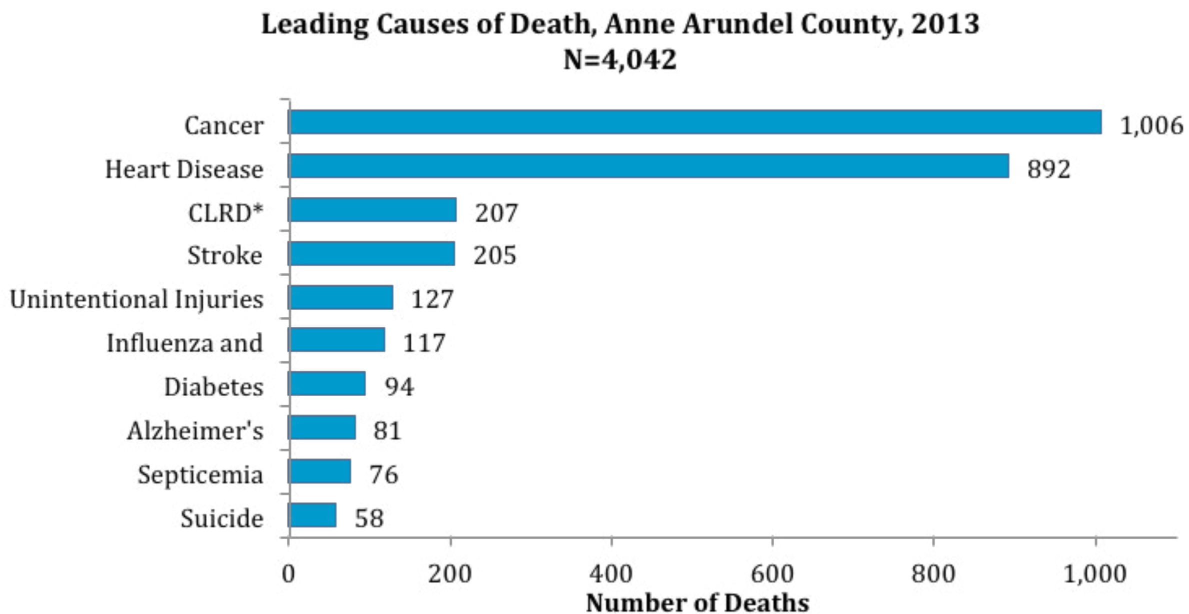
PATIENT TO DENTIST AND TO MENTAL HEALTH PROVIDER RATIOS

in Anne Arundel are worse than in Maryland and the U.S. top performing counties. Compared to Maryland, Anne Arundel County has 21.6% less primary care physicians and 8.5% less dentists per 100 population.

HEALTH
CHAPTER 1

In 2013, life expectancy in Anne Arundel County rose to an average of 79.8 years. Cancer was the leading cause of death, followed by heart disease, which accounted for nearly 47% of all deaths. From 2007 to 2013, age-adjusted death rates for cancer for all races and ethnicities decreased steadily. There was a 6% decline in age-adjusted death rates for all cancer deaths among Blacks, an 11% decline among Whites and a 22% decline among Hispanics of any race. In 2013, 22% of all deaths in Anne Arundel County were from heart disease. Overweight and obesity are still significant health issues in the county, leading to secondary issues such as diabetes. (Centers for Disease Control and Prevention, 2015)

Figure 6



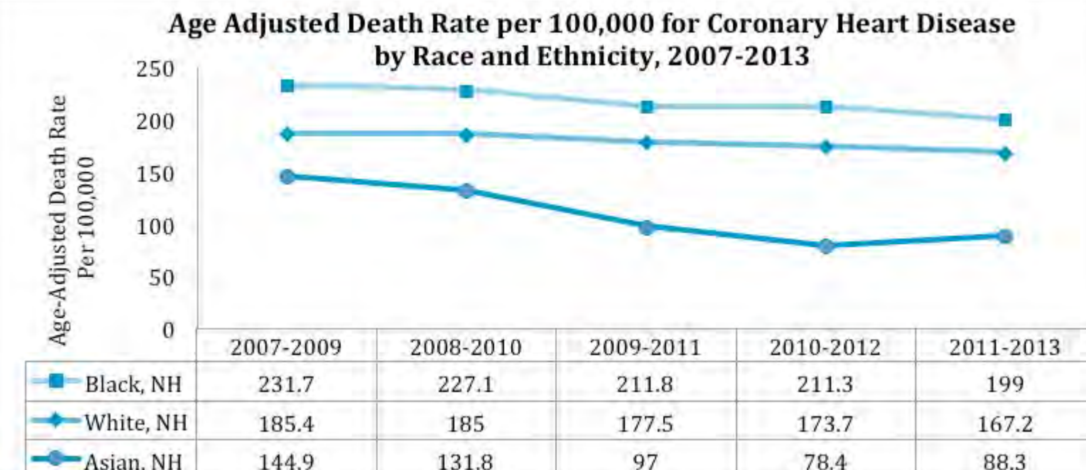
Source: Maryland Vital Statistics Annual Report 2013, Maryland Department of Health and Mental Hygiene
*Chronic lower respiratory diseases (CLRD) include both chronic obstructive pulmonary disease (COPD) and asthma.

Between 2009 and 2013, cancer and heart disease were the first and second leading causes of death among all racial/ethnic groups. They accounted for 49% of deaths among Whites, 47% of deaths among Blacks, 41% of deaths among Hispanics and 51% of deaths among Asians. Diabetes ranked as the fourth leading cause of death among Blacks and fifth leading cause of death among Hispanics.

Coronary Heart Disease

In 2013, 22% of all deaths in Anne Arundel County were from heart disease. However, since 2009, age-adjusted death rates for coronary heart disease for all races/ethnic groups have decreased steadily. Blacks still have the highest rate death from heart disease. Asians have seen the largest decrease in age-adjusted death rates at 39%.

Figure 7



	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	231.7	227.1	211.8	211.3	199
White, NH	185.4	185	177.5	173.7	167.2
Asian, NH	144.9	131.8	97	78.4	88.3

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Cancer

Anne Arundel County has a higher cancer incidence rate overall, compared to Maryland and the United States. Higher incidence rates for female breast cancer, lung and bronchus cancer, melanoma and prostate cancer are seen in the county while the incidence of colorectal cancer and cervical cancer is lower than the state and the nation. The mortality rate for melanoma has historically been an issue in the county with males having a three times higher mortality rate for the disease than females (Table 6). The good news is that death rates due to all causes of cancer have decreased in the county by 21% over the last decade with deaths from colon cancer showing a 48% decline (Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014).

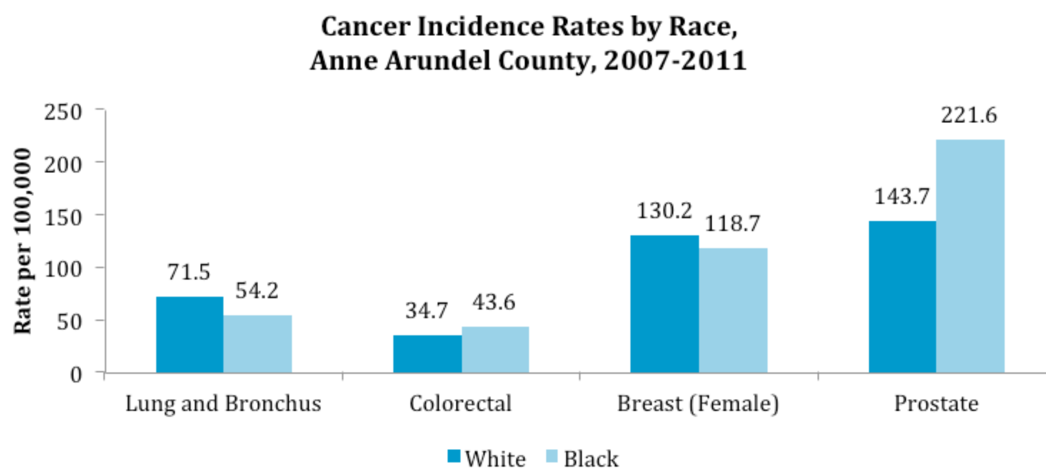
Table 6

Cancer Incidence Rates per 100,000 by Site and Gender, Anne Arundel Compared to Maryland and U.S., 2007-2011			
Site	Anne Arundel County	Maryland	United States
Breast (Female)	129.3	127.8	122.8
Colorectal	35.7	39.3	43.3
Male	39.8	45.1	50.0
Female	32.1	34.8	37.8
Lung and Bronchus	68.7	59.9	64.9
Male	76.5	69.9	78.6
Female	63.0	52.8	54.6
Melanoma	32.4	21.0	19.7
Male	43.2	27.5	25.1
Female	24.0	16.5	15.9
Prostate	151.7	148.7	142.5
Cervical	6.6	6.7	7.8
All Sites	479.2	451.8	467.7

Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014; Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Disparities exist when examining cancer incidence and mortality by race and ethnicity*(Figure 8). The rates of lung and bronchus cancer and melanoma were higher in Whites compared to Blacks while Black males were disproportionately diagnosed with and died from prostate cancer compared to White males. Although White females had a higher incidence of breast cancer, Black females had a higher mortality rate.

Figure 8



Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014
*Individuals of Hispanic origin were included within the White or Black estimates and are not listed separately.

Infant Mortality Rate

The infant mortality rate in Anne Arundel County between 2010 and 2014 was 5.5 deaths per 1,000 live births; lower than both the United States (6.0 deaths per 1,000 live births) and Maryland (6.6 deaths per 1,000 live births) during the same period. Although the overall infant mortality rate is lower for the county than the state average, disparities exist when stratifying the data by race and ethnicity. Blacks have the highest infant mortality rate in the county (11.2 deaths per 1,000 live births) compared to 5.3 deaths and 4.0 deaths per 1,000 births for Hispanics and Whites respectively (Table 7).

Table 7

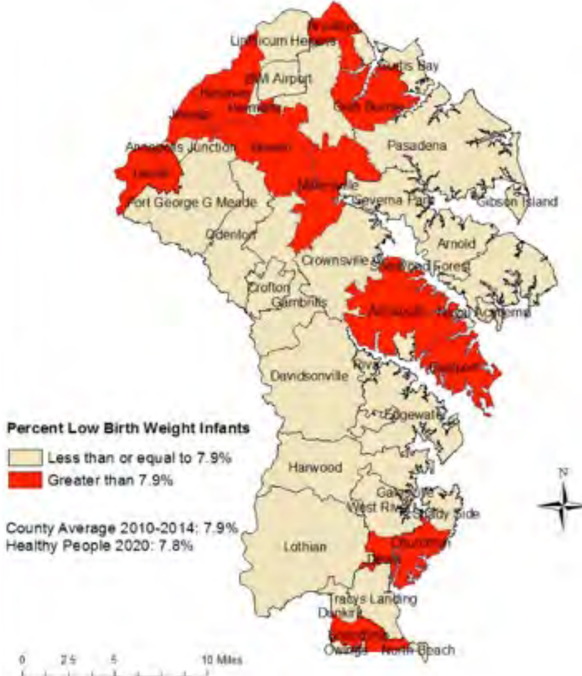
Infant Deaths and Infant Mortality Rates by Race and Ethnicity Anne Arundel County 2010-2014		
Race/Ethnicity	Number of Infant Deaths	Infant Mortality
White, NH	89	4.0
Black, NH	68	11.2
Hispanic, Any Race	22	5.3

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2013

Low Birth Weight

Low birth weight (less than 2,500 grams) is the single most important factor affecting neonatal mortality (newborn infants up to 28 days old) and a significant determinant of post neonatal mortality (newborn infant between 28 and 364 days old). Low birth weight infants run the risk of developing health issues ranging from respiratory disorders to neurodevelopmental disabilities, especially those developmental issues related to school achievement. In Anne Arundel County, the percentage of low birth weight babies is dropping slowly and is less than the state average at 8.7%. However, there are several ZIP codes concentrated in the northern part of the county where the percentage of low birth weight infants is much higher than the overall county average of 7.9%, especially in Brooklyn, Severn, Laurel, Glen Burnie (West), Hanover, Millersville, and Jessup (Figure 9).

Figure 9
Percentage of Low Birth Weight Infants
by ZIP Code, Anne Arundel County, 2010-2014



Health Care Access

The Affordable Care Act (ACA) has increased access and expectations for health care. In Maryland, under the ACA, persons whose income is up to 138% of the poverty level are eligible for Medicaid. The number of Medicaid enrollments increased from 68,166 in January 2013 to 84,616 in December 2014 (Table 8). There are still many primary care doctors who do not accept Medicare/Medicaid.

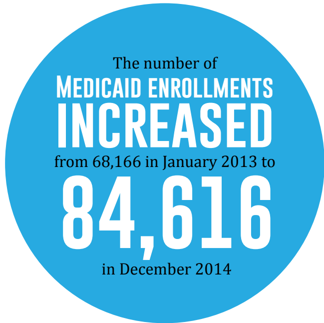
Persons whose income is above 138% but below 400% of the poverty level have the option to purchase health insurance through the Maryland Health Connection (the state's insurance marketplace/exchange). In many commercial plans, high deductibles and co-pays have burdened some individuals. To date, information is not available for how many uninsured residents gained coverage through the ACA. A small percentage of county residents such as undocumented people, those not enrolled in Medicaid despite being eligible, and people opting to pay the annual penalty instead of purchasing insurance will still remain uninsured. Overall, 6.6 % of the county population still has no health insurance. The Hispanic population has the highest rate of uninsured in the county (22%) (Office of Minority Health and Health Disparities, Maryland Department of Health and Mental Hygiene, 2013).

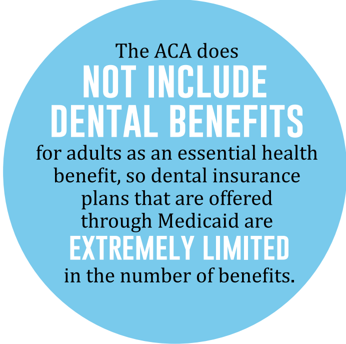
Of note, the ACA does not include dental benefits for adults as an essential health benefit, so dental insurance plans that are offered through Medicaid are extremely limited in the number of benefits. Those offered through the Maryland Health Connection may have high premiums with high co-pays or co-insurance costs.

Table 8

Medicaid Enrollment by Age, Sex, and Race and Ethnicity Anne Arundel County, December 2014	
	Medicaid Enrollment
Total Enrollment	**84,616**
Age	
Under 18 Years	37,843
18 to 64 Years	43,040
65 Years and Over	3,733
Sex	
Male	37,186
Female	47,430
Race and Ethnicity	
White, NH	39,793 (47%)
Black, NH	25,193 (30%)
Hispanic, Any Race	6,349 (8%)
Asian	3,829 (5%)

Source: Maryland Department of Health and Mental Hygiene, 2015





Access to Primary Care, Dentists and Mental Health Providers

Access to primary care is a growing issue in the county. Having a primary care provider reduces nonfinancial barriers to obtaining care, facilitates access to services, and increases the frequency of contacts with health care providers. Without a primary care provider, people have more difficulty obtaining prescriptions and attending necessary appointments. According to county health rankings, the patient to primary care physician ratio in Anne Arundel (1,430:1) is worse than in Maryland (1,131:1) and the U.S. top performing counties which are among the 90th percentile in ranking (1,045:1). Similarly, the patient to dentist and to mental health provider ratios in Anne Arundel are worse than in Maryland and the U.S. top performing counties. Compared to Maryland, Anne Arundel County has 21.6% less primary care physicians and 8.5% less dentists per 100 population (Table 9). According to participants in this needs assessment, the result is that the wait times for routine care are growing longer. Some primary care practices have instituted a team approach to increase the number of patients that can be seen including nurse practitioners and nurses to perform some of the health tasks. Reporting and other time consuming tasks have grown with the increase in technology and, as one primary care doctor noted:

> “We are barely keeping our noses above water and now we have five more things that we have to do and if we don’t do them, eventually we will have another problem.”

According to the 2014 University of Maryland Medical System, Physician Needs Assessment, primary care, psychiatry and general surgery are projected to have the most physician deficits by 2019.

Table 9

Primary Care Physicians, Dentists and Mental Health Providers Anne Arundel County, Maryland				
	Anne Arundel County Total	Anne Arundel County Ratio	Maryland Ratio	Top U.S. Counties (90th percentile)
Primary Care Physicians (2012)	385	1,430:1	1,131:1	1,045:1
Dentists (2013)	366	1,518:1	1,392:1	1,377:1
Mental Health Providers (2014)	774	718:1	502:1	386:1

Source: Anne Arundel County Health Rankings and Roadmaps, 2015

<u>Health Professional Shortage Areas</u>

Health Professional Shortage Areas (HPSAs) are designated by the Health Resources and Services Administration (HRSA) as having shortages of primary medical care, dental or mental health providers and may be geographic. Currently, the county has one designated Primary Care HPSA (Owensville Primary Care), one Dental HPSA (Owensville Primary Care) and two Mental Health HPSAs (Owensville Primary Care and Maryland Correctional Institution, Jessup).

<u>Medically Underserved Areas</u>

Medically Underserved Areas (MUA) are designated based on four variables: ratio of primary medical care physicians per 1,000 population; infant mortality rate, percentage of the population with incomes below the poverty level; and percentage of the population age 65 or over. There are 11 census tracts in Anne Arundel County which are designated as medically underserved areas or populations. Approximately 54,700 (10%) of the county's population lives in these 11 census tracts. As illustrated in Figure 10, South County's access to health care is very limited. As one South County resident commented:

Figure 10

Health Professional Shortage Areas (HPSA) and Medically Underserved Areas and Populations (MUA/P)
Anne Arundel County, 2015

> "They're building places on the Eastern Shore but not in South County. You have to get someone to take you to AAMC. There are no taxis here. In other places they have those health clinics in Giant….that would be very helpful in South County."

SENIOR HEALTH

"Seniors" is a very broad term for a group that now spans almost four decades. Participants in the needs assessment saw the aging population in three quite distinct groups: 55-70 years of age, 70-85 years of age and 85 and older. Each group has very distinct needs emotionally, physically and psychologically, yet they get lumped together when services and funding are at stake. Most of the population age 65 and older has health insurance through Medicare. As of 2103, there were 75,607 Medicare beneficiaries with Part A and Part B in Anne Arundel County. By race and ethnicity, 82.19% of Medicare beneficiaries in Anne Arundel County were White, 13.1% were Black and 1.3% were Hispanic of any race. Almost 11% of Medicare beneficiaries were also eligible for Medicaid.

Table 10

Medicare Beneficiaries in Anne Arundel County, 2013	
Beneficiary Demographic Characteristics	**Number or Percentage**
Beneficiaries with Part A and Part B	75,607
Fee-for-service Beneficiaries	69,420
Medicare Advantage (MA) Beneficiaries	6,187
Average Age	72 years
Percent Female	56.2%
Percent Male	43.8%
Percent White (Non-Hispanic)	82.2%
Percent Black	31.1%
Percent Hispanic, Any Race	1.3%
Percent Eligible for Medicaid	10.9%

Source: Centers for Medicare & Medicaid Services

Health concerns noted by those who serve seniors in our county included falls, urinary tract infections (UTIs), anxiety, dehydration, medication compliance, type 2 diabetes, obesity and lack of mobility caused by joint issues. Some of the medications prescribed to the aging population actually cause dizziness and ultimately falling. Medication compliance is another huge issue. Some seniors simply forget to take their pills; the writing is too small on the bottle; or the side effects are too unpleasant. Seniors often have more than one doctor for their different ailments. As a case manager pointed out:

> “ I had a client with about 30 medications. She’s diabetic, has COPD and congestive heart failure. ”

There is rarely consultation between doctors which can result in seniors taking medicines that are contraindicated.

Hospital Admissions

In 2013, there were an estimated 59,533 hospital stays in Anne Arundel County, representing a hospitalization rate of 107.1 stays per 1,000. The hospitalization rate for Blacks was the highest among the racial/ethnic groups (Maryland Health Services Cost Review Commission, 2013). The rate of hospitalization was highest in the population aged 65 years and over (Table 11).
The hospitalization rate increased with age from 74.1 hospitalizations per 1,000 population among 0-18 year olds to 267.9.3 hospitalization per 1,000 population among those aged 65 years and over. (Note: This data only includes Anne Arundel County residents admitted to hospitals in Maryland.)

Table 11

Hospitalizations by Age Group Anne Arundel County, 2013		
Age Group	**Number of Hospitalizations**	**Rate per 1,000**
0 to 18 yrs.	9,371	74.1
19 to 39 yrs.	12,584	76.6
40 to 64 yrs.	18,143	94.3
Greater than 64 yrs.	19,435	267.9

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Some of the leading causes of hospitalization were shared by some racial/ethnic groups but not by others. Congestive heart failure was the second leading cause of hospitalization for Blacks but only the sixth leading cause of hospitalization for Whites. Mood disorder was the fourth leading cause of hospitalization for Whites and Blacks but was not among the 10 leading causes of hospitalization for the Asian and Hispanic population (Maryland Health Services Cost Review Commission, 2013). Nonetheless, Hispanic participants in this needs assessment pointed to the trauma and increased stress that comes with immigration, especially when there are language barriers, as a contributing factor for mental health issues among that population.

NEEDS

- Health resource planning for geographic differences related to low income, poverty and health access, especially in North and South County

- Senior in-home care for non-emergency issues

- More primary care physicians and general surgeons, particularly in South County.

- Improved access to adult dental care

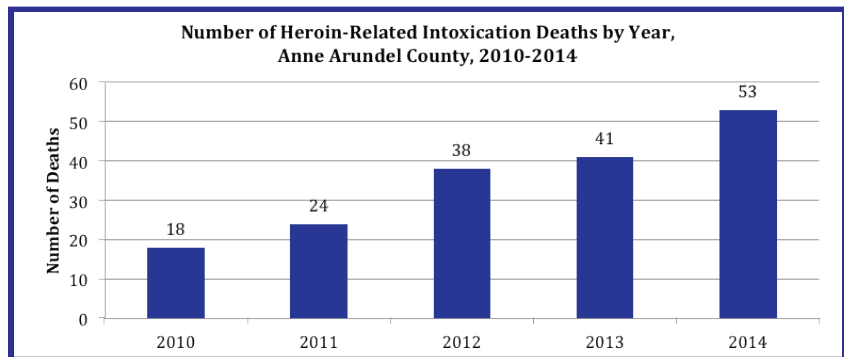
- Improved care coordination to help people manage chronic conditions such as congestive heart failure and diabetes

Anne Arundel County

BEHAVIORAL HEALTH CHAPTER 2

Needs Assessment, 2015

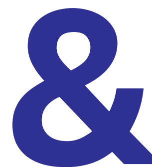
In 2014, Anne Arundel had the **3RD HIGHEST** number of **PRESCRIPTION OPIOID-RELATED DEATHS** in Maryland (after Baltimore City and Baltimore County).



Out of 101 intoxication deaths that occurred in Anne Arundel County in 2014, **53 WERE HEROIN-RELATED.** There was almost a three-fold increase in the number of heroin-related deaths (from 18 to 53) between 2010 and 2014.The number of heroin-related deaths increased by 29.2% between 2013 and 2014 (Behavioral Health Administration, DHMH 2014).

Anne Arundel County Mental Health Agency served **11,321 RESIDENTS** in 2014, which was an increase of **11%** from 2013. This figure compares to a 6% increase from 2013 to 2014.

There has been a **14.5% INCREASE** in the use of public mental health services for **CHILDREN AGES 6 TO 12**



9.6% INCREASE FOR CHILDREN AGES 13 TO 17

The number of residents served in 2014 **INCREASED BY ALMOST 145%** since 2002.

Behavioral Health
Chapter 2

Mental Health

The rise in mental health issues and the lack of appropriate services and service providers were the major concerns for almost every participant in this needs assessment. Those perceptions were substantiated by the rise in the numbers of county residents seeking public mental health services (Table 12). Anne Arundel County Mental Health Agency served 11,321 residents in 2014, which was an increase of 11% from FY13. This figure compares to a 6% increase from 2013 to 2014. The number of residents served in 2014 increased by almost 145% since 2002. There were several suggestions among participants as to why this increase is taking place, although most agreed that current stress levels for children and families are generally higher. According to one physician:

> “Stress plays out on the health side of things in terms of mental illness and in terms of anxiety and depression. I think it is increased because with the anxiety piece you don't have any down time, the more technologically advanced somebody's life is the less free time they have. You can work 24/7 and you never get a break so I think that is a contributor to anxiety.”

Table 12

Number of People Served by a Public Mental Health Service in Anne Arundel County, 2012-2014					
	2012	**2013**	**Percent of Change ('12-'13)**	**2014**	**Percent of Change ('13-'14)**
Early Child (0-5)	392	394	0.5%	473	20.%
Child (6-12)	1,821	1,880	3.2%	2,152	14.5%
Adolescent (13-17)	1,388	1,476	6.3%	1,617	9.6%
Transitional (18-21)	586	584	-0.3%	610	4.5%
Adult (22 to 64)	5,351	5,762	7.7%	6,396	11.0%
Elderly (65 and over)	59	70	18.6%	73	4.3%
TOTAL	9,597	10,166	5.9%	11,321	11.4%

Source: Anne Arundel County Mental Health Agency, 2015

Access

The ACA has increased access to mental health services, although the county still lacks sufficient mental health providers. County mental health officials report a decrease of 20% in the number of uninsured mental health service consumers and a decrease of 25% in expenditures for the uninsured between 2012 and 2014 (Table 13).

Table 13

Three Year Comparison Medicaid/Uninsured					
	Persons Served				
	FY 2012	**FY 2013**	**% Change**	**FY 2014**	**% Change**
Medicaid	8,883	9,463	6.1%	10,687	12.9%
Medicaid State Funded	1,238	1,446	14.4%	1,639	13.3%
Uninsured	768	780	1.5%	624	-20%
Total	**9,597**	**10,166**		**11,321**	**11.4%**

Source: Anne Arundel County Mental Health Agency, 2015

Residential mental health beds are almost nonexistent in the county, although there are 259 residential rehabilitation beds (for the chronic and persistent mentally ill). There are only 24 crisis beds and only one in-patient psychiatric unit with 14 beds, and it is often full. There is one Spanish-speaking psychiatrist available to the Hispanic uninsured population. There are very few Spanish speaking mental health counselors.

While access to services has increased, the county lacks psychiatrists and specialty therapists who have skill in trauma, veterans' issues and geriatric psychiatry, especially for those residents with dementia. As one participant commented:

> “Almost every Monday morning there will be 17 to 18 psychiatric patients in the emergency room waiting for placement.”

There is a growing number of outpatient mental health providers in the county, but these numbers are not expected to keep up with the growing county need. The ratio of mental health providers to residents in the county is much lower than the state (Table 14). AAMC has recently opened an outpatient mental health clinic. UMBWMC is planning for an expansion of its outpatient services. Arundel Lodge has recently opened the Marcus Youth and Family Center. However, according to participants, the demand for mental health services at health access points is resulting in shortening care without proper follow-up or step down from residential care.

Table 14

Primary Care Physicians, Dentists and Mental Health Providers Anne Arundel County, Maryland				
	Anne Arundel County Total	**Anne Arundel County Ratio**	**Maryland Ratio**	**Top U.S. Counties (90th percentile)**
Mental Health Providers (2014)	774	718:1	502:1	386:1

Source: Anne Arundel County Mental Health Agency, 2015

Mental Health, 0-18 Years

There has been a 14.5% increase in the use of public mental health services for children ages 6 to 12 and a 9.6% increase for children between 13 and 17 years of age (Table 12). The most recent Maryland Youth Risk Behavior Survey (2013) found that, in the 12 months prior to the survey, 21.9% of Anne Arundel County students had been bullied on school property; 27.9% of students reported feeling so sad or hopeless almost every day for two weeks in a row that they stopped doing normal activities; 16.9% of students seriously considered attempting suicide; and 13% of students made a plan about how they would attempt suicide. Many youth are under increased stress as a result of social media, including the increasing rate of cyberbullying, described by participants in this needs assessment.

Very young children with serious mental health issues are presenting at pediatric emergency, in the Emergency Department and in primary care offices. There are no residential mental health beds for youth in the county. As one participant noted:

The ages of youth with mental health issues are decreasing. We are seeing younger and younger patients (5-7 year olds). When serious issues are identified the nearest facility is in Western Maryland. Often they are in treatment there for only two weeks without the support of their families, and they turn up again in the ER very quickly.

The need for public mental health services is growing most rapidly in the 0-5 population, yet there are only two evidence-based behavioral programs for that population in the county: BEST (Behavioral and Emotional Support and Training) offered by Anne Arundel Community College TEACH Institute and Parenting Center and CHAMPS (Children Arriving Mentally Prepared for School) offered by Arundel Child Care Connections. Some of the behavioral issues found in the early childhood population could be addressed through parenting classes, which are available at the community college, but parents must have their own transportation to get there and they must be able to find the time. One participant noted:

> “We need to educate parents but when you have two jobs and four other children, then getting to parenting class is low on the list. Transportation affects everything we do. We run a lot of parenting groups, at least one per month but if parents can’t get to them…”

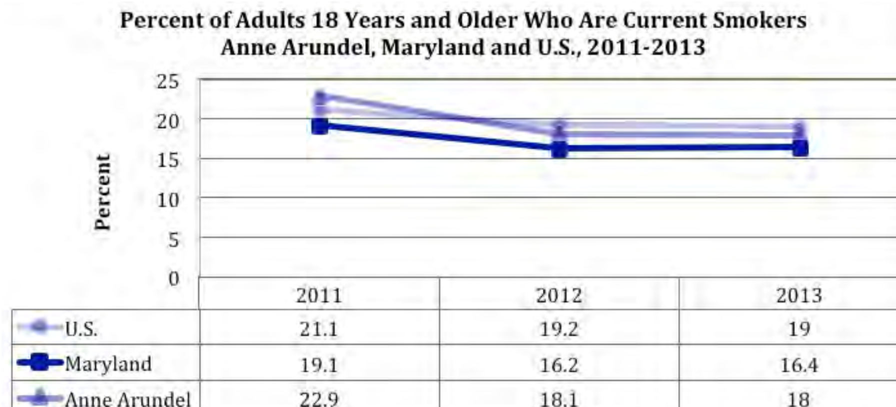
School-based clinical mental health services are available for students although there are often waiting lists. Young people in need of psychiatric care often wait in the emergency room between 12 and 24 hours. At a recent emergency nurse's roundtable one nurse expressed that her biggest fear was that one of these youths would find the means to complete suicide while waiting in the ER. According to one supervisor, "The stress on ER staff related to these issues is enormous."

Substance Abuse

Tobacco

Smoking is associated with an increased risk of heart disease, stroke, lung and other types of cancers, and chronic lung diseases (CDC). The rate of tobacco use in the county is higher than the state at 18% but lower than the nation (Figure 11).

Figure 11



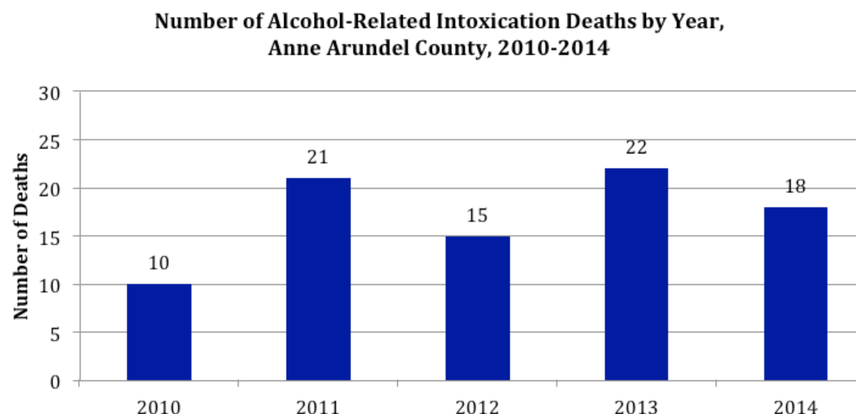
	2011	2012	2013
U.S.	21.1	19.2	19
Maryland	19.1	16.2	16.4
Anne Arundel	22.9	18.1	18

Source: Behavioral Risk Factor Surveillance Systems, Centers for Disease Control and Prevention, 2011-2013

Alcohol

Alcohol use in the county is an acceptable social norm, evidenced by the number of boating parties on weekends and the hundreds of happy hour specials in bars and restaurants. The number of alcohol-related deaths increased by 80% between 2010 and 2014 (from 10 to 18) but declined by 18% between 2013 and 2014 (Figure 12).

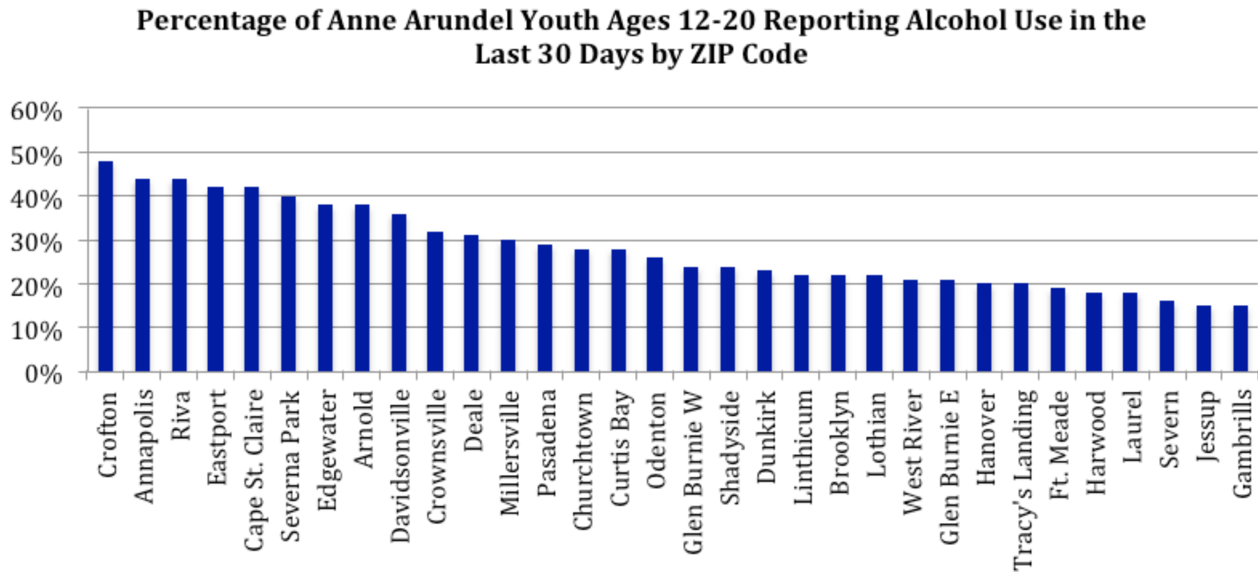
Figure 12



Source: Behavioral Health Administration, Maryland DHMH. Data is for deaths that occurred in Anne Arundel County irrespective of person's county of residence.

Alcohol is used more than tobacco and other illicit drugs among youth. According to the Maryland Youth Behavioral Risk Survey (2013), over one quarter of Anne Arundel County youth reported alcohol use. Data by ZIP code indicates underage drinking occurs in all of the county's ZIP codes with Crofton reporting the highest use and Gambrills reporting the lowest use. The majority of youth who use alcohol report that they get their alcohol from someone who gave it to them or that they gave someone money to buy it for them. Several surveys have shown that there is still a community "norm" around alcohol use in the county and that some underage youth are given alcohol by their parents.

Figure 13

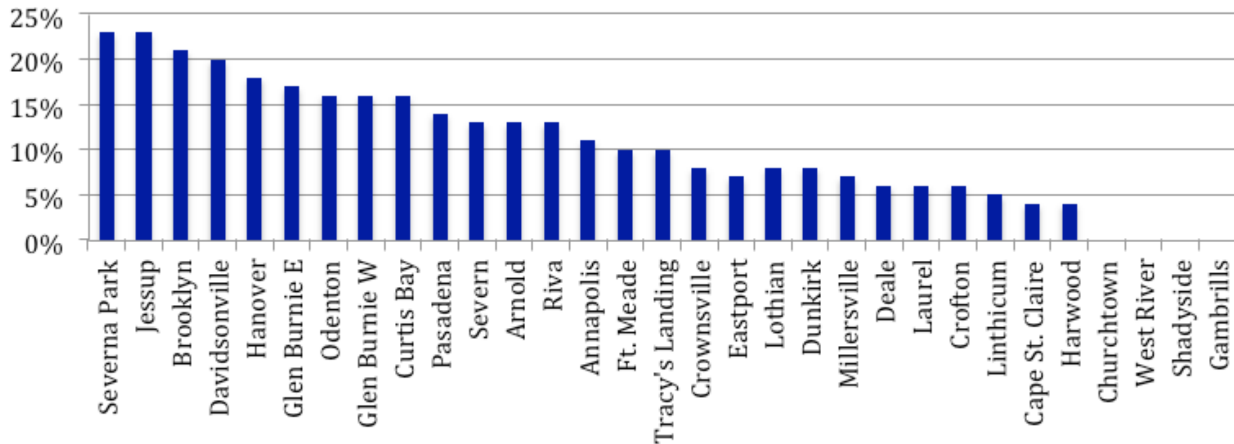


Source: Coalition for Safe Communities Behavioral Risk Survey, 2013

MARIJUANA

The impact of legalization of medical marijuana and small amounts of marijuana has contributed to youth perception that marijuana use is acceptable and even healthy. According to a risk survey completed by the Coalition for Safe Communities in 2013, marijuana is the second most popular drug for Anne Arundel County youth. An average of 14% of surveyed youth reported a past 30-day use of marijuana; 2% higher than those reporting tobacco use. The percentage varies by ZIP code (Figure 14). The county average for marijuana use is slightly higher than tobacco use, although tobacco has a slightly greater range of usage by ZIP code.

Figure 14



Source: Coalition for Safe Communities Risk Survey, 2013

Prescription Opioids and Other Prescription Drugs

While tobacco, marijuana and alcohol are the top three substances of choice among youth, participants emphasized that pills of every kind are readily available and often abused. According to one participant:

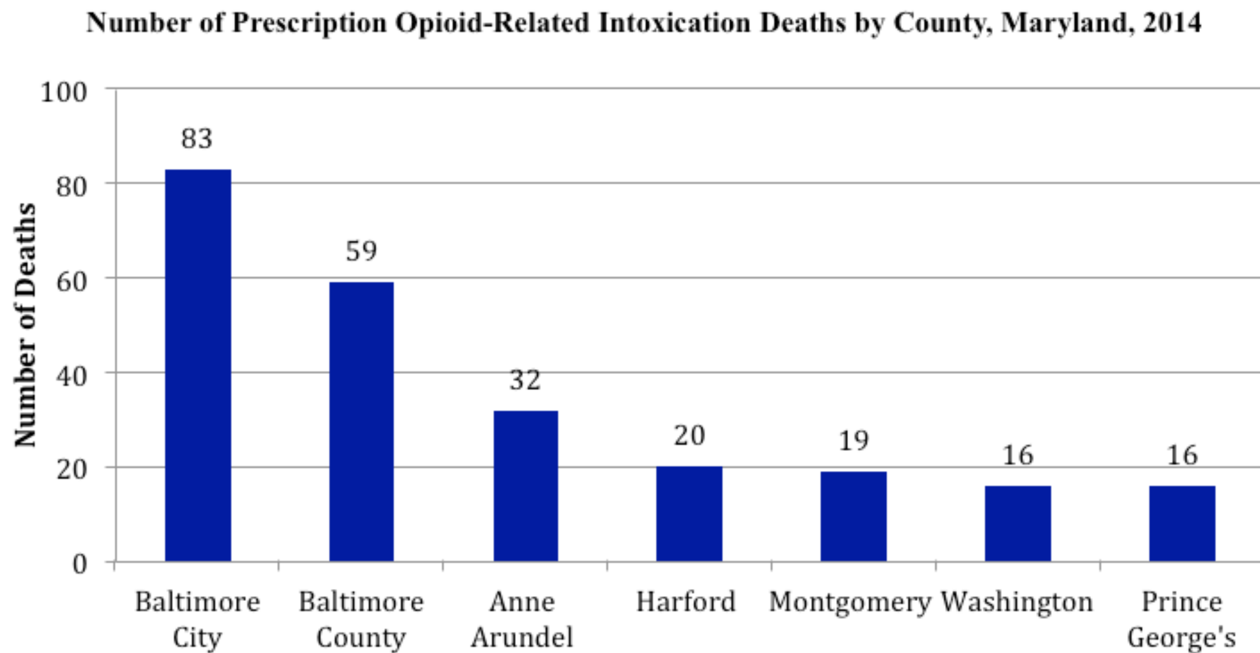
> "We have kids who come into school high at 7 in the morning. There is no learning and it's sad to watch. They are the kids that drop out and don't get a job."

Sometimes children abuse their own prescriptions for anti-anxiety or ADHD medications by taking too many or selling them to others. Some youths with a prescription pill addiction issue were prescribed painkillers after a sports injury. According to participants, there has been a large decrease in referrals for substance abuse from the school system related to the loss of the federal grant program Safe and Drug Free Schools. According to one participant:

> "All school personnel know kids are using but no-one is there to do the assessment and referrals. There's a lot more tolerance for a little weed or alcohol."

Prescription opioid addiction is now a major public health crisis. In 2014, Anne Arundel County had the third highest number of prescription opioid-related deaths in Maryland (after Baltimore City and Baltimore County). The overall number of prescription opioid-related deaths has remained relatively stable in recent years growing from 31 in 2010 to 32 in 2014 (Behavioral Health Administration, Maryland DHMH, 2014).

Figure 15



Source: Behavioral Health Administration, Maryland DHMH. Data is for deaths that occurred in Anne Arundel County irrespective of person's county of residence.

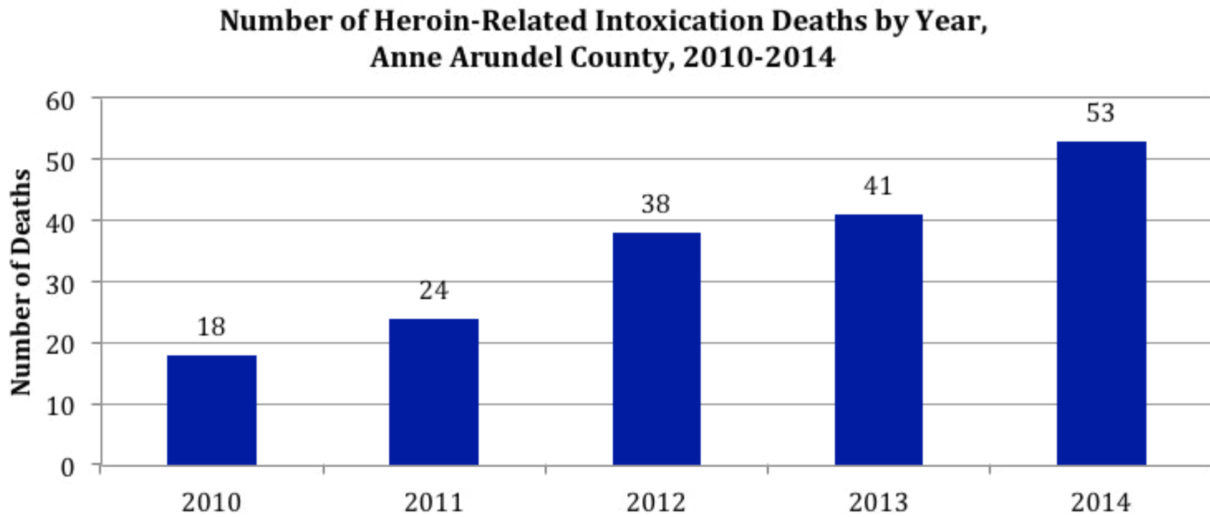
County health professionals acknowledge that while opioids are helpful to patients with pain issues, opioid addiction is a major issue. The medical community has begun tightening regulations and behaviors around opioids. As one noted:

> " If you have someone on controlled medicines for more than six weeks, then that is chronic pain management. Then you have to see them every month, you have to do specific documentation about their continued need and how they are doing. "

Heroin

The increase in controls on prescription drugs has made the trade in prescription opioids more expensive. Partly because of this, heroin (a derivative of opium and an illegal opiate drug) has made a profound reappearance on the streets of Anne Arundel County. It can be as cheap as $10 per hit and can be injected, snorted or smoked. The increase in heroin use is a pressing substance abuse issue for the county presently (Figure 16). Out of 101 intoxication deaths that occurred in Anne Arundel County in 2014, 53 were heroin-related. There was almost a three-fold increase in the number of heroin-related deaths (from 18 to 53) between 2010 and 2014.The number of heroin-related deaths increased by 29.2% between 2013 and 2014 (Behavioral Health Administration, DHMH 2014).

Figure 16

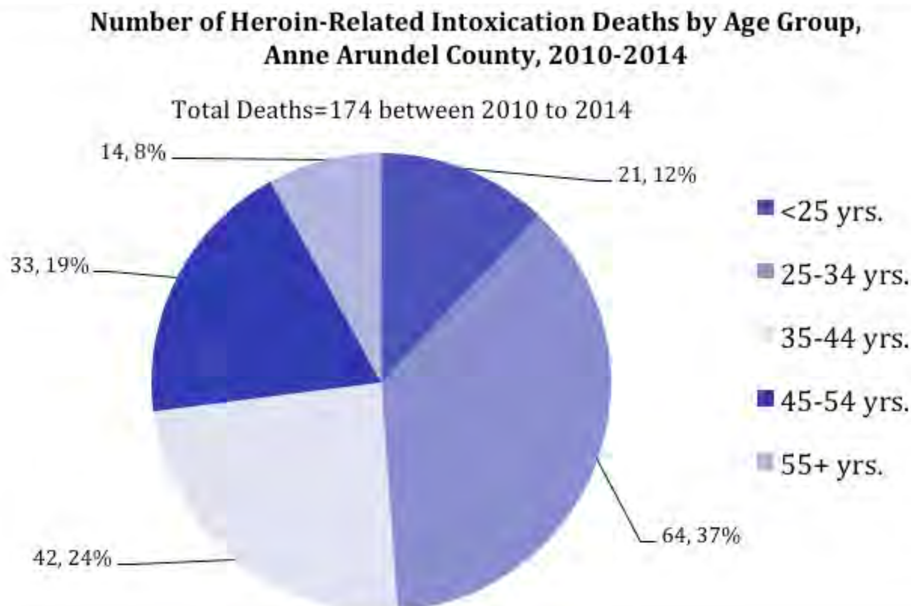


Source: Behavioral Health Administration, Maryland DHMH. Data is for deaths that occurred in Anne Arundel County irrespective of person's county of residence.

From 2010 to 2014, 80% of heroin-related deaths occurred in people ages 25 to 54. Only 12% of deaths occurred in persons less than 25 years, and 14% of deaths in persons 65 years and over (Figure 17). For most heroin addicts, the journey to heroin usually includes other drugs. As one parent noted:

> "They look for someone they know who will buy them a six pack of beer. Then it's 'try this pill it's called oxy' – then they go on to heroin. We had heroin sales on our block. It's right around the corner; it's like Starbucks now."

Figure 17



Source: Behavioral Health Administration, Maryland DHMH. Data is for deaths that occurred in Anne Arundel County irrespective of person's county of residence.

Co-Occurring Issues

The relationship between substance abuse and mental illness is well documented. Patients with mental health issues may "self-medicate" by using and abusing drugs to manage their mental illness. It is often difficult to separate the symptoms of substance abuse from the symptoms of mental illness. Mental health professionals acknowledge that they are still learning how to treat co-occurring disorders. Officials at the Pathways substance abuse treatment center estimate that 80% of their population has a co-occurring disorder, yet treatment and payment options are often in traditional silos. One mental health professional commented that there has been a huge jump in payment denials because the payers don't know how to handle co-occurring disorders:

> "The type of individual we see now, we're not just dealing with co-occurring disorders, we're seeing people who've overdosed and have co-occurring disorders at a much higher rate. The providers are making note. The providers have a huge jump in the number of denials because of co-occurring issues. They're saying they don't know how to handle them."

Substance abuse treatment services are still limited in the county. In-patient treatment is particularly lacking. Pathways, operated by AAMC, offers the only residential treatment center for adolescents in the county. They also offer a variety of outpatient services and 40 in-patient beds, 32 for adults and eight for adolescents 13-17. There is promise of a 120-bed facility for residential substance abuse treatment at the Crownsville hospital site and renovations are already underway. Private residential providers also include Damascus House, Hope House, Samaritan House and Serenity Acres. Chrysalis House is still the only residential treatment facility that offers in-patient services to women and their children.

NEEDS

•More providers of psychiatric, counseling and substance abuse services, especially those who are Spanish speaking

•Residential mental health and substance abuse beds, especially for the adolescent population

•Care coordination for residents coming out of residential care and returning to the community. Care coordination should extend to behavioral health providers and primary care.

•An increase in substance abuse providers across the continuum of care

•Mental health services for the early childhood population

•Integration of behavioral health care at the provider level

•Crisis beds for immediate response and to relieve the emergency departments

•School-based assessment of substance abuse

Anne Arundel County

THE SOCIAL DETERMINANTS OF HEALTH CHAPTER 3

Needs Assessment, 2015

The Anne Arundel County Public School System estimates suggest there are over

925

COUNTY STUDENTS WHO DO NOT SLEEP IN THEIR OWN HOMES ON ANY GIVEN NIGHT.

Homelessness creates huge issues for health facility discharge planners.

Approximately

69,000

(12%) of county residents live in an area categorized as a

FOOD DESERT

The YWCA, the county's **ONLY DOMESTIC VIOLENCE AND SEXUAL ASSAULT SERVICES** provider, has a waiting list of

400-500 INDIVIDUALS

at any given time.

LACK OF PUBLIC TRANSPORTATION

is a major issue for the county. Neither city nor county bus routes operate early in the morning or later in the evening and the wait between buses can be one to one and a half hours. There is only one bus from Annapolis to Glen Burnie. Residents in South County do not even have access to a taxi service.

Rising Demographic, Socioeconomic and Health Indicators by ZIP Code
Anne Arundel County, 2013

ZIP Code	Area	Poverty Percentage	Population % without High School	Percent of Households on SNAP	ED Visit Rate (per 1,000 population)	Percent of Low Birth Weight Infants (2009-2013)	Perventable Hospitalizatin Rate (per 1,000 population)	Minority Population %
20711	Lothian	^	^	^	^		^	
20714*	North Beach	^		^	^		^	
20758	Friendship	^	^		^		^	
21060	Glen Burnie (East)	^	^	^	^	^	^	^
21061	Glen Burnie (West)	^	^	^	^	^	^	^
21144	Severn	^	^	^		^		^
21225*	Brooklyn	^	^	^	^	^	^	^
21226*	Curtis Bay	^	^	^	^	^	^	
21403	Eastport	^	^	^	^			^
	Anne Arundel County	6.30%	9.30%	5.60%	334.9 (per 1,000 population)	7.9 (per 1,000 population)	14.3 (per 1,000 population	29%

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration; American Community Survey; Maryland Health Services Cost Review Commission

* ZIP codes shared with other counties; data presented is estimate for Anne Arundel County only.

^ denotes higher than County average, preventable hospitalization category excludes low birth weight infants

The Social Determinants of Health
Chapter 3

Many factors determine the state of a person's overall wellness. Income level, especially for those who live in poverty, determines what resources are available to meet daily needs, the cleanliness and safety of the environment and access to health services. Although Anne Arundel County has a high standard of living overall, there are pockets of poverty to be found in several areas. Many participants commented that the economic recovery has not reached down into vulnerable communities as of yet and the gap between rich and poor in the county is growing. Communities that were less resourced prior to the recession continue to be less resourced and the social ills continue. As one participant asked:

> "What is the biggest cause of asthma admissions in kids in Anne Arundel County in the summer? Is it that they don't have air-conditioning, or that they didn't take their medications?"

The majority of negative social and health indicators are polarized in the North and South of the County as illustrated by Table 15, which shows the county ZIP codes where more than three socio-economic indicators of health are rising. In South County, access to health care is very limited and there are few primary care doctors. Those South County residents with transportation often travel to Glen Burnie to access primary care. Owensville Health Center, in Edgewater, is inaccessible to those residents who live in areas like Deale and have no transportation. Substance abuse rates are high in South County yet the last treatment facility based there closed this year, although Owensville Health Center is offering substance abuse treatment. Participants suggested primary care clinics based in supermarkets would be very helpful in South County but as of this writing there are none.

Table 15

Rising Demographic, Socioeconomic and Health Indicators by ZIP Code Anne Arundel County, 2013								
ZIP Code	Area	Poverty Percentage	Population % without High School	Percent of Households on SNAP	ED Visit Rate (per 1,000 population)	Percent of Low Birth Weight Infants (2009-2013)	Perventable Hospitalizatin Rate (per 1,000 population)	Minority Population %
20711	Lothian	^	^	^	^		^	
20714*	North Beach	^		^	^		^	
20758	Friendship	^	^		^		^	
21060	Glen Burnie (East)	^	^	^	^	^	^	^
21061	Glen Burnie (West)	^	^	^	^	^	^	^
21144	Severn	^	^	^		^		^
21225*	Brooklyn	^	^	^	^	^	^	^
21226*	Curtis Bay	^	^	^	^	^	^	
21403	Eastport	^	^	^	^			^
	Anne Arundel County	6.30%	9.30%	5.60%	334.9 (per 1,000 population)	7.9 (per 1,000 population)	14.3 (per 1,000 population	29%

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration; American Community Survey; Maryland Health Services Cost Review Commission

* ZIP codes shared with other counties; data presented is estimate for Anne Arundel County only.

^ denotes higher than County average, preventable hospitalization category excludes low birth weight infants

Hospitalization Patterns Related to Social Determinants

As illustrated in Figure 18, when patterns of hospitalization by ZIP code are examined, they generally reflect the social determinants illustrated in the Table 15. Eastport, Galesville, Pasadena, Lothian, Annapolis (ZIP code 21401), Linthicum Heights, Glen Burnie (West and East), Curtis Bay, Harmans, Friendship and Brooklyn have higher hospitalization rates than the county rate. Brooklyn has the highest hospitalization rate among all ZIP codes (185.2 per 1,000), which is 80% higher than the county rate (107.1).

Figure 18

Hospitalization Rate per 1,000 Population, Anne Arundel County 2013

Obesity

Many factors play a role in weight including low income, lifestyle, surrounding environment, access to healthy food, genetics and certain diseases. Overweight and obesity are determined using weight and height to determine a BMI or "body mass index" measure. Between 2011 and 2013, the percent of overweight adults (BMI of 25 to 29.9) 18 years and older in Anne Arundel County fell from 36.2 to 32.6 (Figure 19). However, the obesity rates for those with a BMI of 30 or more increased almost four percentage points (Figure 20).

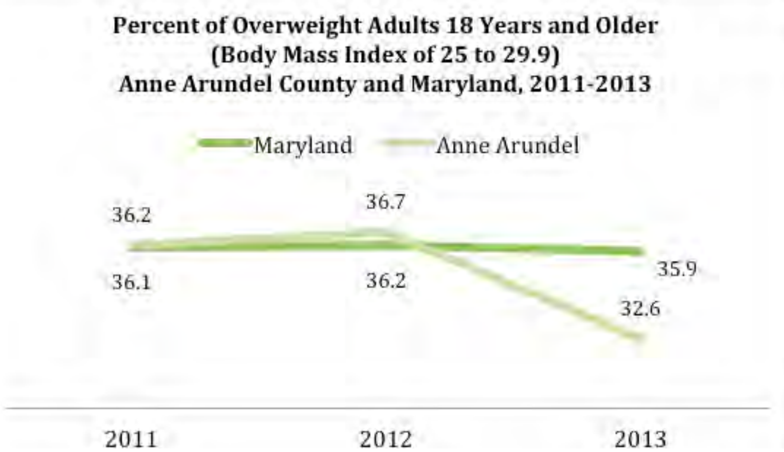
There was general acknowledgement among participants that there is no quick fix for obesity issues. Several pointed out that bad eating and exercise habits might take a generation to change. Below is a typical comment:

> "When you think about food, food quality, access to food, fitness, nutrition, education — all of the pieces that go into this — you are breaking cycles of drinking soda or lower cost unhealthy foods; that is very, very difficult to do. I would caution all of us to be patient because this stuff is not going to turn in a 3-year cycle."

Obesity is prevalent in low-income families in the county for a variety of reasons: their neighborhoods often lack full-service grocery stores and farmers' markets; healthy food can be more expensive; there is no transportation to get to a supermarket; and there is a greater availability of fast food restaurants selling cheap, filling food. As one participant commented:

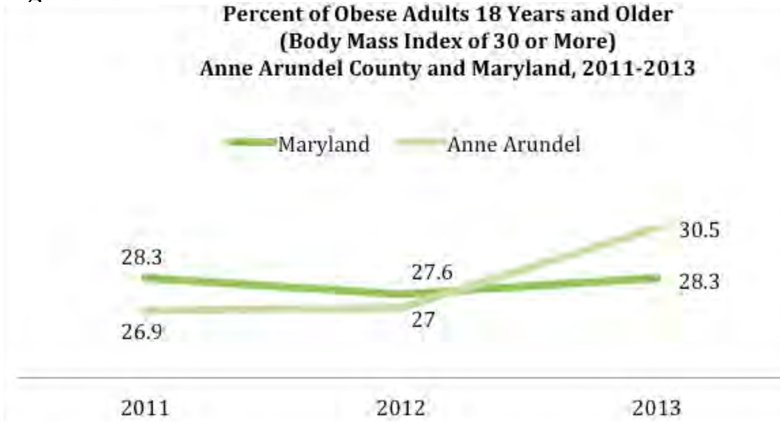
> "We have a problem with diabetes but it seems as soon as things become sugar-free they are way more expensive. You can't choose to change your lifestyle because eating healthy comes with a price....when you don't have money, you eat chicken and rice, ground beef, things that can go in the microwave, a lot of processed foods mainly - whatever is cheap and easy."

Figure 19



Source: Anne Arundel County Department of Health Report Card, 2015 (Maryland BRFSS)

Figure 20



Source: Anne Arundel County Department of Health Report Card, 2015 (Maryland BRFSS)

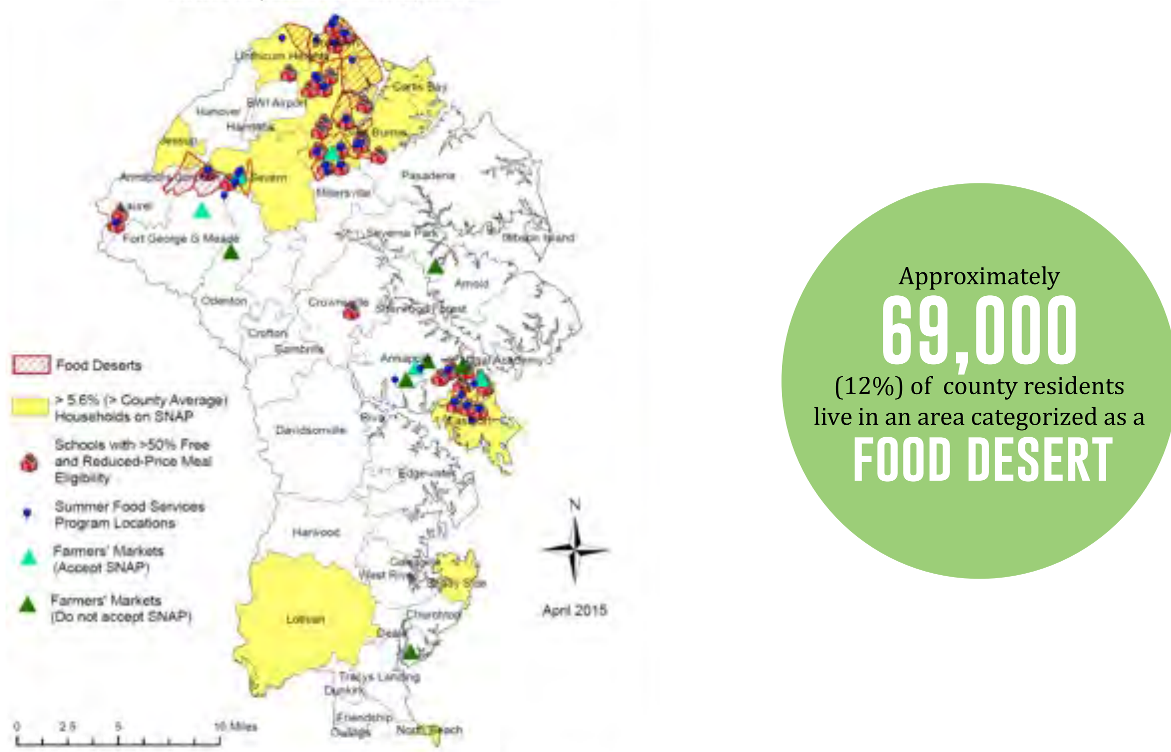
Health and Hunger

Several participants suggested that while the lack of physical activity, especially for children, is part of the picture of obesity, the real issue is the food we eat. Several low-income communities are also mapped as food deserts (Figure 21). They do not have access to healthy food and they have no transportation to get to supermarkets. Unhealthy food is cheap and filling — an important asset for large families managing with few means.

Approximately 69,000 (12%) of Anne Arundel County residents live in an area categorized as a food desert (Figure 21). Food deserts are defined as urban neighborhoods and rural towns without ready access to fresh, healthy and affordable food. Lack of access to healthy food contributes to a poor diet, which can lead to higher levels of obesity, diabetes and heart disease. Figure 21 overlays food deserts, SNAP recipients and children receiving free and reduced lunch, resulting in a grim picture of North County. Food insecurity is the most broadly-used measure of food deprivation. The United States Department of Agriculture defines food insecurity as "when consistent access to adequate food is limited by a lack of money and other resources at times during the year." According to Feeding America (2013), 50,580 of Anne Arundel County's residents are food insecure. Many of them are children. Hungry and malnourished children suffer from two to four times as many individual health problems as children who are adequately nourished. Health issues include unwanted weight loss, fatigue, headaches, irritability and frequent colds.

Figure 21

Food Environment
Anne Arundel County, 2015



Source: Supplemental Nutrition Assistance Program (SNAP) Participation: 2009-2013 ACS, 50Year Estimates; Farmers Market: Maryland Department of Agriculture, 2014: Summer Food Service Program: Anne Arundel County Public Schools; Free and Reduced-Price Meal Eligibility: Maryland Department of Education; Food Deserts: USDA, Food Access Research Atlas. The low access and distance measure extracted from the Food Access Research Atlas, and displayed on this map, is low income and low access measured at 1/2 mile and 10 miles.

Transportation

The lack of public transportation is a major issue for the county. Neither city nor county bus routes operate early in the morning or later in the evening and the wait between buses can be one to one and a half hours. There is only one bus from Annapolis to Glen Burnie. Residents in South County do not even have access to a taxi service. Currently the county provides subsidy support for three bus routes (B, J and K) operating on one hour to 90 minute intervals covering Maryland City, Odenton, Severn and Northwest Glen Burnie. (Anne Arundel County Transportation Commission, 2014). The City of Annapolis offers a circular route and fixed route services. According to one case manager, even those low-income residents lucky enough to live and work in Annapolis often have to walk three miles to and from the bus stop each day. Many low-income residents do not know how to drive a car and lessons are prohibitively expensive. Cheaper transportation, such as electric scooters and bikes are increasingly regulated, which requires a high initial outlay. Insurance, tag and title are other costs that have to be factored in. One North County resident commented:

> Transportation is the real issue. We don't have any network of transportation. Everything is still limited to the Ritchie Highway corridor. If you don't live on that corridor it's very difficult.

Lack of transportation continues to impact low-income and senior residents. Many cannot get to their primary care doctor or to the pharmacy to pick up their medications. Some are discharged from the hospital or Emergency Room without a ride home and too late to ride the bus.

Housing and Homelessness

Rising home prices, high private rents and a lack of affordable and multi-family housing are continuing problems for large segments of the population. In 2013, Anne Arundel County homeowners spent 34.3% and renters spent a staggering 49.5% of their income on housing. As income levels decrease, families need to spend an increasing proportion of their income on housing. As of March 2015, there were 9,000 families on the waiting list for public housing and 10,000 families on the waiting list for Housing Choice (Section 8) vouchers (Anne Arundel County Housing Commission, 2015). More than 2,000 homeless residents received case management services in 2014 (Table 16). This number does not count those sleeping in woods or motels, or those doubled up with other families. The fastest growing homeless population is homeless families and youth who are staying with friends or living temporarily in motels. There are over 250 families living in a shelter or transitional housing (Homeless Management Information Systems, Anne Arundel County, 2014) The Anne Arundel County Public School System estimates suggest there are over 925 county students who do not sleep in their own homes on any given night. Homelessness creates huge issues for health facility discharge planners. As one succinctly commented:

> How do you do discharge planning to people who don't have a place to be discharged to?

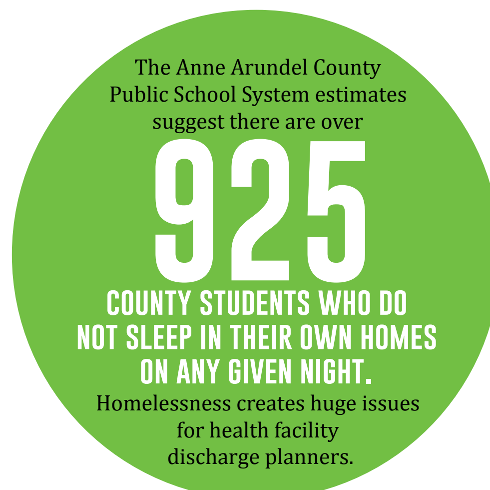


Table 16

Numbers of Homeless Served in Anne Arundel County 2013-2014		
	Total Served	New Entries in 2014
Total Homeless Served	2,078	
Total Veterans	105	
Male	1,120	
Female	958	
Emergency Shelter		
Total People	805	605
Number of Families	128	108
Transitional Housing		
Total People	152	77
Number of Families	39	20
Anne Arundel County Public Schools (Not included in numbers above)		
Active homeless students	925	
Unaccompanied Youth	350	

Source: HMIS System for Anne Arundel County, 2015

Domestic Violence/Sexual Assault or Abuse

Domestic violence/sexual assault or abuse numbers for the county are unreliable. Many victims do not report through fear and shame. Even when victims are hurt enough to warrant an emergency room visit they may deny their injuries were purposeful. Currently the YWCA (the county's only domestic violence and sexual assault services provider) has a waiting list of 400- 500 individuals at any given time. There is only one safe house for domestic violence/sexual assault or abuse victims in the county, although plans are underway to build a new shelter for victims.

Domestic violence/sexual assault or abuse victims present at local hospitals and their emergency departments. According to one participant, emergency department providers are often involved in time-consuming charting and the integration of victims' care with law enforcement, social workers and patient advocates. AAMC currently employs a staff of 13 abuse and domestic violence specialists who respond to domestic violence, sexual assault, child abuse and vulnerable adult abuse around the clock. In 2014, the team assisted 960 new victims and 196 secondary victims. Of those victims, 567 reported domestic violence and 114 reported sexual assault. Sixty-seven percent of the cases came from the emergency department. UMBWMC's Sexual Assault Forensic Exam (SAFE) program only responds to acute sexual assault or abuse. In 2015, the program served 14 adults and adolescents over 13 and seven pediatric patients less than 12 years old.

All participants familiar with domestic violence/sexual assault or abuse issues reported that they expect the numbers of victims to continue to rise, mostly due to the increased awareness and acceptance of the issue. Several suggested that a Forensic Nurse Examiner Program would help ensure the medical, safety and psycho-social needs of victims are met and forensic evidence is documented completely while helping to take pressure off emergency room personnel.

Lack of Recreational and Community Facilities

Several participants commented on the need for more recreational opportunities, especially for youth. Several noted that the rise in substance abuse among youth may be correlated with the lack of recreation and other activities outside of school. As one South County participant commented:

> "The children are bored. They have nothing to do. They go down to the pier and drink. They say 'Try this smoke.' There's a liquor store in Deale. The teenagers hang in the parking lot. They have no place to go."

Parent advocates caring for adult children with mental illnesses noted that there is a lack of social activities and employment opportunities for this population. There are no evening and very few late day programs. As one parent commented:

> "After 1:30 in the afternoon there is nothing [in the county] for the mentally ill to do but sit at home."

Technology

Social media and technology was highlighted several times as one of the root causes for increased levels of stress, anxiety and depression in our community. Examples ranged from cyberbullying to information on cutting to negative social messages. Many participants suggested that the lack of social skills prevalent in young people is directly related to technology. Children as young as two, teenagers and all the youth in between are engaged in overuse. Many are sleep deprived; it is not unusual for teens to be chatting into the early hours of the morning. Several participants suggested that everyone — young and old — turn off technology at least an hour before bedtime. Parents were urged to take responsibility for their own as well as their children's overuse. As one participant noted:

> "Kids are on the phone at 2:00 a.m. in the eighth grade. Parents need to take control. Seven year olds have headphones and tablets… Don't look at your iPads at all when your kids are around."

Needs

•Access to transportation, especially for low-income residents and seniors

•Affordable housing. The lack of affordable housing is creating stress, and worst of all homelessness, for low-income families.

•Access to recreational and social opportunities, especially for youth and the adult mentally ill

•Primary care and behavioral health providers, which are especially lacking in South County.

•Access to healthy food for low-income families

•Healthy living conditions, including air conditioning

•A Forensic Nurse Examiner Program to better serve domestic violence/sexual assault and abuse victims and to take pressure off emergency room personnel

Anne Arundel County

SERVICE DELIVERY ISSUES

CHAPTER 4

Needs Assessment, 2015

Health services in the county are overwhelmed by repeat patients.

This population ranges from drug users with frequent overdoses to those with chronic conditions like diabetes and the worried elderly with ongoing somatic issues.

There is a clear correlation between low income, access to services and mental health.

Lothian, Edgewater, Annapolis (ZIP code 21401), Churchton, Deale, Glen Burnie (East and West), Curtis Bay, Friendship and Brooklyn have higher ED visits rates for behavioral health conditions than the total county rate.

Brooklyn has the **HIGHEST ED VISITS RATE** (42.2 per 1,000) for behavioral health conditions, which is **145% HIGHER** than the average county rate (17.2 per 1,000).

Emergency Department Visits by Race and Ethnicity
Anne Arundel County, 2013

Race/Ethnicity	Number of ED Visits	Rate per 1,000
White, NH	98,617	250.3
Black, NH	48,507	554.0
Hispanic, Any Race	8,552	223.0
Asian, NH	1,454	71.7
Total	186,124	334.9

Emergency Department Visits by Age Group
Anne Arundel County, 2013

Age Group	Number of ED Visits	Rate per 1,000
0 to 18 yrs.	39,455	312.0
19 to 39 yrs.	68,342	415.9
40 to 64 yrs.	58,087	301.9
65 years and over	20,240	279.0

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Participants suggested that **CASE MANAGEMENT AT THE POINT OF DISCHARGE** could be very helpful, especially for reducing readmission to hospitals. Rather than a hand-off, participants suggested a “warm hands on” to a paid “friend” or navigator who could follow up.

Service Delivery Issues
Chapter 4

Many of the issues and needs raised by participants in this needs assessment originate in the processes used to deliver health and behavioral health care. Care is often delivered in silos of specialization and though many agencies may be involved in the wellness of each individual, there are barriers to communication between those agencies. Because the processes used to deliver health care are not naturally fluid there are transitional points for the patient that may well need attention.

Emergency Departments

Emergency Departments (ED) provide a significant source of medical care in Anne Arundel County. In 2013, Anne Arundel County residents made approximately 186,124 ED visits to hospitals within Maryland. There were 335 visits to the ED for every 1,000 individuals in the county. The ED visit rate for Blacks was the highest among the racial and ethnic groups examined followed by Whites, Hispanics of any race and Asians. The rate of ED visits for Blacks was 121% higher compared to that of Whites and 65% higher than the county's average ED visit rate (Table 17). People over 65 years of age had the lowest rate of ED visits by age group. (Note: This data only includes Anne Arundel County residents visiting the ED of hospitals in Maryland)

Table 17

Emergency Department Visits by Race and Ethnicity Anne Arundel County, 2013		
Race/Ethnicity	**Number of ED Visits**	**Rate per 1,000**
White, NH	98,617	250.3
Black, NH	48,507	554.0
Hispanic, Any Race	8,552	223.0
Asian, NH	1,454	71.7
Total	186,124	334.9

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 18

Emergency Department Visits by Age Group Anne Arundel County, 2013		
Age Group	**Number of ED Visits**	**Rate per 1,000**
0 to 18 yrs.	39,455	312.0
19 to 39 yrs.	68,342	415.9
40 to 64 yrs.	58,087	301.9
65 years and over	20,240	279.0

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

In 2013, 85.6% of all ED visits by Anne Arundel County residents were due to acute conditions such as sprains and superficial injuries and 14.3% were due to chronic conditions. Mood disorder was the most common chronic condition (12.2%) for ED visits followed by asthma (11.6%), alcohol-related disorders (7.2%), anxiety disorders (6.0%), headaches/migraines (5.9%) and substance-related disorders (3.9%).

Table 19

Emergency Department Visits for Chronic Conditions Anne Arundel County, 2013			
	Chronic Conditions	**Frequency**	**Percent**
1	Mood Disorder	3,256	12.2%
2	Asthma	3,101	11.6%
3	Alcohol-related disorder	1,922	7.2%
4	Anxiety disorders	1,607	6.0%
5	Headache/migraine	1,576	5.9%
6	Substance-related disorder	1,042	3.9%
7	Hypertension	1,027	3.9%
8	Other nerve disorder	946	3.6%
9	Dysrhythmia	742	2.8%
10	Other upper respiratory conditions	703	2.6%
	Total ED Visits for Chronic Conditions	26,637	

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

When ED visits are disaggregated by ZIP code, there is a clear correlation between low income and numbers of visits. Eastport, North Beach, Annapolis (ZIP code 21401), Lothian, Galesville, Glen Burnie (East and West), Friendship, Harmans, Curtis Bay and Brooklyn have higher ED visits rate than the total county rate. Brooklyn has highest ED visits rate (960 per 1,000), which is 186% higher than that of the average county ED visits rate (335 per 1,000).

The two county hospital EDs at AAMC and UMBWMC have become the “catch all” for somatic and behavioral health treatment. The ED is a trusted venue and one of the main front doors for primary care, especially among lower income residents (even those with insurance and primary care doctors). Unfortunately, there are a number of diagnoses and subsequent services that Medicaid will not pay for in the ER but which could be billed in the community clinic setting. Both county ERs are on bus routes and most patients are seen within 24 hours. Patients can experience long waits and hurried entrance and discharge processes. Nonetheless, the ER remains the primary care of choice for some residents. As one participant noted:

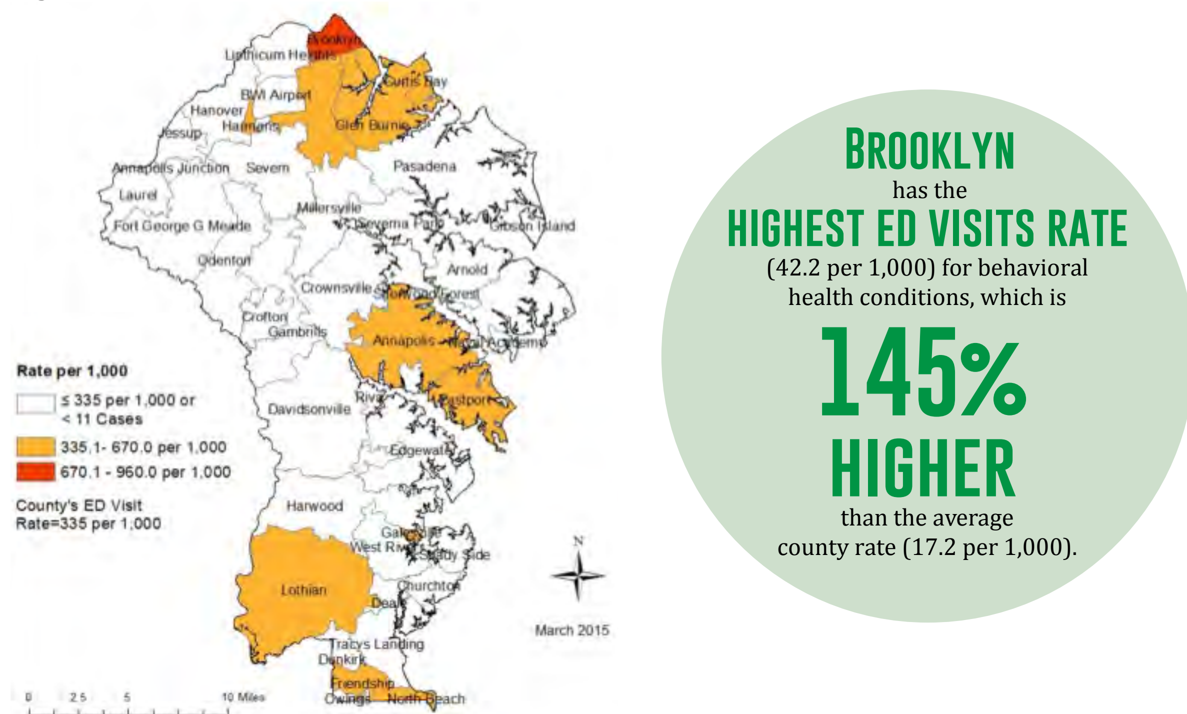
“I would probably use the emergency room for about everything; I am not familiar with everything that goes on inside my body, so instead of waiting to see my primary care doctor I would go to the hospital. In the hospital the tests come back right then and there, so if it is something serious you will know instead of leaving and having to wait for results to come back. It could be too late; I could die.”

Another participant pointed out:

> “I would rather go to the hospital and have them see me right then instead of making an appointment with primary care and waiting a couple of days. I would go there because it is a lot closer than where my primary care is and it would be a lot quicker. It is on a bus route.”

Emergency Department Visit Rate per 1,000 Population,
Anne Arundel County, 2013

Figure 22



Source: Out Patient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Behavioral Health Issues and the Emergency Room

According to participants in the emergency services focus group, growing mental health issues, lack of mental health resources and denials from insurance companies are causing major issues across the emergency services spectrum. Patients with mental health issues have a ripple effect, pushing up wait times for everyone. For those residents with critical substance abuse and mental health issues, the ED is often their only choice. This can be particularly difficult for the parents of mentally ill adults. They may have to wait hours for their son or daughter to be evaluated in the ED. The fact that the patient is an adult, and therefore has confidentiality rights, means that parents cannot

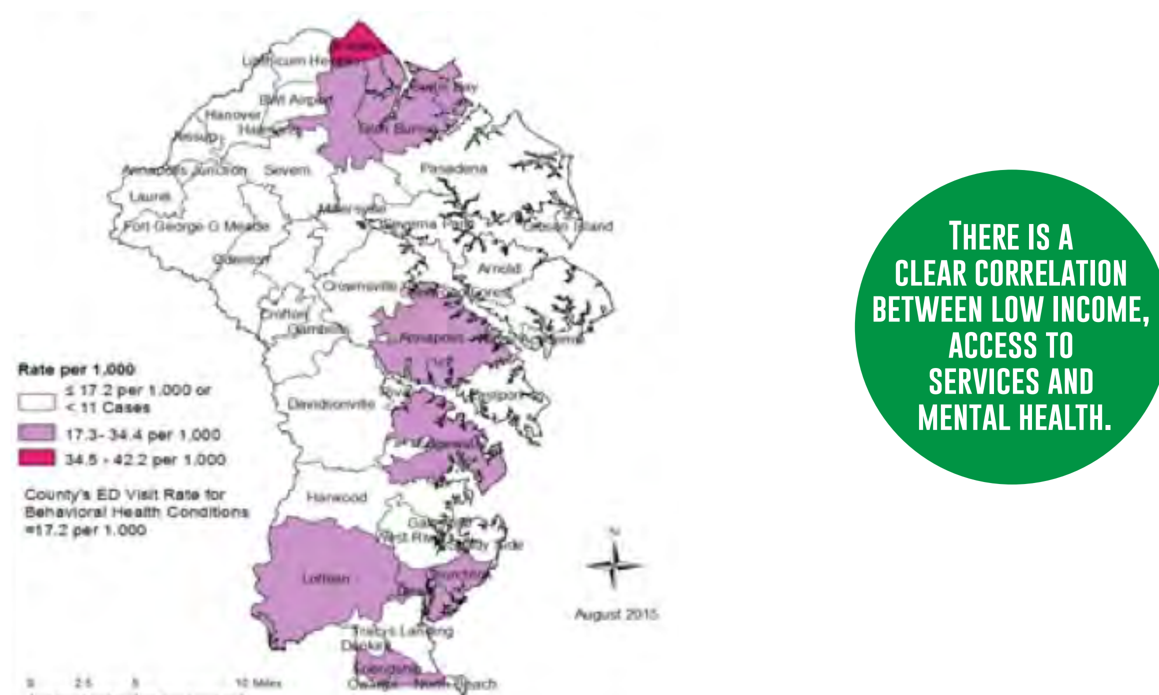
be included in the discussions about treatment without permission of their son or daughter. One parent reported that ED staff will not engage with her even when she has important and relevant information. As he noted:

> It’s the only place that my son has to go. No one talks to me even when I take a file with all the information. They will not talk to the parent. I wait out in the waiting room. None of the psychiatrists would talk to us – I couldn’t even tell them what meds he was taking.

Both EDs are also seeing younger children with mental health issues. The children are being referred from daycare settings and pre-kindergarten when routine behavioral interventions have no impact on escalating behavior. Homeless residents often appear in ERs where the police are called repeatedly to assist in stabilizing the situation.

Figure 23

Emergency Department Visit Rate per 1,000 Population,
Behavioral Health Conditions as Primary Discharge Diagnosis,
Anne Arundel County, 2013



Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

THERE IS A CLEAR CORRELATION BETWEEN LOW INCOME, ACCESS TO SERVICES AND MENTAL HEALTH.

When behavioral health ED visits are examined by ZIP code, there is a clear illustration of the relationship between low income, access to services and mental health. Lothian, Edgewater, Annapolis (ZIP code 21401), Churchton, Deale, Glen Burnie (East and West), Curtis Bay, Friendship and Brooklyn have higher ED visits rates for behavioral health conditions than the total county rate. Brooklyn has the highest ED visits rate (42.2 per 1,000) for behavioral health conditions, which is 145% higher than the average county rate (17.2 per 1,000).

Communication and Partnerships

The lack of communication and partnering between the various health and human services agencies, including emergency personnel, was noted by many participants. There is, at times, a disconnection between the Emergency Room, Emergency Medical Services and the Police Departments. As one participant noted, "Communication is a little bit broken." Participants did acknowledge that cross agency communication at high levels of authority has increased related to the needs in the community, but it is still lacking in those who provide the services.

Communication between agencies is made more awkward by the regulations for patient confidentiality laid out by the Health Insurance Portability and Accountability Act (HIPAA) and the Family Educational Rights and Privacy Act (FERPA.) As an example, the school system may refer a youth to the ED, but the schools receive no report or follow-up so they don't know what transpired until they talk to the parents or the youth. Case managers and care coordinators often don't know their client has entered or been discharged from the hospital. As one coordinator noted:

> "Communication is a big issue. Sometimes we don't find out they've been to the hospital until they've already gone and come back again. What happened prior to admission? What medicine wasn't taken? Can they read their medications? Staffing with local hospitals doesn't happen and the discharge happens quickly."

Many participants suggested there should be more collaboration between county agencies, especially Health, Aging and Social Services to ensure that the services work together. Here is a typical comment:

> "There is a lot of overlap in the populations being served, but there is probably some duplication of effort and then there are still some folks slipping through the cracks."

Nonetheless, there are several partnerships related to mental health and substance abuse that have been developed between the police department, criminal justice agencies, health and mental health services and the public school system. Agencies expressed an interest in a shared general consent for information release and a centralized intake system with one number to call. There is such a release among the medical community but it does not extend to other agencies.

The crisis response system, supervised by the County Mental Health Agency, has one number for those in crisis to call, including the homeless population. Crisis teams are now assigned to AAMC and UMBWMC. A client release of information for coordination of services among agencies has been developed and works well.

The One-Stop-Shop Notion

Participants commented that services are more fragmented because they occur in several different locations. Several stressed the increased need for health and social services to be delivered at one location. The community schools model that offers primary health care, behavioral health and social services in the school building was suggested by some as a good model for low-income residents, especially those without transportation.

Telehealth

Electronic and virtual services might be the way forward for the county given the dire lack of transportation in the county. However, there was general agreement that the county is not on the cutting edge of telehealth. In the South County focus group, participants pointed out how useful telehealth could be in the areas where there are no buses or taxis. They suggested that telehealth and telemedicine, including psychiatric services, could be done through smart phones.

High Utilizers of Health Care

Health services in the county are overwhelmed by repeat patients. This population ranges from drug users with frequent overdoses to those with chronic conditions like diabetes and the worried elderly with ongoing somatic issues. These “super-utilizers” strain the system at every level, especially the crisis and emergency systems. According to an emergency services participant:

> “Some patients call Emergency Management (EMS) more than 10 times per year. Last year, there were 60,000 calls to EMS and 40,000 resulting patients.”

Many of these patients could be managed more judiciously if agencies were allowed to share information and coordinate care. Home visiting and follow-up care could eliminate those who return because they didn’t follow directions on their medications or didn’t get their medications filled after discharge.

Transition Points, Care Coordination and Home Visiting

The two points of entry and discharge into EDs, hospitals and other systems were highlighted as problematic. Participants stressed that the hospital acts as a positive holding place where many issues can be addressed. As one participant adroitly commented:

“When a person walks into a hospital you have them. We need some kind of staff at the front door that capture those people and do education and planning and phone calls with them sitting right there...tie them to services while they're there”

At the point of admission community service providers are not part of the process. They often don't know their clients have been admitted so they can't be helpful or supportive. The discharge process, especially from EDs, is often hurried with no means to follow up with the patient. While referrals may be made at this point, the patient is expected to follow up. As one participant noted:

“Discharge is not handing someone a piece of paper with multiple numbers. You need to make a plan. One can't just give people a list of three clinics – they have to be coordinated by navigators.”

Participants suggested that case management at the point of discharge could be very helpful, especially for reducing readmission to hospitals. Rather than a hand-off, participants suggested a “warm hands on” to a paid “friend” or navigator who could follow up with the discharge instructions, collect the medicines, read the bottles and instructions when necessary and ensure the home was ready to accept the patient. When patients return home there is currently no organized system to follow up on their immediate needs and welfare. Participants suggested home visiting programs although they acknowledged that people are not always ready to have people in their homes. As one participant noted:

“After patients leave, there is no one to check on them, make sure their prescription is filled or that they are actually taking needed meds.”

There are discussions about EMS personnel acting as home visitors who will follow up with the patient related to basic health issues such as medication management, fluid intake, follow-up appointments and so on. This new idea is being referred to as Mobile Integrated Healthcare. EMS personnel are a familiar and positive force in the community; easily identifiable by their uniform. However, the discussions related to this idea have been somewhat stalled by the Maryland Institute for Emergency Medical Services Systems, the organization that oversees and coordinates all components of the statewide EMS system in accordance with Maryland statute and regulations. The organization is concerned that someone other than nurses will administer nursing care. Several other options for “two generation” home visiting were considered by participants, including navigators to act as “friends,” bachelor's level social workers, specially trained Healthy Start nurses, and Meals on Wheels personnel. There are already care coordinators in several health and human services systems but their work is not coordinated across silos of care.

Wellness, Early Screening and Personal Responsibility

Somatic health and behavioral health are interrelated. Physical illnesses can cause depression and anxiety in the same way that behavioral health issues can cause physical illness. Mental health issues and substance abuse are often co-occurring. Participants commented that somatic care, mental health and substance use are too fragmented in the current system. The health model should be holistic with an emphasis on long-term, planned wellness. As one participant noted:

> “The approach we need to be taking is that wellness is life-long. It’s not just having services available but that those services are offered for every phase of the lifecycle.”

The move towards wellness should include early screenings for behavioral health issues in the primary care setting and follow-up care. Patient-centered medical homes are an important part of the wellness concept. The Affordable Care Act has increased access to health care for many. With access comes responsibility for personal health and personal choices. The health system is already moving towards patient engagement and education on personal responsibility including the importance of routine health maintenance like check-ups and physicals and the management of chronic conditions. Many participants agreed that the ACA should emphasize personal responsibility. As one health care professional commented:

> “People should have access to good health care. I do think that that should be a right. I think with rights though do go some responsibilities, and I don’t think the Affordable Care Act did anything related to personal responsibility.”

However, in low-income communities that message may need to be louder. According to one resident living in public housing:

> “A lot of people aren’t educated on finding a primary care doctor, in some communities all they know is the emergency room. In poor communities they don’t understand the importance of checkups and physicals, they don’t understand all that, it is just when they feel something they will go.”

Needs

- Information sharing and coordination among agencies
- Comprehensive patient interviewing and case management at admission and discharge
- Home visiting and follow-up care
- Coordination and communication among care workers
- Further use and development of community health clinics
- One stop shops for health, behavioral health and social services

REFERENCES

Preface

•Centers for Disease Control and Prevention, 2014. Health System Transformation and Improvement Resources for Health Departments. http://www.cdc.gov/stltpublichealth/program/transformation/index.html

•Maryland Hospital Association, 2014. Waiver 101. http://www.mhaonline.org/docs/default-source/advocacy/legislative/md-general-assembly/Priorities/leave-behinds/waiver-101.pdf?sfvrsn=2

Chapter 1 – Somatic Health

•Centers for Disease Control and Prevention, 2015. Leading Causes of Death in Anne Arundel County, 2013. http://webappa.cdc.gov/sasweb/ncipc/leadcaus10_us.html

•Centers for Medicare and Medicaid Services, 2015. Medicare Beneficiaries in Anne Arundel County, 2013.https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/medicaremedicaidstatsupp/2013.html

•Maryland Department of Health and Mental Hygiene, 2015. Leading Causes of Death, Anne Arundel County, 2013. http://dhmh.maryland.gov/vsa/documents/13annual.pdf.

•Maryland Department of Health and Mental Hygiene, 2015. Infant Mortality Rates Anne Arundel County, 2013, http://dhmh.maryland.gov/vsa/sitepages/reports.aspx

•Maryland Department of Health and Mental Hygiene, 2015. Anne Arundel County Low Birth Weight, 2013. http://dhmh.maryland.gov/data/SitePages/Maternal%20and%20Child%20Health.aspx

•Maryland Department of Health and Mental Hygiene, 2015. Medicaid Enrollment by Age, Sex and Ethnicity, 2014. http://dhmh.maryland.gov/data/SitePages/Data%20Portals.aspx

•Maryland Health Services Cost Review Commission, 2013. Inpatient Hospital Discharge File 2013. http://www.hscrc.state.md.us/documents/commission-meeting/2013/10-09/hscrc-pre-commission-meeting-docs-2013-10-09-rev1.pdf

•University of Maryland Medical System, 2014. Physician Needs Assessment. https://umm.edu/~/media/umm/pdfs/about-us/community-outreach/ummc-chna-executive-report-fy2015.pdf?la=en

•US Department of Health and Human Services, 2015. Health Shortage Areas. http://www.hrsa.gov/shortage/

Chapter 2 – Behavioral Health

•Anne Arundel County Coalition for Safe Communities (2013). Youth Behavioral Risk Survey. http://aahealth.org/pdf/ConsumptionSurvey9_13.pdf

•Anne Arundel County Department of Health (2015). Healthy Environments/Healthy People. http://aahealth.org/pdf/aahealth-report-card-2015.pdf

•Anne Arundel County Mental Health Agency (2014). Annual Report, 2014. http://www.aamentalhealth.org/news.cfm

•Centers for Disease control and Prevention, 2013. Behavioral Risk Factor Surveillance Systems. http://www.cdc.gov/brfss/acbs/2013/pdf/acbs_2013.pdf

•Maryland Department of Health and Mental Hygiene (2015). Drug and Alcohol Related Deaths in Maryland. http://dhmh.maryland.gov/data/Documents/Annual%20OD%20Report%202014_merged%20file%20final.pdf

•Maryland Department of Health and Mental Hygiene (2013). Maryland Youth Risk Behavior Survey. http://phpa.dhmh.maryland.gov/cdp/SitePages/youth-risk-survey.aspx

•Robert Wood Johnson Foundation (2015). County Health Rankings and Road Maps. http://www.countyhealthrankings.org/app/maryland/2015/rankings/anne-arundel/county/outcomes/overall/snapshot

Chapter 3 – Social Determinants

•Anne Arundel County Department of Health Report Card, 2015 (Maryland BRFSS). http://aahealth.org/pdf/aahealth-report-card-2015.pdf

•Anne Arundel County Department of Health, 2015. Demographic, Socio-economic and Health Indicators by ZIP Code, 2013

•Anne Arundel County Transportation Commission (2014.) Final Report of the Anne Arundel County Transportation Commission. http://search.aol.com/aol/search?enabled_terms=&s_it=comsearch&q=anne+arundel+county+traansportation+commission&s_chn=prt_main5

•Feeding America (2013). Anne Arundel County Food Environment. http://map.feedingamerica.org/county/2013/overall

•Homeless Management Information System (2015). Numbers of Homeless Served in Anne Arundel County, 2013-2014

•Maryland Health Services Cost Review Commission, 2013. Inpatient Hospital Discharge File 2013. http://www.hscrc.state.md.us/documents/commission-meeting/2013/10-09/hscrc-pre-commission-meeting-docs-2013-10-09-rev1.pdf

Chapter 4 – Service Delivery Issues

•Anne Arundel County Department of Health (2015). Healthy Environments/Healthy People. http://aahealth.org/pdf/aahealth-report-card-2015.pdf

•Maryland Health Services Cost Review Commission, 2013. Outpatient Hospital Discharge File 2013. http://www.hscrc.state.md.us/documents/commission-meeting/2013/10-09/hscrc-pre-commission-meeting-docs-2013-10-09-rev1.pdf

Anne Arundel County, Maryland

2015 Community Health
Needs Assessment

Secondary Data Profile

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County Overview

Anne Arundel County is located in Maryland and is home to more than 556,000 residents. It is bounded in the north by Baltimore City; in the east by the Chesapeake Bay; in the south by Calvert County; and in the west by the Patuxent River and Prince George's and Howard counties. It lies between the two major cities of Washington, D.C. and Baltimore, MD.

Anne Arundel County has a total area of 415 square miles with approximately 1,300 people living per square mile. The northern, central and western parts of the county are urban, while the southern part of the county is rural. The county has 127 public schools, approximately 80,000 students and 5,700 teachers. There are three major institutions of higher education: Anne Arundel Community College, St. John's College and the United States Naval Academy. The county is home to the Fort George G. Meade military installation, 15 major highway routes including the Chesapeake Bay Bridge that connects Maryland's Western and Eastern Shores, and the Baltimore/Washington International Thurgood Marshall Airport. In addition, the county has two Maryland State parks, over 70 county regional and community parks, and more than 534 miles of linear coastline.

Anne Arundel County is served by two major hospitals: Anne Arundel Medical Center in Annapolis and the University of Maryland Baltimore Washington Medical Center in Glen Burnie. MedStar Harbor Hospital, located just north of the county line in Baltimore City, also serves county residents.

Additionally, four Federally Qualified Health Centers (FQHCs) and the Anne Arundel County Department of Health (six clinic sites) offer a range of physical and behavioral health services. The Anne Arundel County Mental Health Agency, Inc. (AACMHA) provides a wide range of quality mental health services to Medicaid recipients and other low-income and un-insured county residents who meet certain criteria.

Secondary Data Profile Overview

The following report is a compilation of existing health data, also known as "secondary data," for Anne Arundel County. Data presented in this CHNA report were compiled from a variety of local, state and national sources. Population and socioeconomic statistics were compiled using data from the U.S. Census Bureau's Population Estimates Program and American Community Survey 1-Year and 5-Year estimates. Trends in birth and mortality were assessed using the birth and death data files obtained from the Maryland Department of Health and Mental Hygiene's (MD DHMH) Vital Statistics Administration. Emergency department and inpatient hospital discharge data files, provided by the Maryland Health Services Cost Review Commission, were used to analyze hospital utilization. Additional data sources for this report included Maryland and U.S. Vital Statistics Annual Reports; MD DHMH Annual Cancer Reports; the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS); the CDC WONDER Online Database; Centers for Medicare and Medicaid Services; and County Health Rankings & Roadmaps. Specific data sources are referenced throughout the report.

When available, state and national comparisons are provided as benchmarks for the Anne Arundel County statistics. Demographic information, such as sex, race, ethnicity and age group, as well as geographic information, such as health outcome by ZIP code, are also presented when accessible. These data provide the context of the social determinants of health that can significantly impact health behaviors and health outcomes in an area.

The most recent data, at the time the report was prepared, were used to determine the health needs of the community; however, limitations existed. Race and ethnicity data were not available for some health indicators, such as health insurance coverage, cancer screening, obesity and tobacco use. Other data were not available at the ZIP code level. Furthermore, rates calculated for ZIP codes with small populations can be statistically unreliable estimates, so they should be interpreted with caution.

Definitions

Crude Rate - The total number of cases or deaths divided by the total population at risk. Crude rate is generally presented as rate per population of 1,000, 10,000 or 100,000. It is not adjusted for the age, race, ethnicity, sex or other characteristics of a population.

Age-Adjusted Rate - A rate that is statistically modified to eliminate the effect of different age distributions in the population over time, or between different populations. It is presented as rate per population of 1,000, 10,000 or 100,000.

Family - Defined as more than one person living together, either as relations or as a married couple.

Frequency - Often denoted by the symbol "n," frequency is the number of occurrences of an event.

Household - Defined as one or more people sharing a residence. Examples include college students sharing an apartment or a single male living alone.

Health Disparity - Differences in health outcomes or health determinants that are observed between different populations. The terms health disparities and health inequalities are often used interchangeably.

Incidence Rate - A measure of the frequency with which an event, such as a new case of illness, occurs in a population over a period of time.

Infant Mortality Rate - Defined as the number of infant deaths per 1,000 live births per year. Infant is defined as being less than one year of age.

Prevalence Rate - The proportion of persons in a population who have a particular disease or attribute at a specified point in time (point prevalence) or over a specified period of time (period prevalence).

White - A person having origins in any of the original peoples of Europe, the Middle East or North Africa.

Black or African American - A person having origins in any of the black racial groups of Africa.

Asian - A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand and Vietnam.

American Indian or Alaska Native - A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.

Hispanic or Latino - A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

Demographic and Socioeconomic Statistics

Population

The 2013 estimated population of Anne Arundel County is 556,348. Non-Hispanic whites represent the largest proportion of residents (70.9%), followed by non-Hispanic blacks (15.8%), and non-Hispanic Asians (3.6%). Hispanics (all races) comprise almost seven percent of the county's population. Slightly over half (50.5%) of the population is female, similar to Maryland and the United States. However, Anne Arundel County's racial and ethnic composition is significantly different than Maryland and the United States, as non-Hispanic whites represent over two-thirds of the population versus closer to half in the state and nationwide.

Table 1: Overall Population, Anne Arundel County compared to Maryland and U.S., 2013

2013 Estimates	Anne Arundel County	Maryland	United States
Total Population	556,348	5,938,737	316,497,531
Male	49.5%	48.5%	49.2%
Female	50.5%	51.5%	50.8%

Source: U.S. Census Bureau, Population Estimates Program, 2013

Table 2: Racial Breakdown, Anne Arundel County compared to Maryland and U.S., 2013

	Anne Arundel County	Maryland	United States
White, NH*	70.9%	53.3%	62.6%
Black, NH	15.8%	29.2%	12.4%
Hispanic, Any Race	6.9%	9.0%	17.1%
Asian, NH	3.6%	6.0%	5.1%
American Indian and Alaska Native, NH	0.3%	0.2%	0.7%
Others	2.5%	2.2%	2.1%

Source: U.S. Census Bureau, Population Estimates Program, 2013
*NH = Non-Hispanic

Population Change

According to the U.S. Census, the population increased by 8% in Anne Arundel County between 2004 and 2013, similar to Maryland and the United States during the same time period.

The Hispanic population of Anne Arundel County almost doubled between 2004 and 2013 while, conversely, the non-Hispanic white population declined by 1% during this same time period.

Table 3: Percent Population Change, Anne Arundel County compared to Maryland and U.S., 2004 – 2013

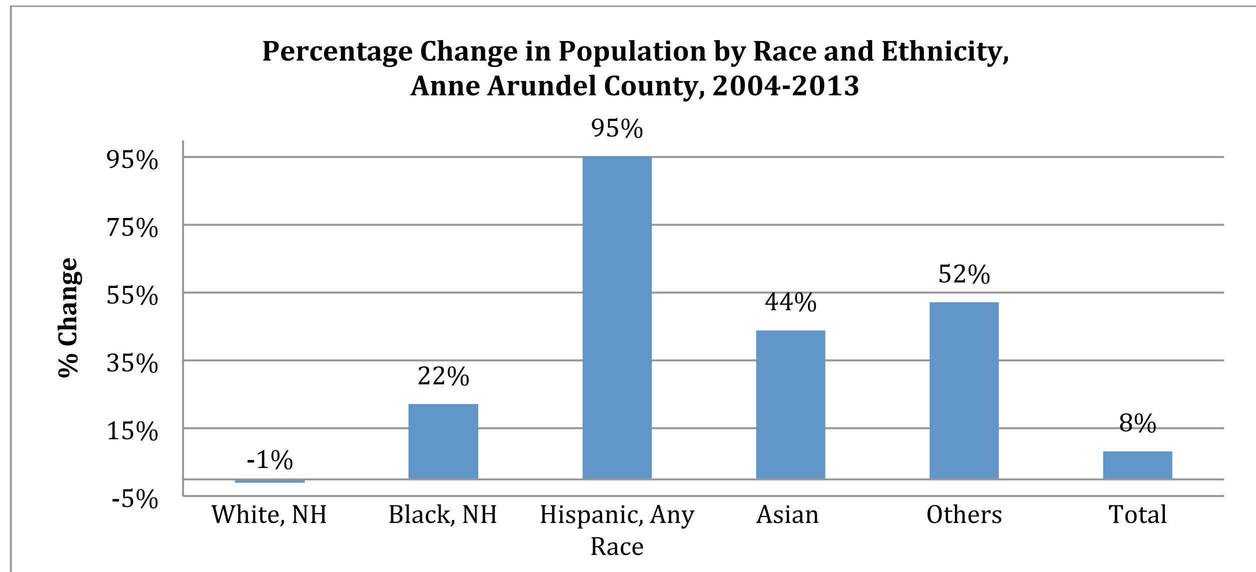
Percent Change in Population, 2004-2013	Anne Arundel County	Maryland	United States
	8%	7%	8%

Source: U.S. Census Bureau, Population Estimates Program, 2004 and 2013

Table 4: Population Change by Race/Ethnicity, Anne Arundel County, 2004-2013

	2004	2013	Difference	% Difference
White, NH	397,640	393,897	- 3,743	-1%
Black, NH	71,683	87,556	15,873	22%
Hispanic, Any Race	19,643	38,330	18,687	95%
Asian, NH	14,083	20,280	6,197	44%
Others	10,210	16,285	6,075	60%
Total	513,259	556,348	43,089	8%

Source: U.S. Census Bureau, Population Estimates Program, 2004 and 2013

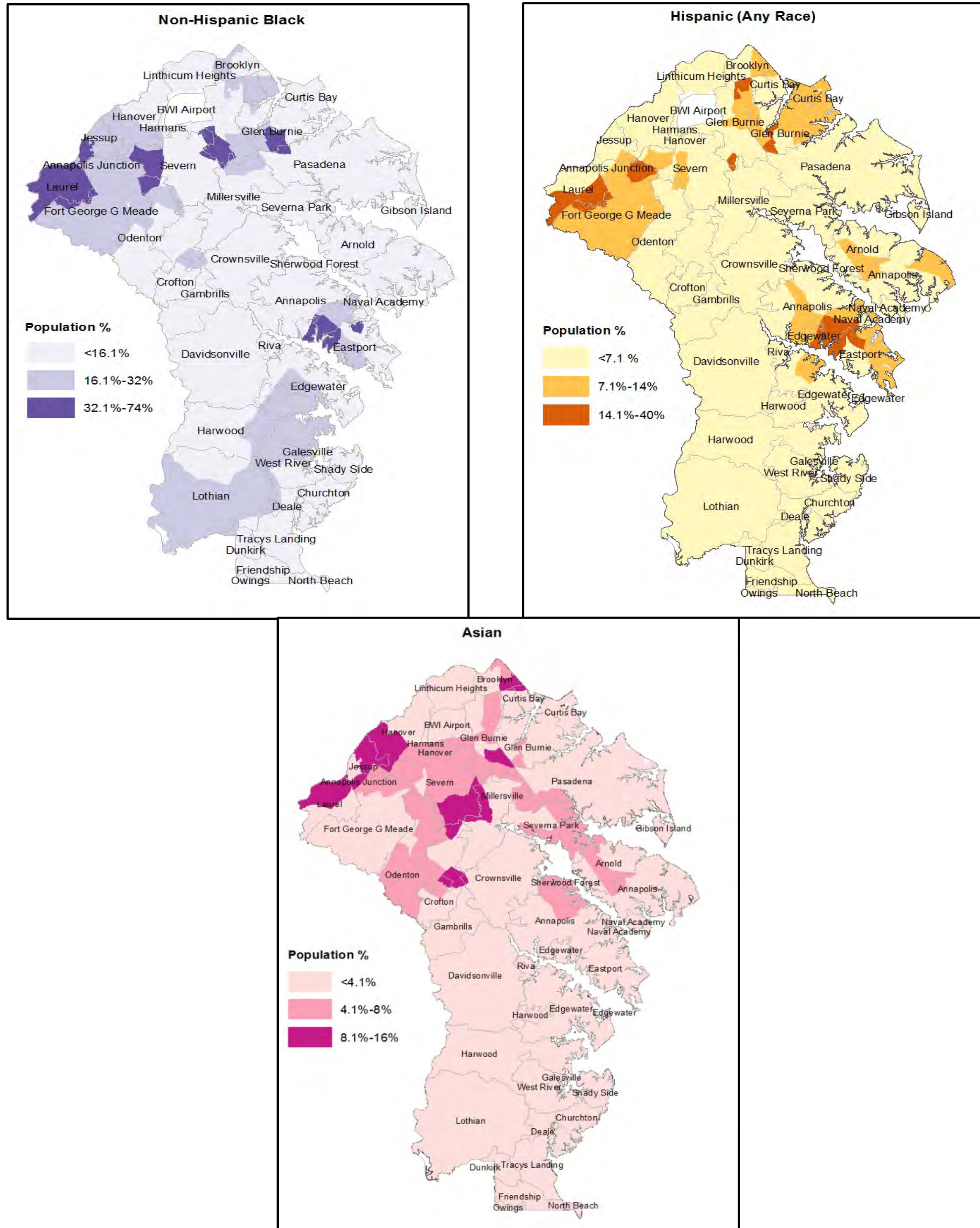


Source: U.S. Census Bureau, Population Estimates Program, 2004 and 2013

In 2004, the Hispanic population represented 3.8% of the total population in Anne Arundel County which increased to 6.9% in 2013. Among Hispanic subgroups, Mexicans ranked as the largest subgroup at 32%, followed by Puerto Ricans at 15%, and Cubans at 2.2% in 2013.

The minority populations (non-Hispanic black, Asian and Hispanic) are concentrated in the northern (Glen Burnie, Brooklyn), western (Odenton, Hanover, Laurel, Severn) and central (Pasadena, Eastport) regions of the county.

Non-Hispanic Black, Asian and Hispanic (of Any Race) Population by Census Tract, Anne Arundel County, 2013



Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

POPULATION BY AGE

The age distribution of Anne Arundel County is similar to Maryland and the United States. The majority of the population (61.8%) is between 20 and 64 years of age and, overall, the county has a slow and sustained growth as the birth rate exceeds the death rate.

The Hispanic population is distinctly younger than the overall population in Anne Arundel County. The median age of Hispanics is the lowest in the county at 26.7 years, compared to non-Hispanic whites with a median age of 42.2 years. Over 12 percent of Hispanics in the county are less than 5 years of age, double the county average of those less than 5 years of age (6.3%). Conversely, only three percent of the Hispanic population is over 65 years of age compared to 13.1% of the county average in the same age group.

Eighty-nine percent of Hispanics under the age of 18 were born in the U.S., while less than half of the Hispanic population over 18 years of age was born in the U.S. (45%).

Table 5: Population by Age, Anne Arundel County Compared to Maryland and U.S., 2013

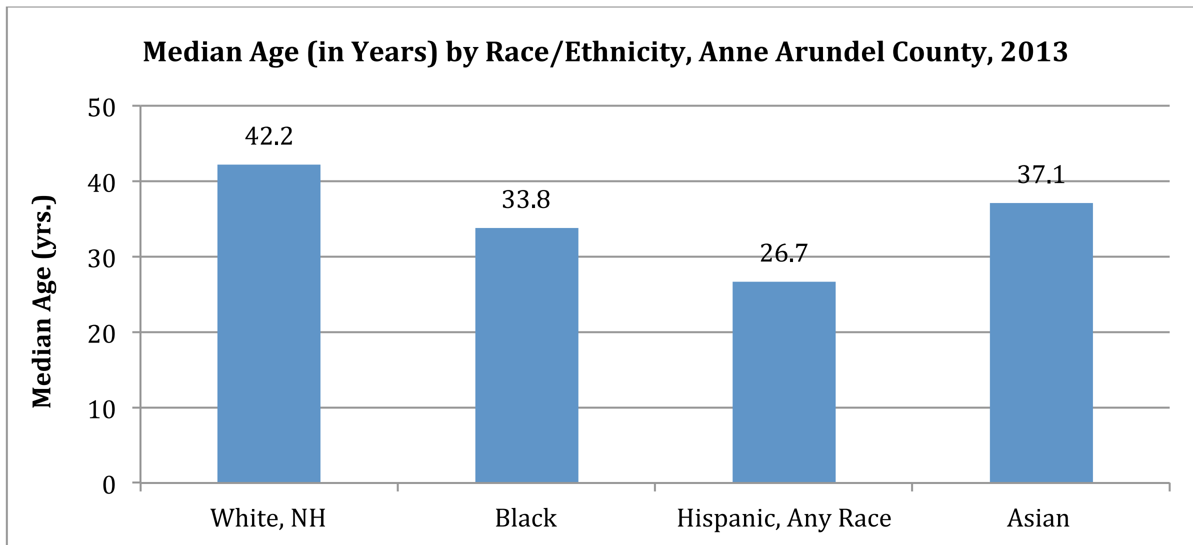
	Anne Arundel County	Maryland	United States
Under 5 Years Old	6.3%	6.2%	6.3%
18 Years and Over	77.2%	77.3%	76.7%
65 Years and Over	13.1%	13.4%	14.1%
Median Age (Years)	38.5	38.0	37.3

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

Table 6: Median Age by Race and Ethnicity, Anne Arundel County, 2013

Race and Ethnicity	Median Age (yrs.)
White, NH	42.2
Black or African American	33.8
Hispanic, Any Race	26.7
Asian	37.1

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

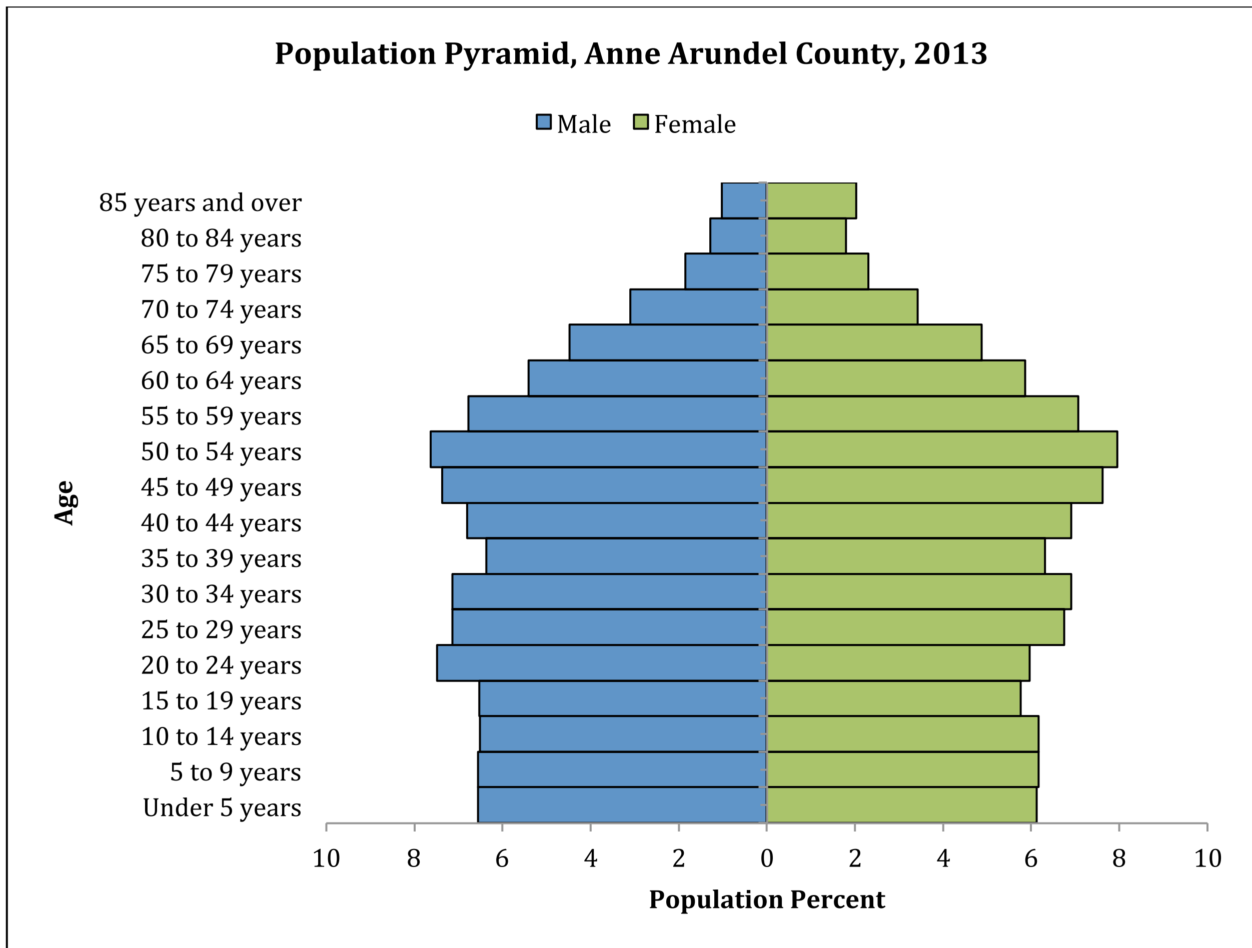


Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

Table 7: Population by Age, Anne Arundel County, 2013

Age Group	Estimated Population	Percent
Under 5 years	35,372	6.3%
5 to 9 years	33,257	6.0%
10 to 14 years	37,019	6.7%
15 to 19 years	33,714	6.1%
20 to 24 years	37,770	6.8%
25 to 34 years	77,525	13.9%
35 to 44 years	73,504	13.2%
45 to 54 years	85,191	15.3%
55 to 59 years	37,648	6.8%
60 to 64 years	32,193	5.8%
65 to 74 years	43,882	7.9%
75 to 84 years	20,439	3.7%
85 years and over	8,229	1.5%

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates



Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

Population 65 Years and Over

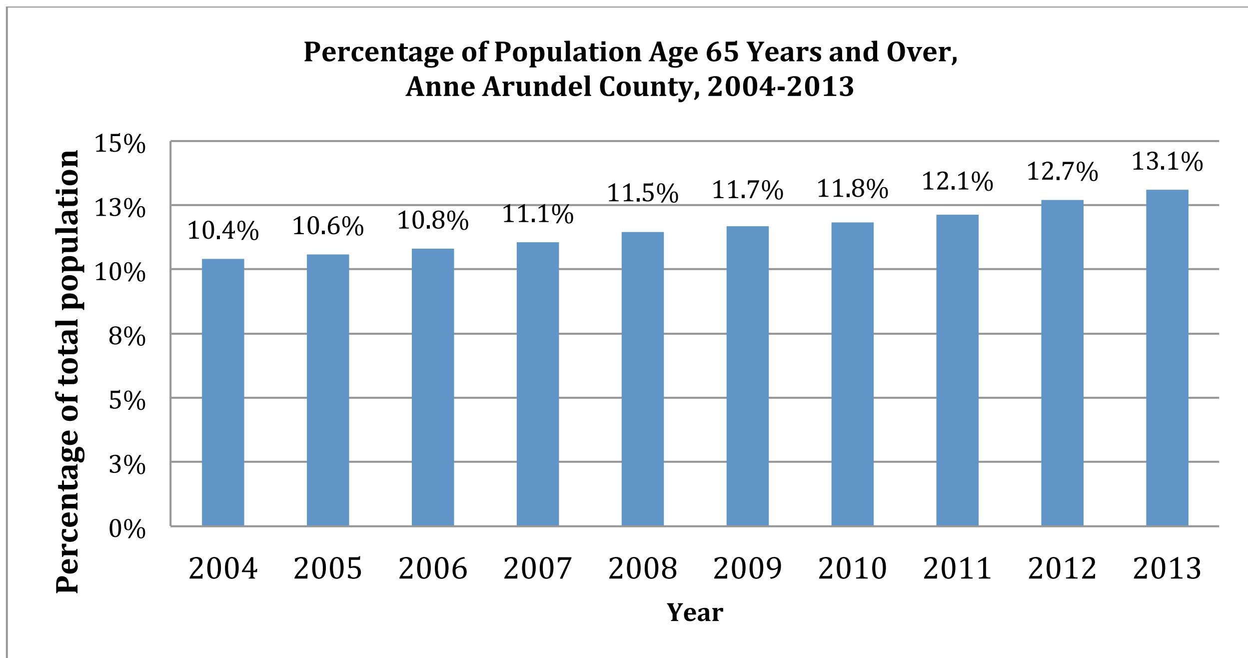
Persons age 65 years and older living in Anne Arundel County account for 13.1% of the total population, and this proportion has steadily increased since 2004. This subset of the population grew from 53,472 in 2004 to 72,850 in 2013. The "Baby Boomers" (those born between 1946 and 1964) started turning 65 in 2011. The number of older people will increase significantly between 2010 and 2030. (The Federal Interagency Forum on Aging-Related Statistics, U.S. Department of Health and Human Services)

The ratio of females to males increases as age increases, most apparent after age 75. The Hispanic population in Anne Arundel County only accounts for 1.6% of this population, again emphasizing the younger composition in this group.

Table 8: Population, 65 Years and Over, Anne Arundel County, 2013

Total Population	72,850
Sex	
Male	44.5%
Female	55.5%
Race and Ethnicity	
White, NH	83.9%
Black or African American	10.0%
Hispanic, Any Race	1.6%
Asian	2.9%
American Indian and Alaska Native	0.3%
Households By Type	
Total Households	43,150
Family households	54.7%
Householder living alone	42.3%
Disability Status	
With any disability	33.3%
No disability	66.7%
Employment Status	
Employed	20.3%
Not in labor force	78.9%
Poverty Status	
Below 100 percent of the poverty level	5.5%

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates; U.S. Census Bureau, Population Estimates Program, 2013



Source: U.S. Census Bureau, Population Estimates Program, 2004-2013

Languages Spoken in the Home

Approximately 10.6 % of county residents speak a language other than English at home. Spanish speakers represent 5.1% of the population, followed by 2.6% Indo-European language speakers and 2.4% Asian or Pacific Islander language speakers. The inability to speak and read English creates barriers to health care access, provider communications and health literacy/education.

Table 9: Language Spoken at Home, 5 Years Old and Older, Anne Arundel County, 2013

Language Spoken at Home	Estimated Population	Percent
Population 5 years and over	509,623	-
English only	455,763	89.4%
Language other than English	53,860	10.6%
Speak English less than "very well"	19,094	3.7%
Spanish	25,880	5.1%
Speak English less than "very well"	11,271	2.2%
Other Indo-European languages	13,023	2.6%
Speak English less than "very well"	2,846	0.6%
Asian and Pacific Islander languages	11,984	2.4%
Speak English less than "very well"	4,516	0.9%

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Income and Poverty

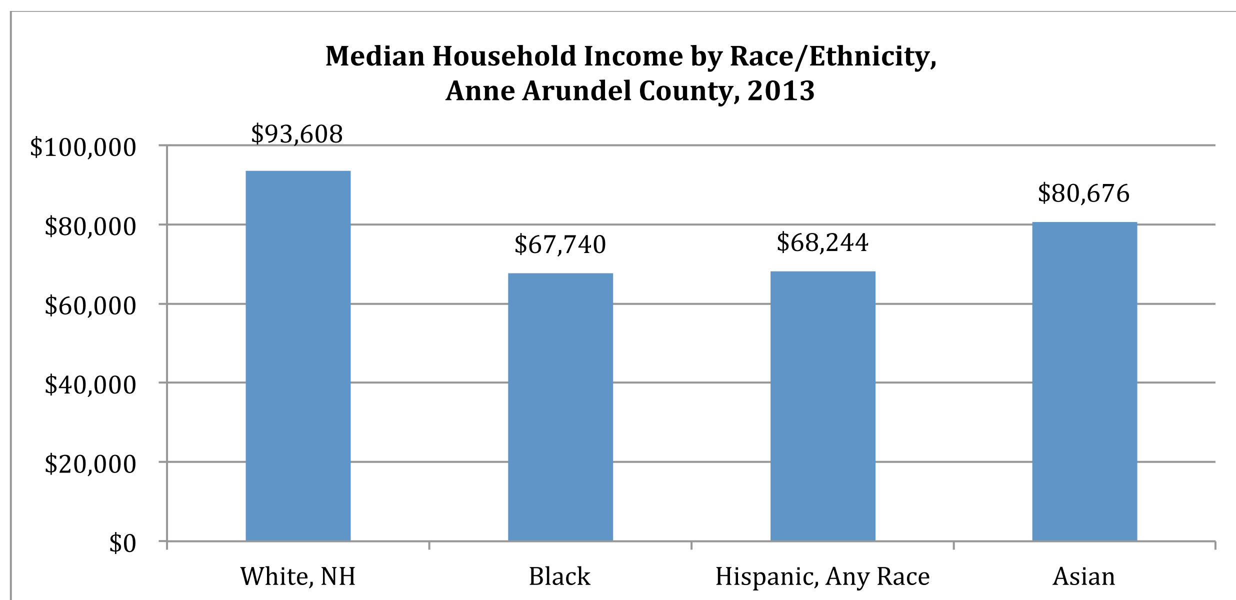
The median household income of Anne Arundel County is higher compared to that of Maryland and the U.S., a statistic driven by the large population of non-Hispanic whites with a median household income of $93,608. Income disparity, however, is evident in Anne Arundel County as the median incomes of Hispanics ($68,244) and non-Hispanic blacks ($67,740) are considerably lower than white residents.

Table 10: Household and Family Income, Anne Arundel County Compared to Maryland and U.S., 2013

Income And Benefits (In 2013 Inflation-Adjusted Dollars)	United States	Maryland	Anne Arundel County
Median household income ($)	53,046	73,538	87,430
Median family income ($)	64,719	88,738	101,268

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Median Household Income by Race and Ethnicity, Anne Arundel County, 2013



Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

The percentage of families and individuals living below the poverty level in Anne Arundel County is lower than that of Maryland and the U.S. In 2013, 4.3% of families in Anne Arundel County lived below the poverty level, compared to 6.8% of families in Maryland and 11.3% of families in the U.S. However, among families headed by single females, 14.7% lived below the poverty level. Of single-female headed families with children under age 5, almost one quarter lived below the poverty level. Among individuals, 6.3% of residents in the county lived below the poverty level in 2013, compared to 9.8% in Maryland and 15.4% in the U.S.

Similar to the income disparity, the poverty rate in 2013 is markedly higher for blacks (12.7%) and Hispanics (9.4%) than for non-Hispanic whites (4.4%).

Table 11: Families and People Below Poverty in Past 12 Months, Anne Arundel County, Maryland and U.S., 2013

	Anne Arundel County (Percent)	Maryland (Percent)	United States (Percent)
All families	4.3%	6.8%	11.3%
With related children under 18 years	6.5%	10.5%	17.8%
Married couple families	1.9%	2.7%	5.6%
With related children under 18 years	2.3%	3.4%	8.3%
Families with female householder, no husband present	14.7%	19.3%	30.6%
With related children under 18 years	20.4%	25.9%	40.0%
All people	6.3%	9.8%	15.4%
Under 18 years	8.0%	12.9%	21.6%
18 to 64 years	5.8%	9.1%	14.3%
65 years and over	5.5%	7.6%	9.4%

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Table 12: Population Below Poverty by Age, Sex and Race/Ethnicity, Anne Arundel County, 2013

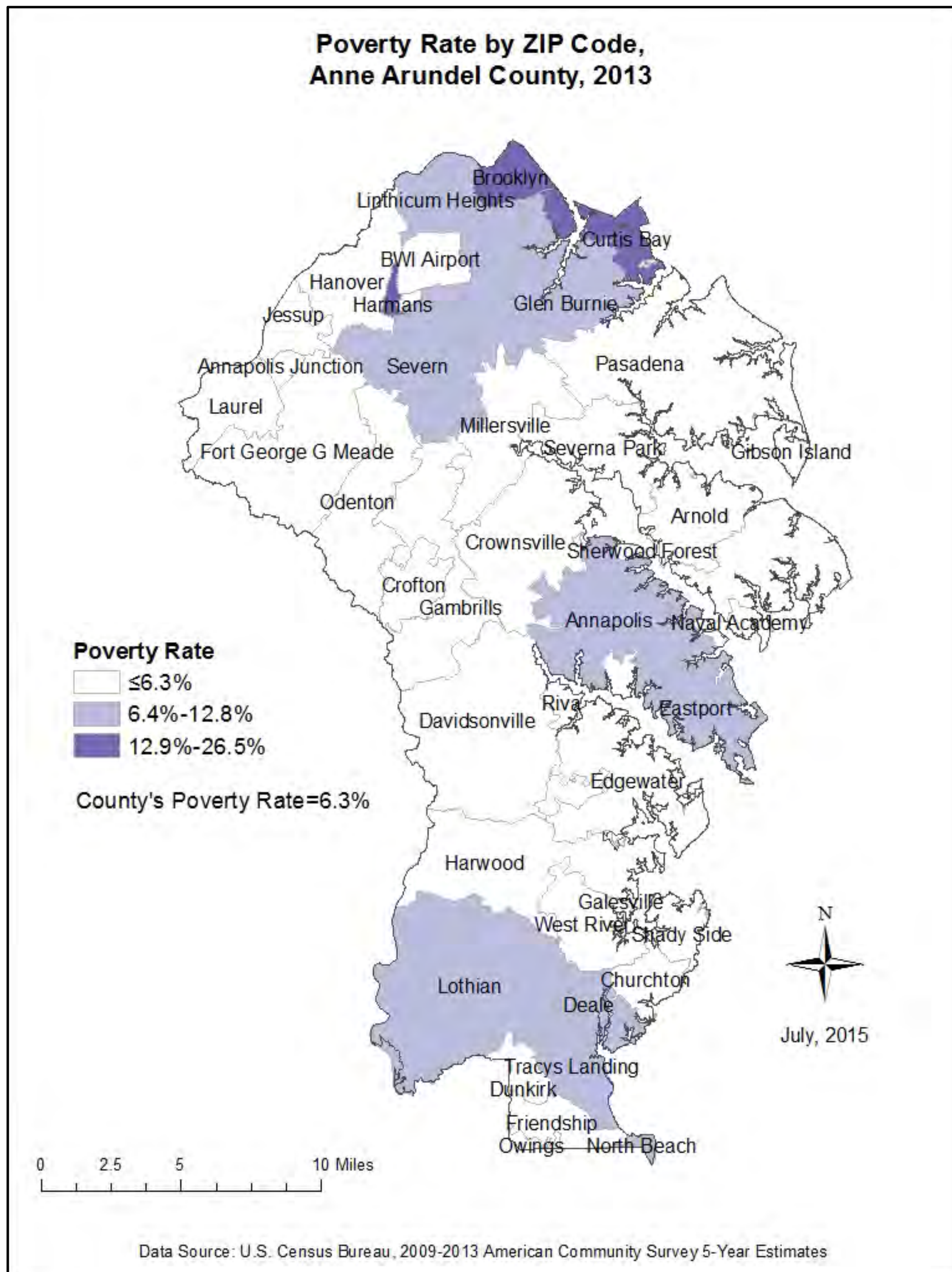
	Below Poverty Level	Percent Below Poverty Level
	33,352	6.3%
Age		
Under 18 years	9,966	8.0%
18 to 64 years	19,765	5.8%
65 years and over	3,621	5.5%
Sex		
Male	14,860	5.8%
Female	18,492	6.8%
Race and Ethnicity		
White, NH	16,701	4.4%
Black or African American	9,997	12.7%
Hispanic, Any Race	3,172	9.4%
Asian	2,092	11.0%

Source: U.S. Census Bureau, 2009- 2013 American Community Survey 5-Year Estimates

Poverty Rate by ZIP Code, Anne Arundel County, 2013

The following ZIP codes have a higher poverty rate than the average rate in the county (in descending order): Brooklyn, Harmans, Curtis Bay, Glen Burnie (21060 and 21061), North Beach, Deale, Severn, Linthicum Heights, Annapolis (21401), Eastport, Lothian and Tracy's Landing (See Table 79).

The poverty rate in Brooklyn is 4.2 times higher than that of the average poverty rate in the county. Curtis Bay and Harmans have poverty rates 2.6 times higher than that of the average poverty rate in the county. Higher poverty rates in these areas correspond with the larger minority populations in these ZIP codes.



Food Stamp/Supplemental Nutrition Assistance Program (SNAP) Benefits

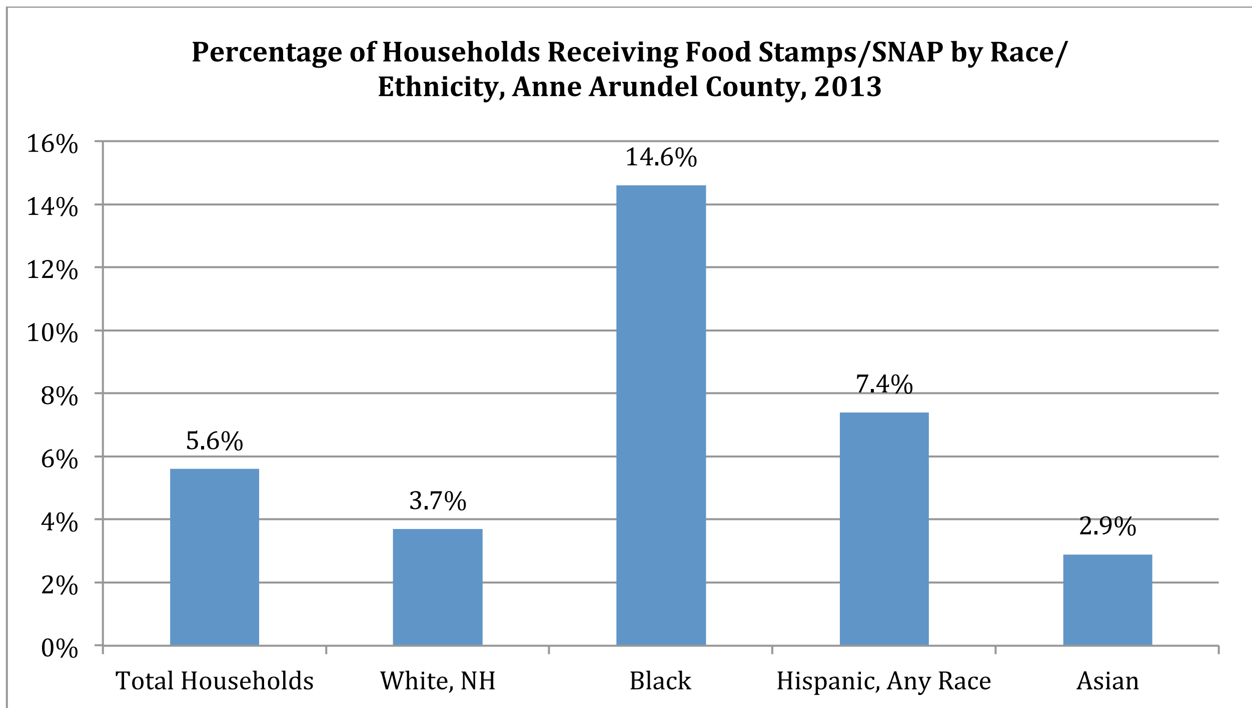
In 2013, Anne Arundel County had a significantly lower percent of households that received Food Stamp/SNAP benefits (5.6%) compared to Maryland (9.5%) and U.S. (12.4%). In Anne Arundel County, approximately 15% of non-Hispanic black households, 7.4% of Hispanic households, 3.7% of non-Hispanic white households and 2.9% of Asian households received SNAP benefits in 2013.

Table 13: Households with Food Stamp/SNAP Benefits, Anne Arundel County Compared to Maryland and U.S., 2013

	Anne Arundel County	Maryland	United States
Food Stamp/SNAP Benefits in the past 12 months	5.6%	9.5%	12.4%

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

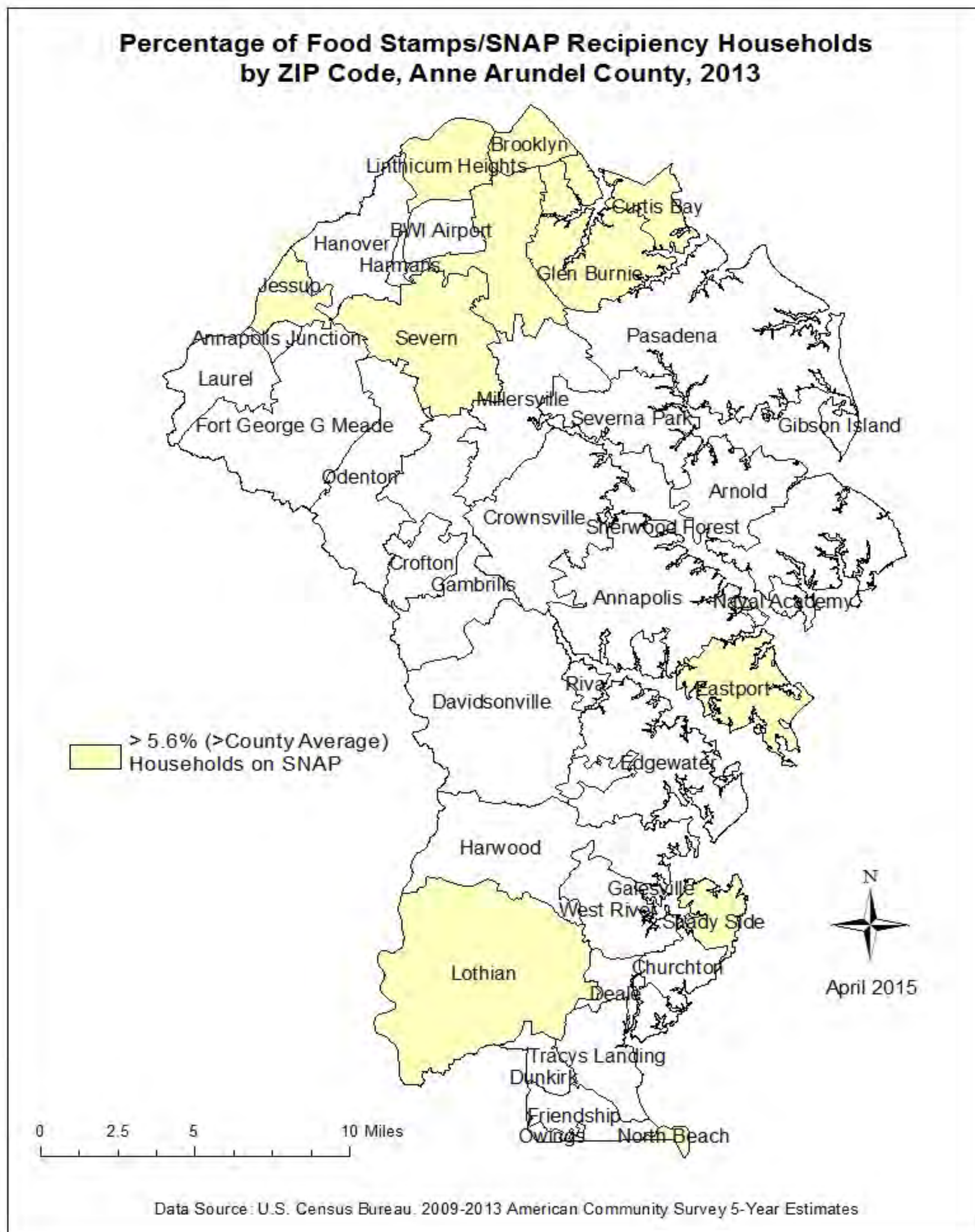
Households Receiving Food Stamps/SNAP by Race and Ethnicity, Anne Arundel County, 2013



Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Households with Food Stamp/SNAP Benefits by ZIP Code, Anne Arundel County, 2013

Brooklyn, Curtis Bay, Lothian, Glen Burnie (21060 and 21061), North Beach, Shady Side, Jessup, Severn, Linthicum Heights and Eastport exceed the average number of households on Food Stamp/SNAP benefits in Anne Arundel County (See Table 80). Overall, 5.6% of households in the county received Food Stamp/SNAP benefits in 2013. Brooklyn (30.9%) has the highest percentage of households on food stamp or SNAP benefits followed by Curtis Bay (22%). As previously noted, these areas also have the highest poverty rates in the county.

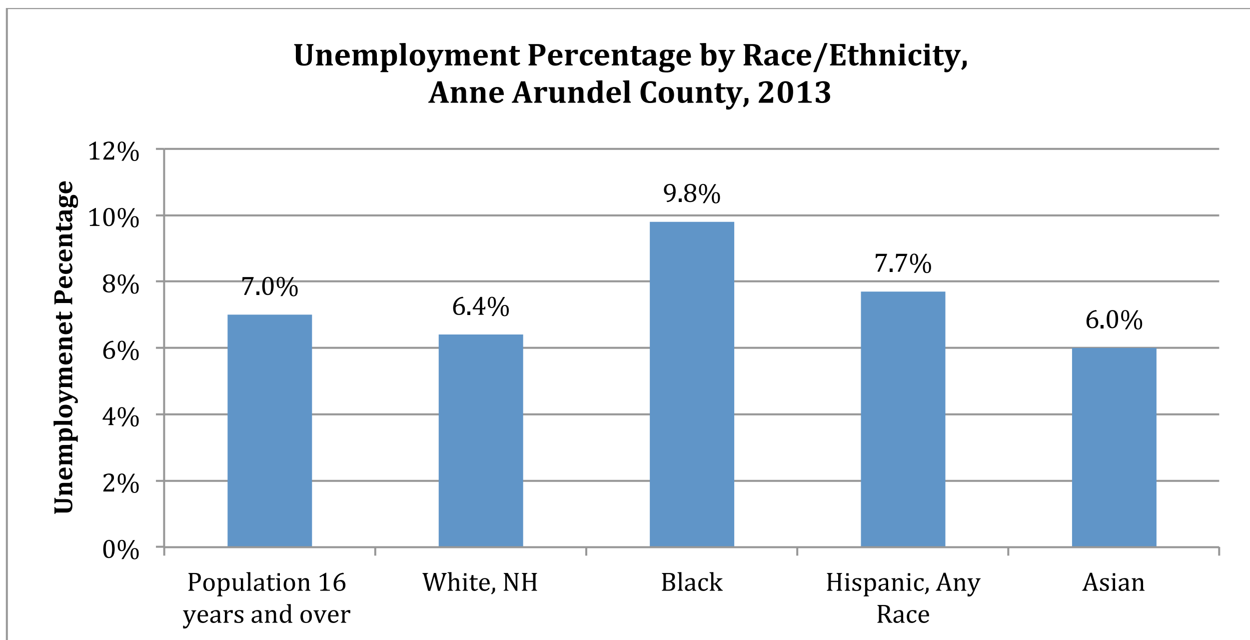


Employment

Unemployment limits the ability to acquire or access resources such as healthy food, safe housing, adequate clothing, reliable transportation and continuous coordinated health care. There is a well-established association between unemployment and poor physical and mental health. Unemployed persons tend to have higher annual illness rates, lack health insurance, lack access to health care and have an increased risk for death. (CDC Health Disparities and Inequalities Report, United States, 2013)

In 2013, 7% of Anne Arundel County residents were unemployed, ranging from 9.8% for the non-Hispanic black population to 6.0% for the Asian population.

Unemployment Status, Anne Arundel County, 2013



Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Education

Paralleling the larger median income in Anne Arundel County, education levels are also considerably higher compared to the education levels of Maryland and U.S. residents. Nearly 91% of Anne Arundel County residents aged 25 years and over have achieved at least a high school education or higher, compared to 88.7% in Maryland and 86% in the U.S. At the post-high school level, 37.1% of residents have attained at least a bachelor's degree, compared to 36.8% in Maryland and 28.8% in the U.S.

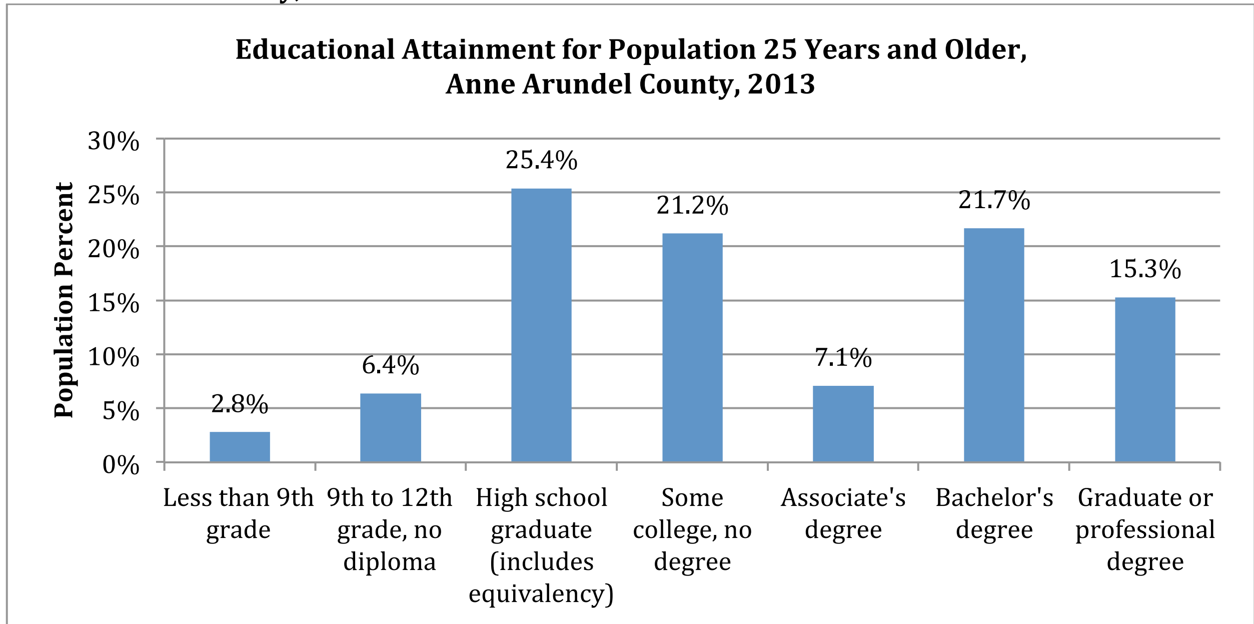
Even though educational attainment is high for most in the county, there is a disparity when stratifying by ethnicity. While about 90% of non-Hispanic whites, blacks and Asians ages 25 and older have a high school diploma (or equivalency) in 2013, only 67% of Hispanics have achieved the same degree.

Table 14: Educational Attainment Percentages for Population 25 Years and Older, Anne Arundel Compared to Maryland and U.S., 2013

Educational Attainment	Anne Arundel County	Maryland	United States
High school graduate or higher	90.7%	88.7%	86.0%
Bachelor's degree or higher	37.1%	36.8%	28.8%

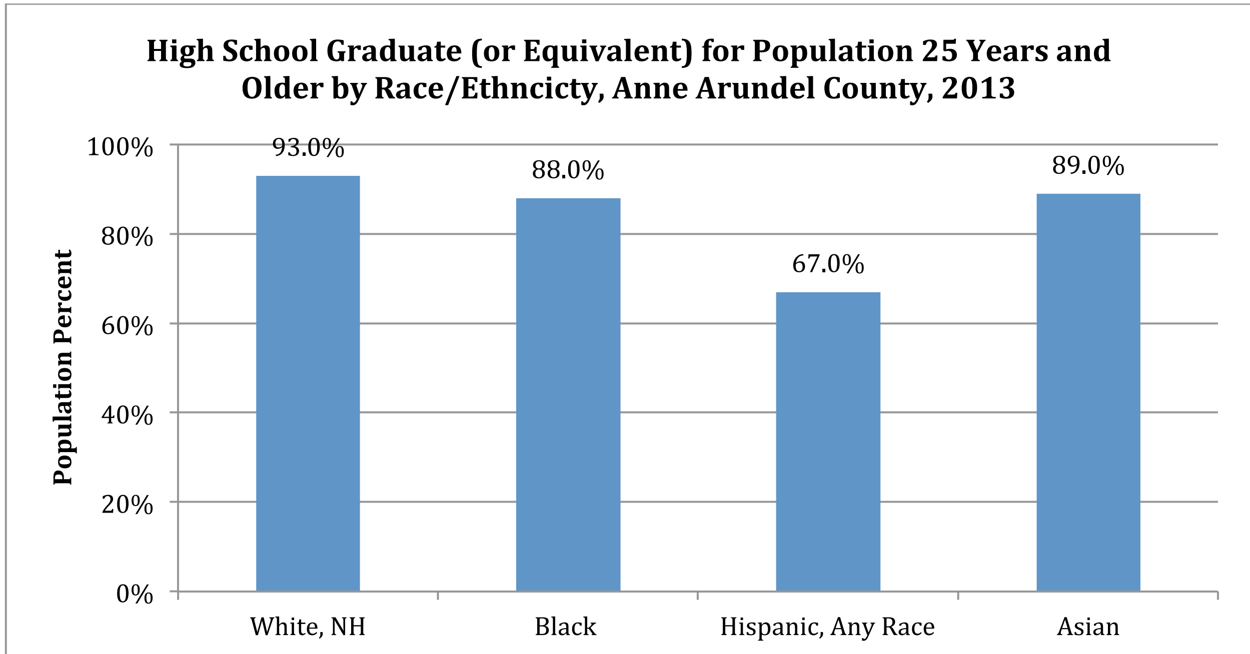
Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Educational Attainment Percentages for Population 25 Years and Older, Anne Arundel County, 2013



Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

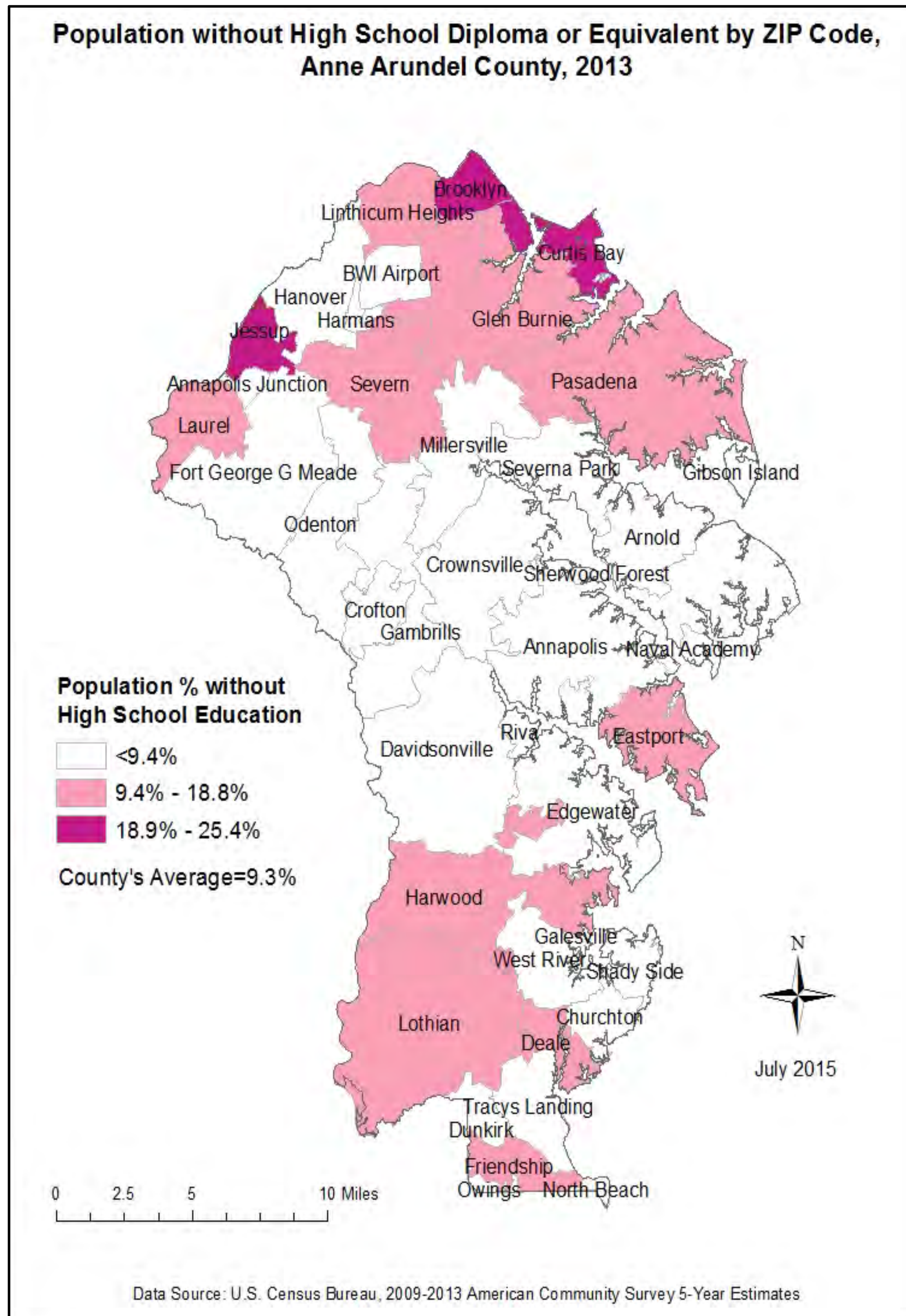
High School Graduate (Includes Equivalency) for Population 25 Years and Older by Race/Ethnicity, Anne Arundel County, 2013



Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Population without High School or Equivalent Education by ZIP Code, Anne Arundel County, 2013

The following ZIP codes have a higher proportion of the population without a high school or equivalent education compared to the county average (in descending order): Jessup, Brooklyn, Curtis Bay, Glen Burnie (21060 and 21061), Deale, Lothian, Friendship, Linthicum Heights, Laurel, Severn, Harwood, Pasadena and Eastport areas (See Table 81).



Health Insurance

Health insurance coverage has a significant influence on health outcomes. The proportion of residents without health insurance decreased from 8.4% in 2008-2010 to approximately 6.6% in 2013. As expected, the largest proportion of uninsured individuals are between the ages of 18 and 64 years (9.1%), as public insurance programs exist for children under age 18 and adults over the age of 65 (Medicare). Over one-fifth of the Hispanic population in Anne Arundel County is uninsured, well eclipsing the uninsured rates of other races and ethnicities, especially non-Hispanic whites (4.7%). Similarly, 23.2% of foreign-born residents were uninsured in 2013, compared to only 5.1% of native-born residents.

Table 15: Population without Health Insurance Coverage, Anne Arundel County, 2013

	Number Uninsured	Percent Uninsured (among civilian non-institutionalized population)
Uninsured Population	35,298	6.60%
Age		
Under 18 years	4,082	3.20%
18 to 64 years	30,739	9.10%
65 years and older	477	0.70%
Sex		
Male	19,272	7.40%
Female	16,026	5.80%
Race/Ethnicity		
White, NH	17,789	4.70%
Black	6,404	7.70%
Hispanic, Any Race	8,189	22.20%
Asian	1,822	9.00%
Nativity		
Native born	24,782	5.10%
Foreign born	10,516	23.20%

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

Table 16: Population without Health Insurance Coverage by Race/Ethnicity and Age Group, Anne Arundel County, 2013

	White, NH		Black		Hispanic, Any Race		Asian	
Age Group	Number	%	Number	%	Number	%	Number	%
Under 18 years	1,833	2.3%	500	2.2%	1,140	8.6%	133	3.5%
18 to 64 years	15,697	6.5%	5,686	10.6%	7,049	31.4%	1,689	11.8%
65 years and over	259	0.4%	218	3.1%	-	-	-	-

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

The Patient Protection and Affordable Care Act (ACA) began to provide health insurance through Maryland's health insurance exchange/marketplace in 2014. Under the ACA, people whose income is up to 138% of the poverty level are eligible for Medicaid. For people whose income is above 138% but below 400% of the poverty level, the ACA offers subsidies to purchase health insurance coverage. While the 2013 insurance coverage estimates presented in this report will not reflect the effect of ACA at this time, an estimate of potential gains in insurance, based off of the poverty threshold, can be extrapolated.

Out of the 35,298 uninsured Anne Arundel County residents in 2013, 8,942 individuals, whose income was up to 138% of the poverty level, were potentially eligible for Medicaid coverage in 2014 under the ACA. Approximately 15,663 uninsured individuals, whose income was between 138% and 400% of the poverty level, were potentially eligible for purchased subsidized health care insurance in 2014. The remaining 10,041 uninsured individuals, whose income was above 400% of poverty level would have the option to purchase health insurance through the exchange/marketplace. Undocumented persons will continue to be ineligible for Medicaid or other health care insurance.

Table 17: Population without Health Insurance Coverage by Poverty Threshold, Anne Arundel County, 2013

Poverty Threshold	Number Uninsured in 2013	Impact of Affordable Care Act in 2014
Under 1.38 of poverty threshold	8,942	Eligible for Medicaid coverage in 2014 under ACA
1.38 to 3.99 of poverty threshold	15,663	Eligible for subsidized health care insurance in 2014 under ACA
4.00 of poverty threshold and over	10,041	Eligible to purchase health care insurance in 2014 under ACA

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

Medicare

Medicare is a national social health insurance program for people age 65 or older, people under age 65 with certain disabilities, and people of all ages with end-stage renal disease (permanent kidney failure requiring dialysis or a kidney transplant). Most of the population age 65 and older has health insurance through Medicare. As of 2013, there were 75,607 Medicare beneficiaries with Part A and Part B in Anne Arundel County, 82.2% non-Hispanic white, 13.1% non-Hispanic black and 1.3% Hispanic. Almost 11% of Medicare beneficiaries were also eligible for Medicaid in 2013.

Table 18: Medicare Beneficiaries in Anne Arundel County, 2013

Beneficiary Demographic Characteristics	Number or Percentage
Beneficiaries with Part A and Part B	75,607
Fee-for-service Beneficiaries	69,420
Medicare Advantage (MA) Beneficiaries	6,187
Average Age	72 yrs.
Percent Female	56.2%
Percent Male	43.8%
Percent White (Non-Hispanic)	82.2%
Percent Black	13.1%
Percent Hispanic, Any Race	1.3%
Percent Eligible for Medicaid	10.9%

Source: Centers for Medicare and Medicaid Services

Table 19: Medicaid Enrollment by Age, Sex and Race and Ethnicity Anne Arundel County, 2014 (December)

	Medicaid Enrollment
Total Enrollment	84,616
Age	
Under 18 years	37,843
18 to 64 years	43,040
65 years and over	3,733
Sex	
Male	37,186
Female	47,430
Race and Ethnicity	
White, NH	39,793 (47%)
Black, NH	25,193 (30%)
Hispanic, Any Race	6,349 (8%)
Asian	3,829 (5%)

Source: Maryland Department of Health and Mental Hygiene, 2015

Fair Market Rent

Spending a high percentage of household income on rent can create financial hardship, especially for lower-income renters. With a limited income, paying a high rent may not leave enough money for other costs, such as food, transportation and medical expenses. According to the National Low Income Housing Coalition (2014), the median renter's income in Anne Arundel ($54,137) is higher than the state-wide median ($43,254).

Table 20: Fair Market Rent, 2014

	Anne Arundel County	Maryland
Households		
Total Households (2008-2012)	198,761	2,138,806
Renter Households (2008-2012)	50,932	682,334
Percent of total households that are renters (2008-2012)	26%	32%
Fair Market Rent, 2014		
Efficiency	$847	$947
One bedroom	$1,001	$1,061
Two bedroom	$1,252	$1,297
Three bedroom	$1,599	$1,697
Four bedroom	$1,741	$1,979
Income Needed to Afford Fair Market Rent, 2014		
Income needed to afford efficiency	$33,880	$37,872
Income needed to afford 1 bedroom	$40,040	$42,432
Income needed to afford 2 bedroom	$50,080	$51,871
Income needed to afford 3 bedroom	$63,960	$67,870
Income needed to afford 4 bedroom	$69,640	$79,161
Housing Wage for efficiency	$16.29/hr.	$18.21/hr.
Housing Wage for 1 bedroom	$19.25/hr.	$20.40/hr.
Housing Wage for 2 bedroom	$24.08/hr.	$24.94/hr.
Housing Wage for 3 bedroom	$30.75/hr.	$32.63/hr.
Housing Wage for 4 bedroom	$33.48/hr.	$38.06/hr.
Income of Renter, 2014		
Estimated renter median income	$54,137	$43,254
Estimated mean renter wage	$15.89/hr.	$15.31/hr.
Rent affordable at renter median income	$1,353	$1,081

Source: National Low Income Housing Coalition, 2014

HEALTH STATUS INDICATORS

MORTALITY

Overall, the age-adjusted mortality rate of Anne Arundel County residents is slightly higher than that of Maryland but lower than the national average from 2011 to 2013. Mortality is lowest for Hispanics, perhaps due to the smaller proportion of older individuals in this population. Mortality in non-Hispanic blacks is 14% higher than that of non-Hispanic whites; however, this difference is similarly observed in Maryland (15%) and U.S. (19%) during the same time period.

Table 21: Age-Adjusted Mortality Rates per 100,000 by Race and Ethnicity, 2011-2013

Race and Ethnicity	Anne Arundel County	Maryland	U.S.
White, NH	736.9	708.7	749.0
Black, NH	833.4	817.2	891.1
Hispanic, Any Race	418.1	330.1	538.3
Asian	512.0	352.6	410.0
All Races and Ethnicity	717.2	708.3	735.3

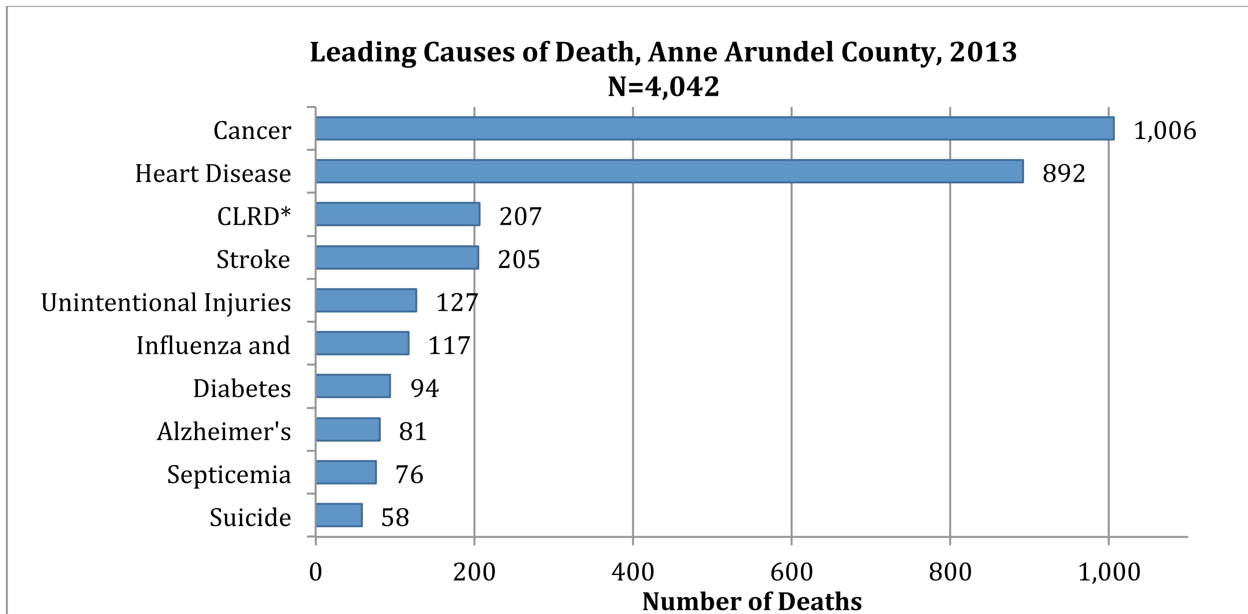
Source: Centers for Disease Control and Prevention; National Center for Health Statistics; CDC WONDER Online Database; Maryland Vital Statistics Annual Report 2013, Maryland Department of Health and Mental Hygiene

In 2013, a total of 4,042 deaths occurred in Anne Arundel County. The two leading causes of death, cancer (1,006) and heart disease (892), accounted for almost half of all deaths.

Of the top ten causes of death among residents, five were associated with preventable risk factors, such as high blood pressure, high cholesterol, obesity, tobacco use and lack of physical activity.

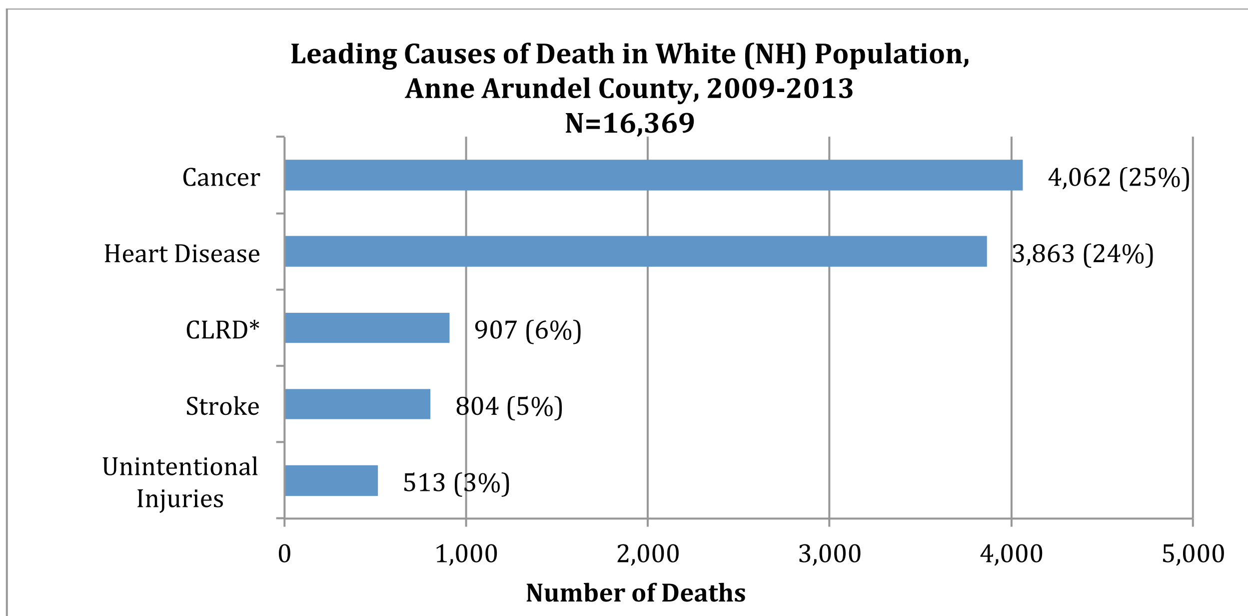
Between 2009 and 2013, cancer and heart disease were the first and second leading causes of death regardless of race and ethnicity designation. Chronic lower respiratory disease ranked third for non-Hispanic whites but was not among the five leading causes of deaths for other racial/ethnic groups examined. Conversely, diabetes ranked as the fourth leading cause of death among non-Hispanic blacks and fifth among Hispanics, but not as a leading cause of death among non-Hispanic whites. Stroke and unintentional injuries ranked among the top five causes of death for all racial/ethnic groups.

Leading Causes of Death, Anne Arundel County

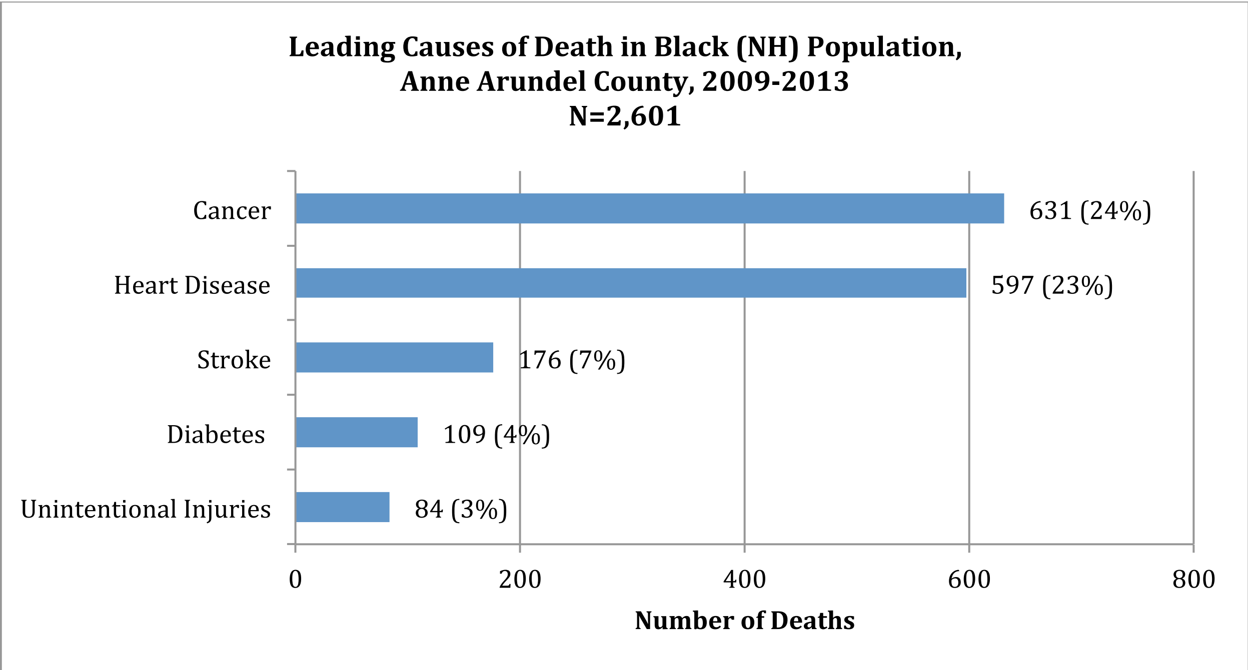


*Chronic lower respiratory diseases (CLRD) include both chronic obstructive pulmonary disease (COPD) and asthma.

Source: Maryland Vital Statistics Annual Report 2013, Maryland Department of Health and Mental Hygiene



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database



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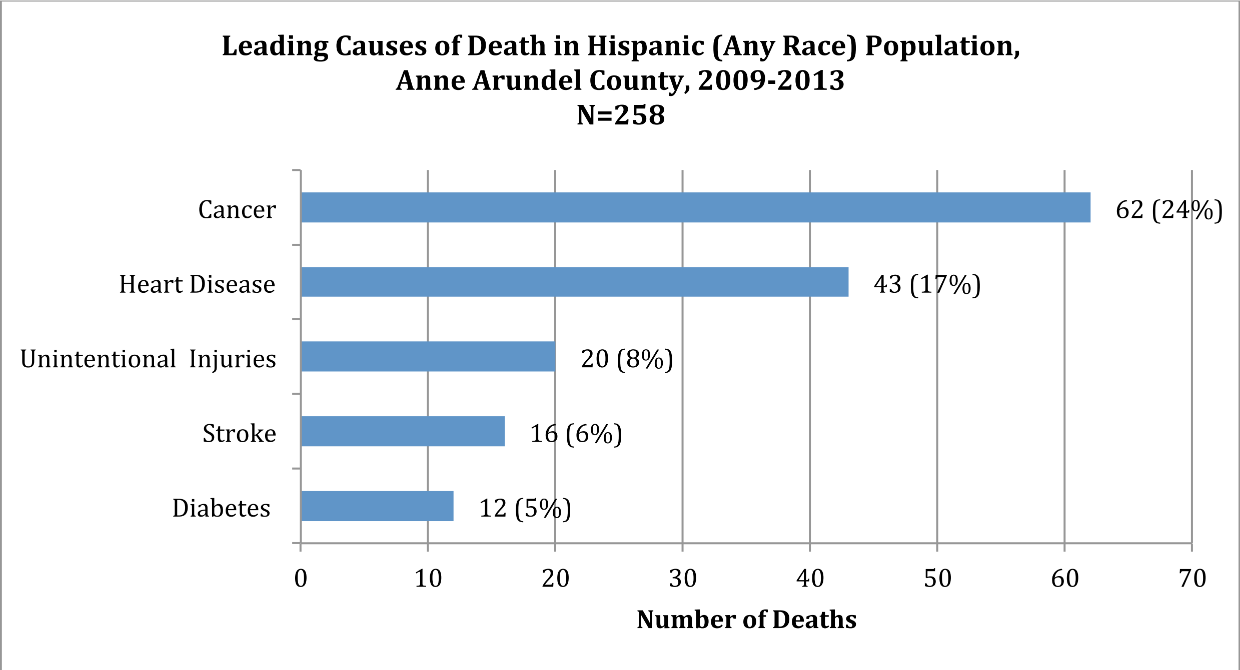

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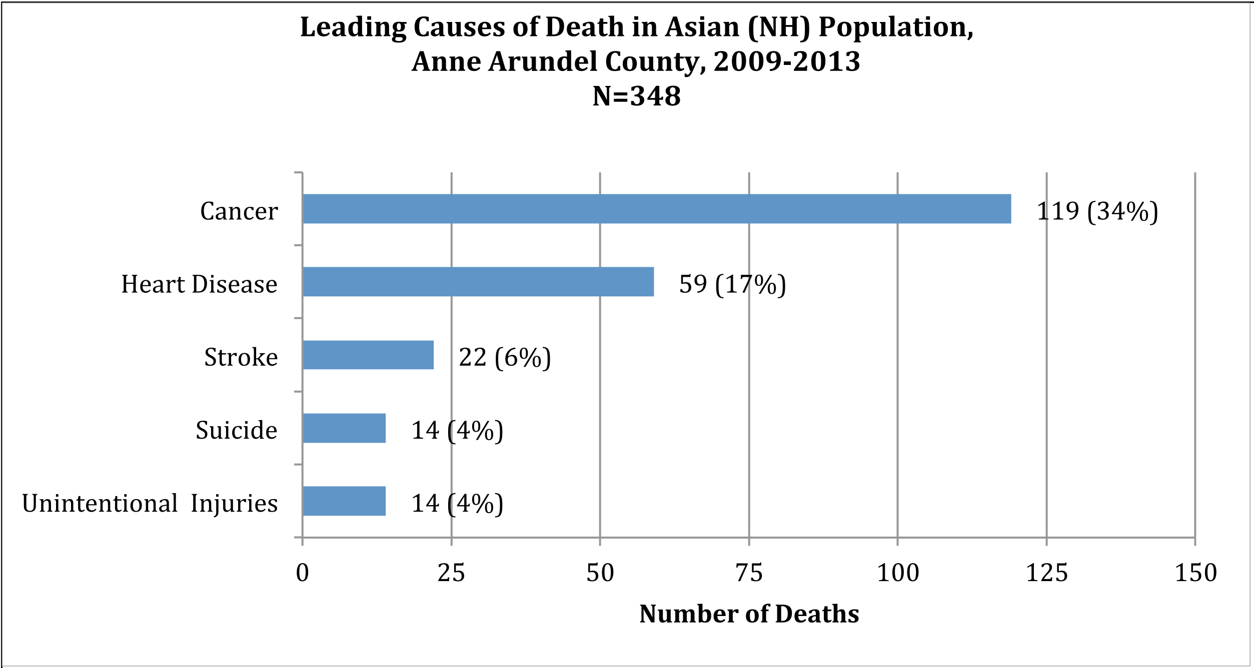


Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Between 2011 and 2013, age-adjusted mortality due to cancer, chronic lower respiratory disease, stroke, diabetes and suicide were higher in Anne Arundel County than in Maryland. Age-adjusted mortality due to coronary heart disease, Alzheimer's and unintentional injuries were higher in Maryland than in the county. Most mortality rates due to the leading causes of death were significantly lower in Anne Arundel County than they were nationwide.

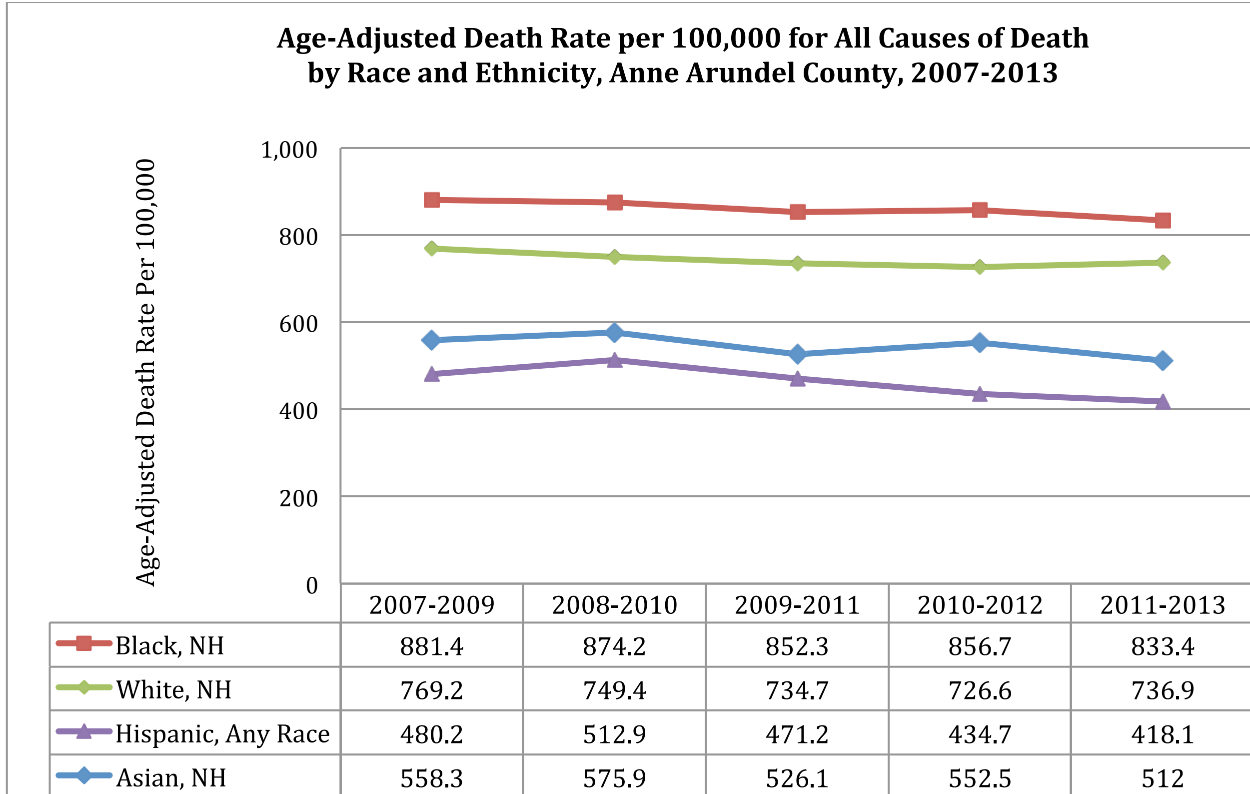
Table 22: Age-Adjusted Mortality Rates by Leading Causes of Deaths per 100,000 Population, 2011-2013

Cause of Death	Anne Arundel County	Maryland	U.S.
All Causes of Death	717.2	708.3	735.3
All Cancer	166.1	163.8	166.2
Coronary Heart Disease	165.0	171.7	171.3
CLRD*	37.6	32.9	42.1
Stroke	37.6	36.5	37.0
Unintentional Injuries	23.9	26.5	39.4
Diabetes	20.2	19.6	21.3
Alzheimer's	13.0	14.6	24.0
Suicide	9.4	9.0	12.6

Source: Maryland Vital Statistics Annual Report 2013, Maryland Department of Health and Mental Hygiene; Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database
* chronic lower respiratory disease

All Causes of Deaths

In Anne Arundel County, between 2007 and 2013, the age-adjusted death rates for all causes of death among all races and ethnicities decreased steadily. Throughout the period, the rate for non-Hispanic blacks was the highest among all racial/ethnic groups followed by non-Hispanic whites, non-Hispanic Asians and Hispanics.

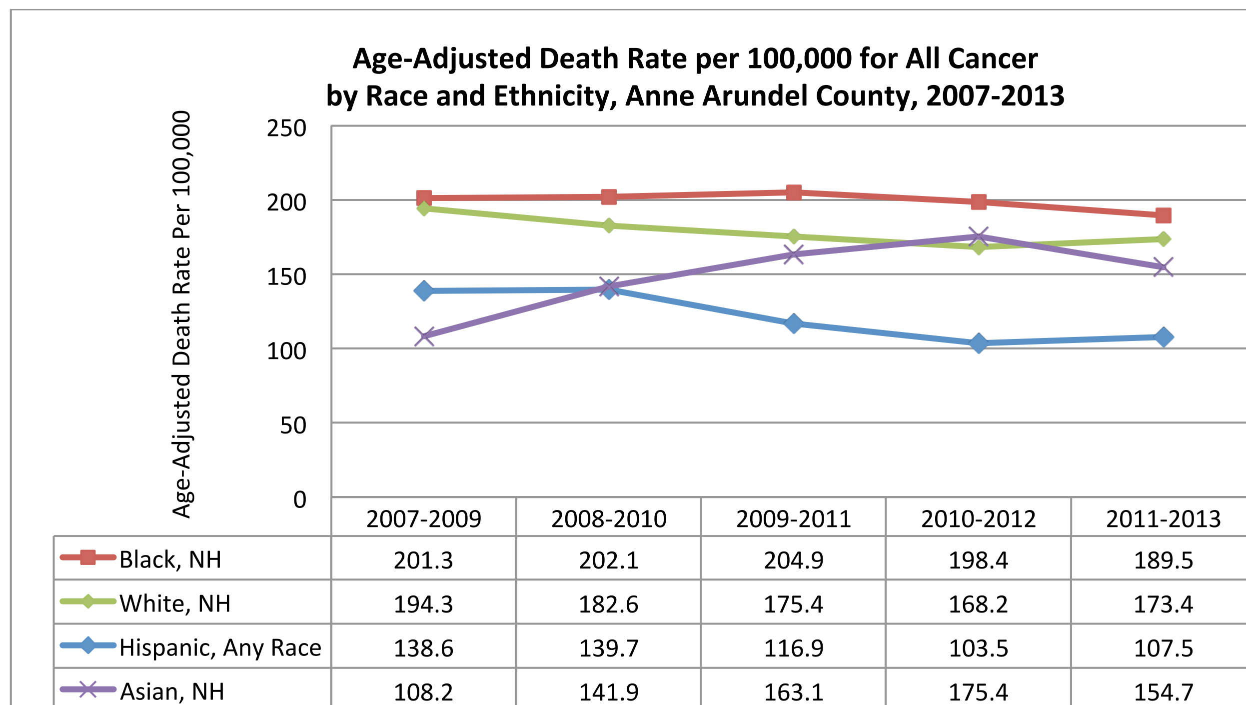


	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	881.4	874.2	852.3	856.7	833.4
White, NH	769.2	749.4	734.7	726.6	736.9
Hispanic, Any Race	480.2	512.9	471.2	434.7	418.1
Asian, NH	558.3	575.9	526.1	552.5	512

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Cancer

In 2013, one quarter of all deaths in Anne Arundel County were from cancer. Between 2007 and 2013, cancer mortality decreased steadily for most races and ethnicities: 22% decline among Hispanics, 11% among non-Hispanic whites and 6% for non-Hispanic blacks. However, it was the opposite trend for non-Hispanic Asians which observed a 43% increase in cancer mortality during that same time period. Even though cancer mortality decreased for non-Hispanic blacks, the rate was consistently higher over time than the other racial/ethnic groups examined.

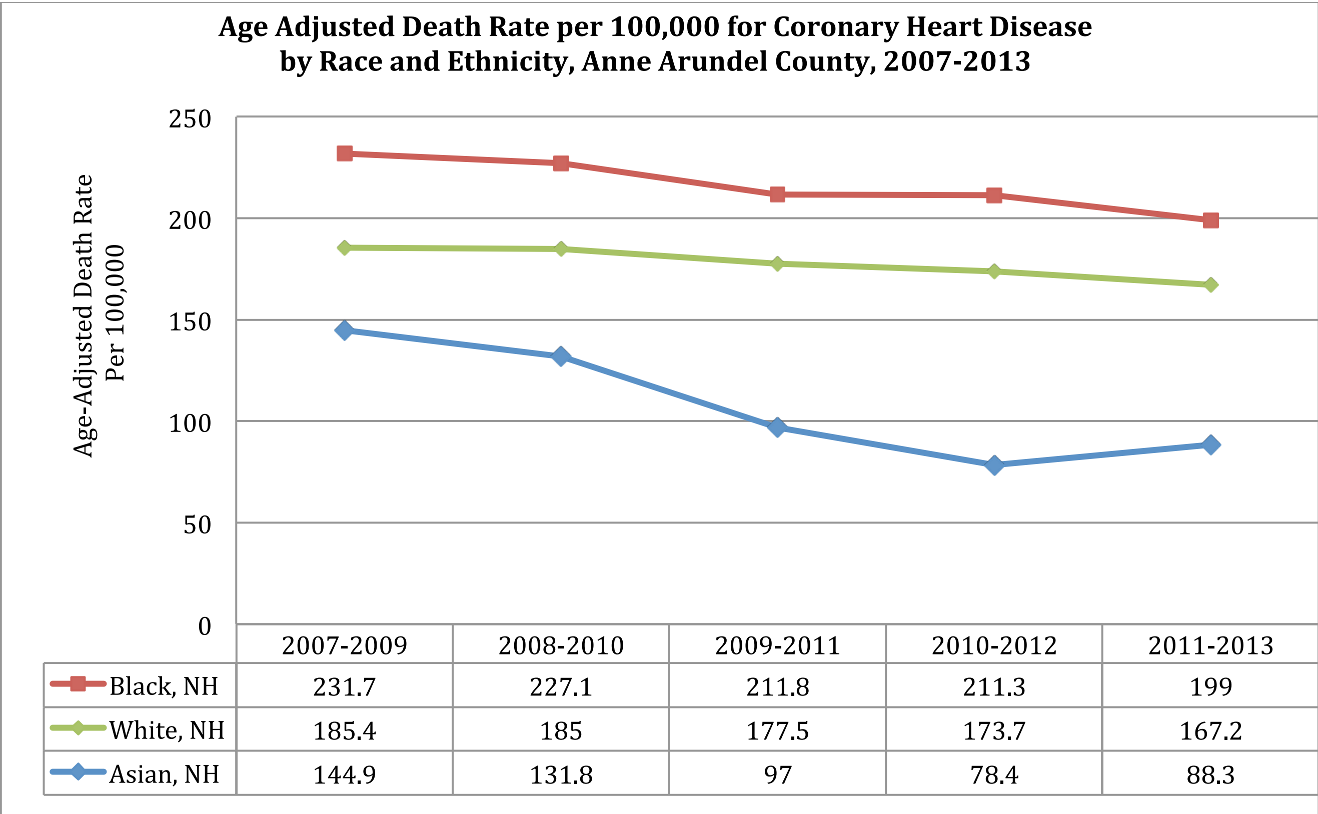


	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	201.3	202.1	204.9	198.4	189.5
White, NH	194.3	182.6	175.4	168.2	173.4
Hispanic, Any Race	138.6	139.7	116.9	103.5	107.5
Asian, NH	108.2	141.9	163.1	175.4	154.7

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Coronary Heart Disease

In 2013, 22% of all deaths in Anne Arundel County were from heart disease. Between 2007 and 2013, mortality due to heart disease decreased for all races examined. Throughout the period, the heart disease mortality rate for non-Hispanic blacks was higher than non-Hispanic whites and non-Hispanic Asians. Non-Hispanic Asians observed a 39% decrease in heart disease mortality, followed by a 14% decline among non-Hispanic blacks and a 10% decline among non-Hispanic whites.

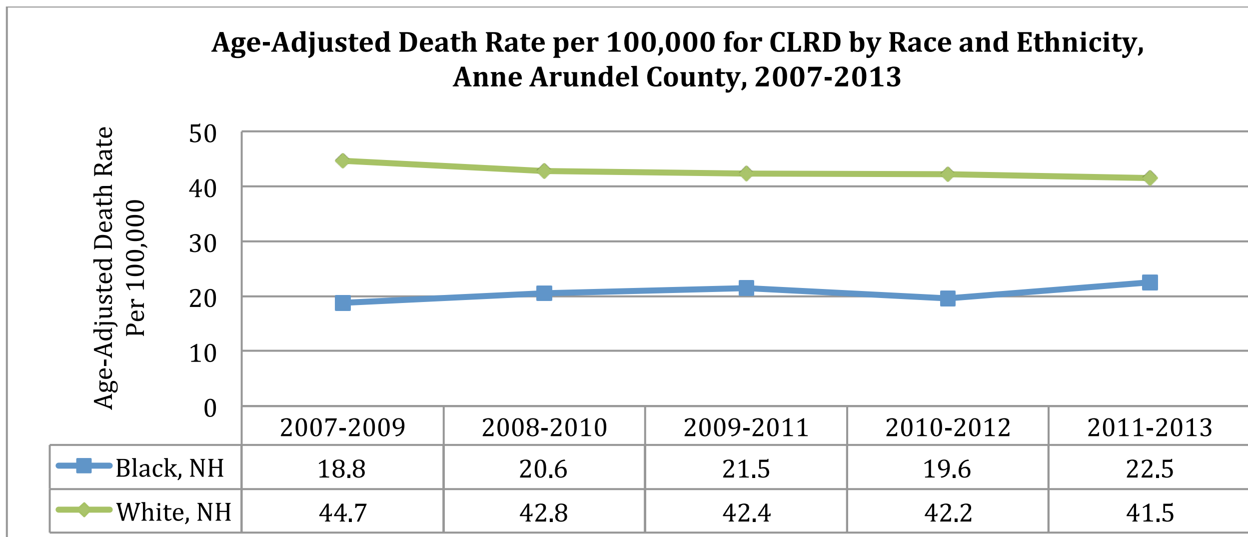


	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	231.7	227.1	211.8	211.3	199
White, NH	185.4	185	177.5	173.7	167.2
Asian, NH	144.9	131.8	97	78.4	88.3

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Chronic Lower Respiratory Disease

Between 2007 and 2013, mortality due to chronic lower respiratory disease remained constant for non-Hispanic whites and non-Hispanic blacks; however, the rate was considerably higher for non-Hispanic whites than non-Hispanic blacks during the same time period. Furthermore, between 2011 and 2013, mortality due to chronic lower respiratory disease was 84% higher for non-Hispanic whites than that for non-Hispanic blacks.

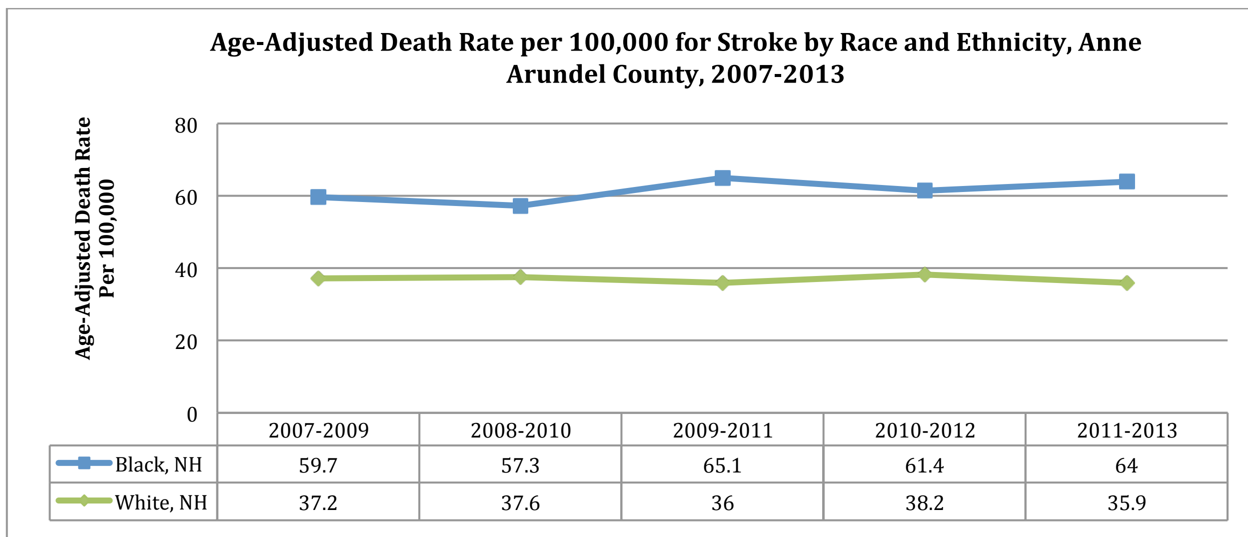


	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	18.8	20.6	21.5	19.6	22.5
White, NH	44.7	42.8	42.4	42.2	41.5

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Stroke

Between 2007 and 2013, mortality rates due to stroke remained consistent for both non-Hispanic whites and non-Hispanic blacks. Throughout the period, the rate for non-Hispanic blacks was higher than non-Hispanic whites; 78% higher between 2011 and 2013 alone.



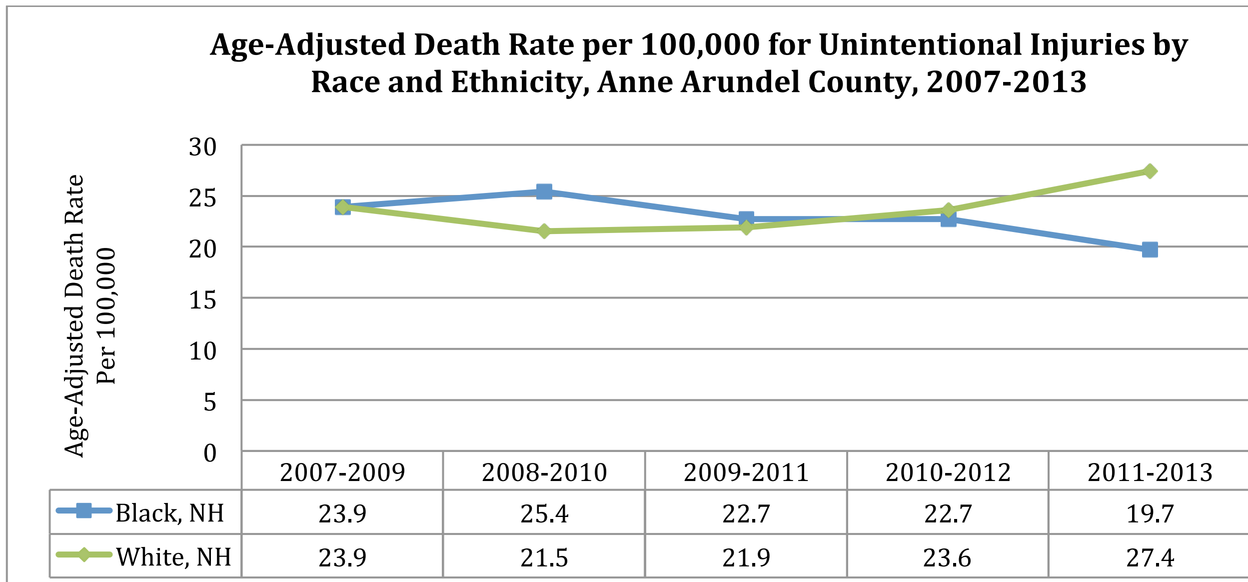
	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	59.7	57.3	65.1	61.4	64
White, NH	37.2	37.6	36	38.2	35.9

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Unintentional Injury

Unintentional injury deaths result from a variety of causes such as motor vehicle accidents, falls, firearms, drowning, suffocations, bites, stings, sports/recreational activities, natural disasters, fires/burns and poisonings. Unintentional injury risks include lack of seatbelt use, lack of motorcycle helmet use, unsafe consumer products, drug and alcohol use (including prescription drug misuse), exposure to occupational hazards, and unsafe home and community environments.

Between 2007 and 2013, mortality due to accidents decreased steadily for non-Hispanic blacks while, conversely, it generally increased during that same time period for non-Hispanic whites. During 2011-2013, mortality due to unintentional injuries for non-Hispanic whites was 39% higher than that for non-Hispanic blacks.

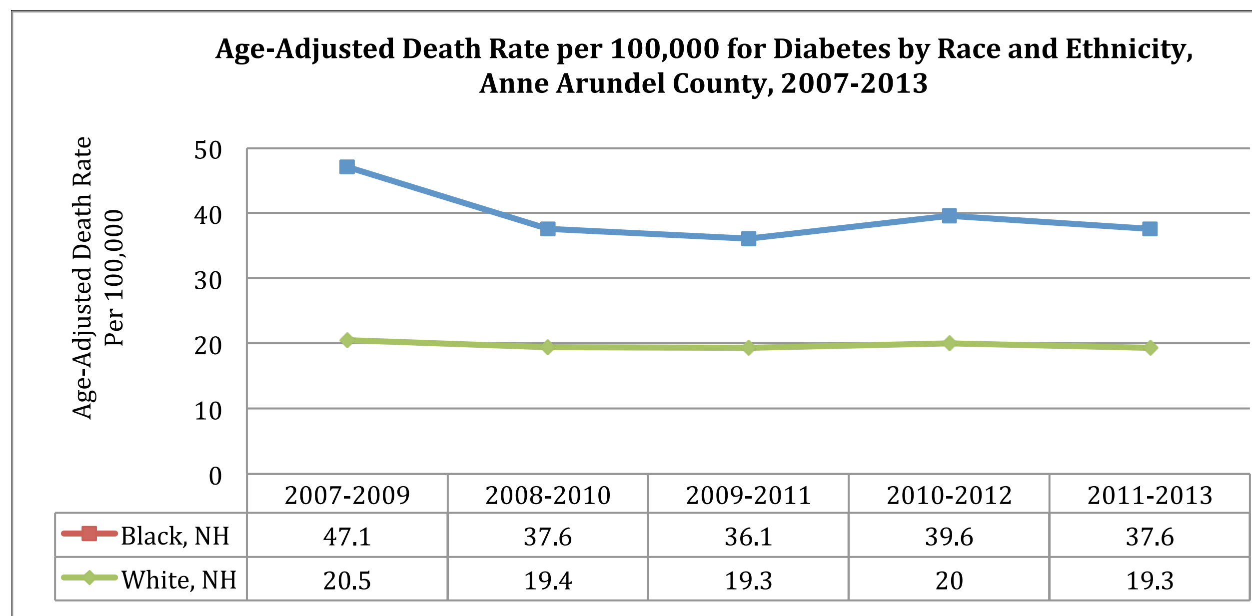


	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013
Black, NH	23.9	25.4	22.7	22.7	19.7
White, NH	23.9	21.5	21.9	23.6	27.4

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Diabetes

Between 2007 and 2013, mortality due to diabetes for non-Hispanic blacks decreased steadily, but remained consistently higher than for non-Hispanic whites. During 2011-2013, the mortality rate for diabetes in non-Hispanic blacks was 94% higher than that in non-Hispanic whites.



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Maternal and Child Health

Birth

In 2013, the live birth rate in Anne Arundel County was 12.3 births per 1,000, similar to the birth rates in both Maryland (12.1 births per 1,000) and the U.S. (12.4 births per 1,000).

Table 23: Live Birth Rate per 1,000 Population, Anne Arundel Compared to Maryland and U.S., 2013

	Anne Arundel	Maryland	United States
Live Births per 1,000 population	12.3	12.1	12.4

Source: Maryland Department of Health and Mental Hygiene, Vital Statistics Administration, 2013; National Center for Health Statistics, National Vital Statistics Report, 2013

In 2013, there were a total of 6,814 births in Anne Arundel County. The highest birth rate was among the Hispanic population at 21.6 births per 1,000 population; followed by non-Hispanic Asian, non-Hispanic black and non-Hispanic white.

Table 24: Number of Births by Race and Ethnicity of the Mother, Anne Arundel County, 2013

Race/Ethnicity	Number of Live Births	Crude Birth Rate per 1,000
White, NH	4399	11.0
Black, NH	1204	13.2
Hispanic, Any Race	827	21.6
Asian, NH	356	17.6
American Indian/Alaska Native	17	1.3

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2013

In 2013, 61% of births in Anne Arundel County were to women 25-34 years old. The county had a slightly higher proportion of women giving birth over the age of 30 as compared to Maryland and the U.S.

Table 25: Number and Percent of Births by Age Group, Anne Arundel Compared to Maryland and U.S., 2013

Age Group	Anne Arundel		Maryland	United States
	Number	Percentage	Percentage	Percentage
<15 years	2	0.03%	0.07%	0.08%
15-17 years	67	1%	1.4%	1.9%
18-19 years	185	2.7%	3.7%	5.0%
20-24 years	1,077	15.8%	18.3%	22.8%
25-29 years	2,026	29.7%	27.9%	28.5%
30-34 years	2,178	31.0%	29.8%	26.4%
35-39 years	1,001	14.7%	14.9%	12.3%
40-44 years	254	3.7%	3.6%	2.8%
45-49 years	19	0.3%	0.3%	0.2%
50+ years	2	0.03%	0.04%	0.02%

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2013; National Center for Health Statistics, National Vital Statistics Report, 2013

Infant Mortality

There were 190 infant deaths between 2010 and 2014 in Anne Arundel County. Deaths are classified as infant deaths if the child dies before his or her first birthday. The infant mortality rate in Anne Arundel County was 5.5 deaths per 1,000 live births; lower than both Maryland (6.6 deaths per 1,000 live births) and the United States (6.0 deaths per 1,000 live births).

Table 26: Infant Mortality Rate, Anne Arundel County, Maryland and U.S., 2010-2014

Infant Mortality Rate per 1,000 births	Anne Arundel	Maryland	United States
	5.5	6.6	6.0

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2013; National Center for Health Statistics, National Vital Statistics Report, 2013

Although the overall infant mortality rate was lower in Anne Arundel County, disparities existed when examined by race and ethnicity. Non-Hispanic blacks had the highest infant mortality rate in the county. Between 2010 and 2014, there were over 68 infant deaths per 1,000 births for non-Hispanic blacks, compared to 5.3 deaths and 4.0 deaths per 1,000 births for Hispanic and non-Hispanic whites respectively.

Table 27: Infant Deaths and Infant Mortality Rates by Race and Ethnicity, Anne Arundel County, 2010-2014

Race/Ethnicity	Number of Infant Deaths	Infant Mortality Rate
White, NH	89	4.0
Black, NH	68	11.2
Hispanic, Any Race	22	5.3

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2013

Low Birthweight

Low birthweight (less than 2,500 grams) is the single most important factor affecting neonatal mortality and a significant determinant of post neonatal mortality. Low birthweight infants who survive are at increased risk for health problems ranging from neurodevelopmental disabilities to respiratory disorders.

The percentage of low birth weight babies born in Anne Arundel County in 2010-2014 (7.9%) was lower than both Maryland and the U.S. but still slightly exceeded the HHS Healthy People 2020 goal of 7.8%.

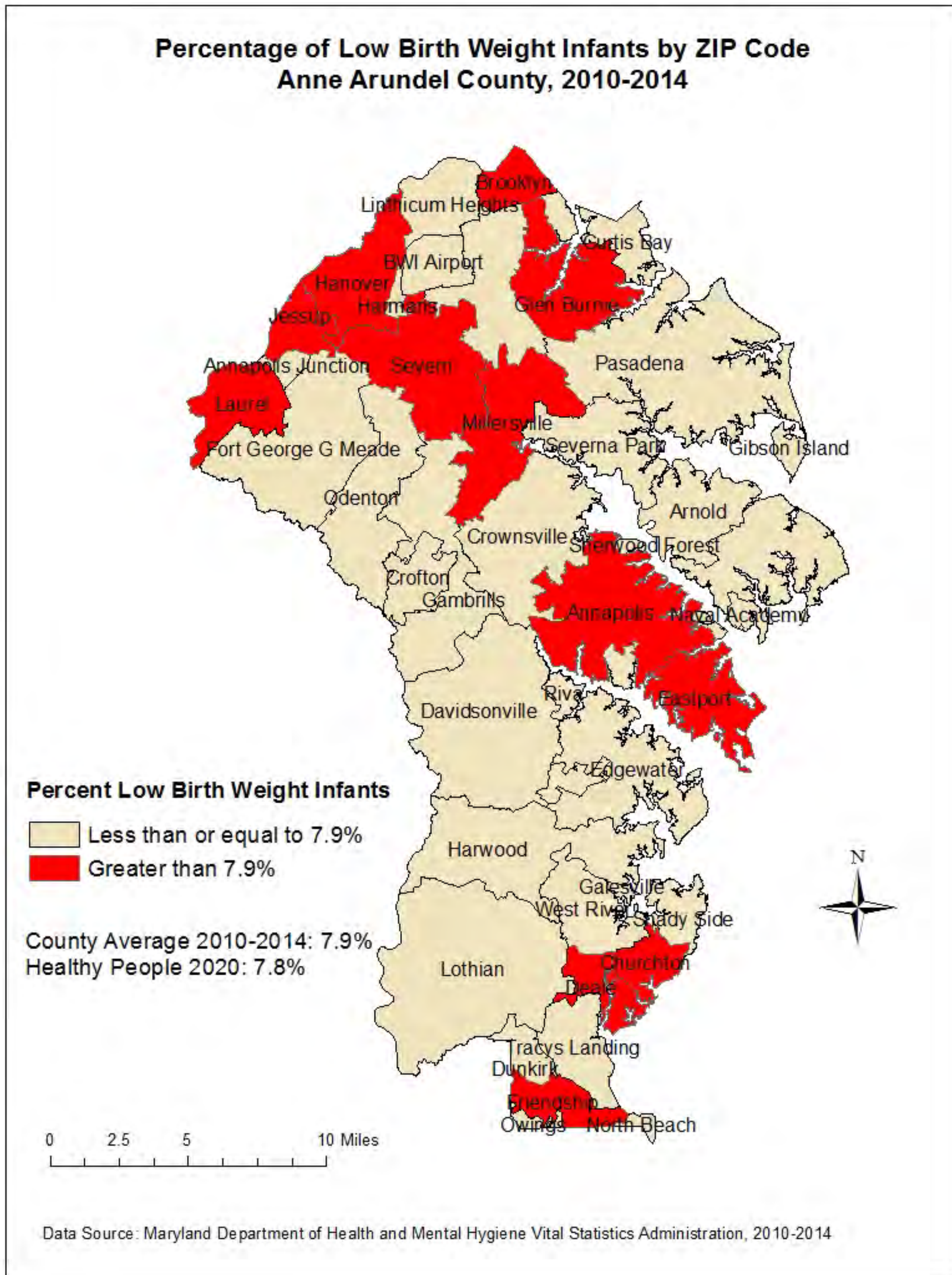
Table 28: Percentage of Low Birth Weight Babies, Anne Arundel Compared to Maryland and U.S., 2010-2014

Percentage of Low Birth Weight (<2500 g) Babies	Anne Arundel	Maryland	United States
	7.9%	8.7%	8.0%

Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2010-2014; National Center for Health Statistics, National Vital Statistics Report, 2010-2014

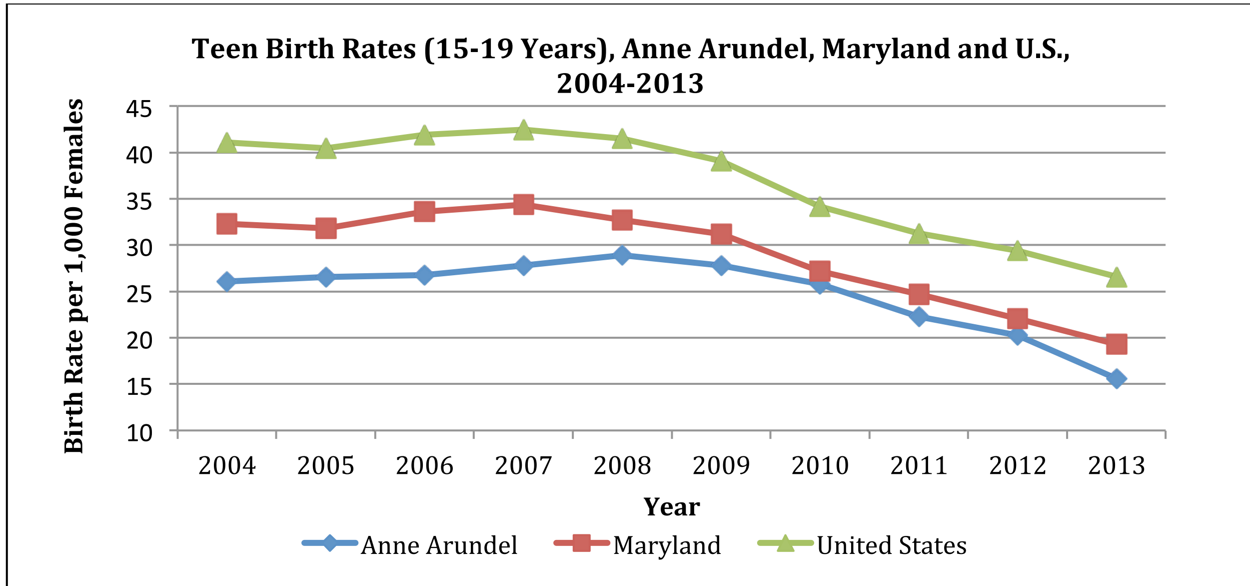
Low Birth Weight Infants by ZIP Code, Anne Arundel County, 2010-2014

Between 2010 and 2014, Brooklyn, Severn, Laurel, Jessup, Churchton, Glen Burnie (21060), Hanover, Millersville, Shady Side, Annapolis, Eastport and Friendship had higher percentages of low birth weight infants born than the county average of 7.9%. Most of these areas are located in the northern part of the county.



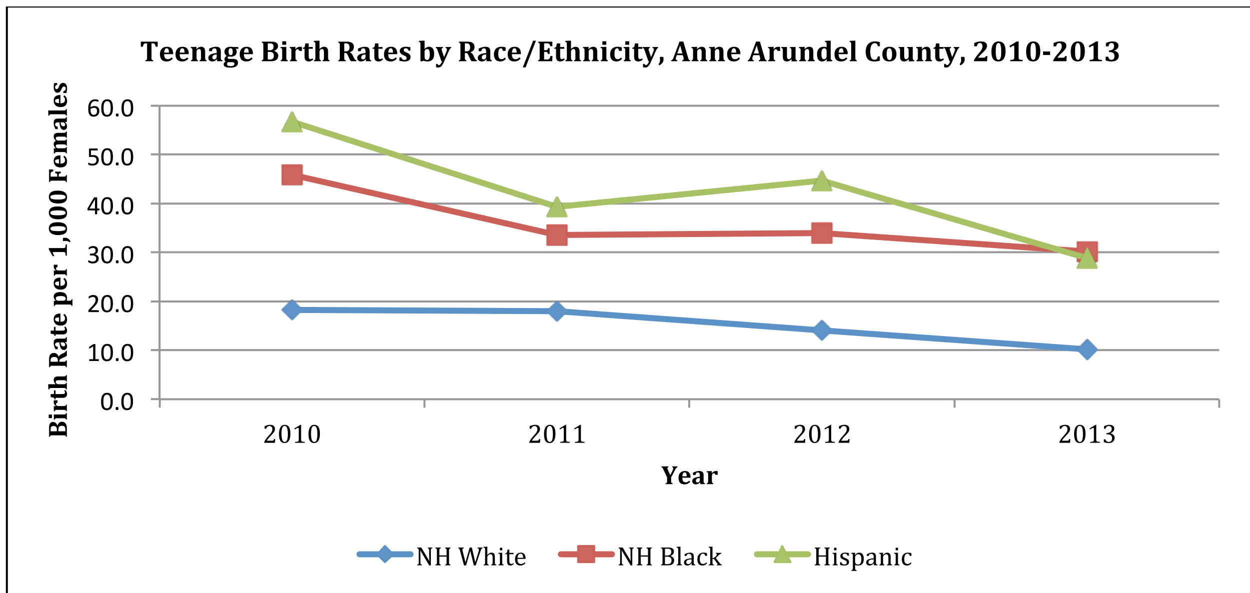
Trends in Teenage Birth Rates, Anne Arundel Compared to Maryland and U.S., 2004-2013

Anne Arundel County has lower teenage birth rates than Maryland and the U.S., however, disparities still exist. In 2013, non-Hispanic black and Hispanic teenagers had three times higher pregnancy rates compared to non-Hispanic white teens in the county. Teenage birth rates have declined steadily over the past ten years in Anne Arundel County, Maryland and the U.S.



Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2004-2013; National Center for Health Statistics, National Vital Statistics Report, 2004-2013

Teenage Birth Rates by Race and Ethnicity, Anne Arundel 2010-2013



Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2004-2013; National Center for Health Statistics, National Vital Statistics Report, 2004-2013
Early and adequate prenatal care and abstinence from tobacco help prevent negative health outcomes. In Anne Arundel County, the proportion of women receiving prenatal care in the first

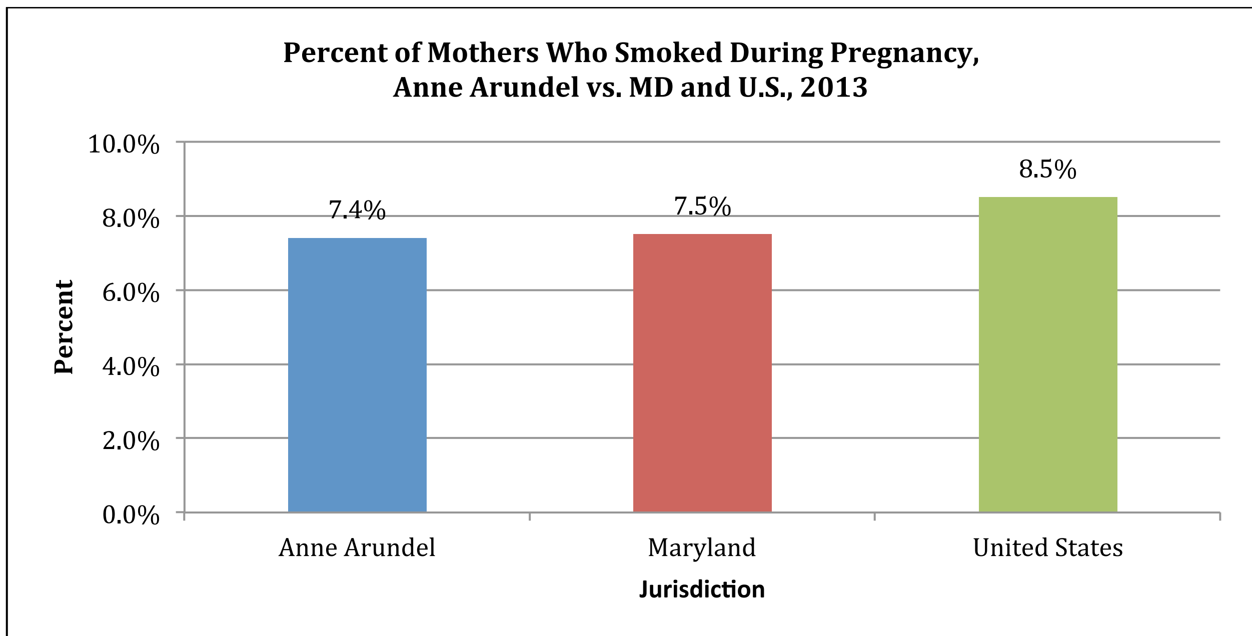
trimester remained relatively unchanged between 2011 and 2013. However, a higher percentage of non-Hispanic white mothers received first trimester prenatal care during that same time period compared to Asian, black and Hispanic mothers.

Table 29: Percent of First Trimester Prenatal Care by Race and Ethnicity, Anne Arundel, 2011-2013

Race/Ethnicity	2011	2012	2013
White, NH	79.9%	75.7%	78.6%
Black, NH	63.7%	64.7%	66.5%
Hispanic, Any Race	63.6%	57.9%	64.1%
Asian, NH	70.3%	68.6%	69.5%

Source: Maryland Department of Health and Mental Hygiene, Vital Statistics Administration, 2013

In 2013, a lower percentage of Anne Arundel County mothers smoked during pregnancy than in Maryland and the U.S. The majority of mothers (92.6%) abstained from smoking during pregnancy in 2013. Anne Arundel County, Maryland and U.S. are still far from the Healthy People 2020 goal of 98.6% of expectant mothers abstaining from smoking during pregnancy.



Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2013; National Center for Health Statistics, National Vital Statistics Report; 2013

Cancer Statistics

Overall, Anne Arundel County has a higher cancer incidence rate compared to Maryland and the U.S. Anne Arundel County has higher incidence rates of female breast cancer, lung and bronchus cancer, melanoma and prostate cancer compared to Maryland and the U.S.

Conversely, the incidence of colorectal cancer is lower in Anne Arundel compared to state and nationwide averages. The incidence rate of cervical cancer in Anne Arundel County is lower than the incidence rate of cervical cancer in the U.S.

Table 30: Cancer Incidence Rates per 100,000 by Site and Gender, Anne Arundel Compared to Maryland and U.S., 2007-2011

Site	Anne Arundel	Maryland	United States
Breast (Female)	129.3	127.8	122.8
Colorectal	35.7	39.3	43.3
Male	39.8	45.1	50.0
Female	32.1	34.8	37.8
Lung and Bronchus	68.7	59.9	64.9
Male	76.5	69.9	78.6
Female	63.0	52.8	54.6
Melanoma	32.4	21.0	19.7
Male	43.2	27.5	25.1
Female	24.0	16.5	15.9
Prostate	151.7	148.7	142.5
Cervical	6.6	6.7	7.8
All Sites	479.2	451.8	467.7

Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014; Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

Overall, cancer mortality is higher in Anne Arundel County compared to Maryland and the U.S. Mortality due to melanoma has historically been an issue in the county. Males have three times higher mortality rate of melanoma than females in the county. The death rate due to lung and bronchus cancer is also higher in Anne Arundel County compared to Maryland and the U.S. Males have a higher mortality rate of lung and bronchus cancer than females in the county.

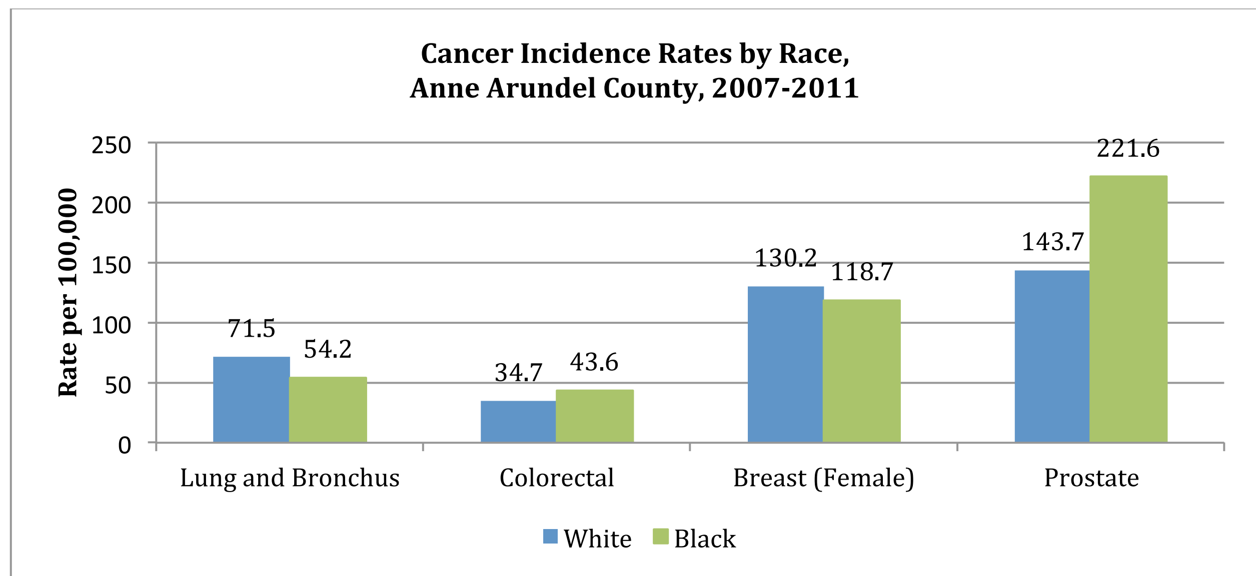
Table 31: Cancer Mortality Rates per 100,000 by Site and Gender, Anne Arundel County Compared to Maryland and U.S., 2007-2011

Site	Anne Arundel	Maryland	United States
Breast (Female)	23.0	24.0	22.2
Colorectal	14.5	16.0	15.9
Male	17.2	20.0	19.1
Female	12.3	13.2	13.5
Lung and Bronchus	55.2	47.7	48.4
Male	65.6	59.5	61.6
Female	47.6	39.4	38.5
Melanoma	3.5	2.6	2.7
Male	6.0	4.1	4.1
Female	1.8	1.6	1.7
Prostate	21.4	24.6	22.3
Cervical	2.2	2.2	2.3
All Sites	183.4	175.8	173.8

Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014; Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER Online Database

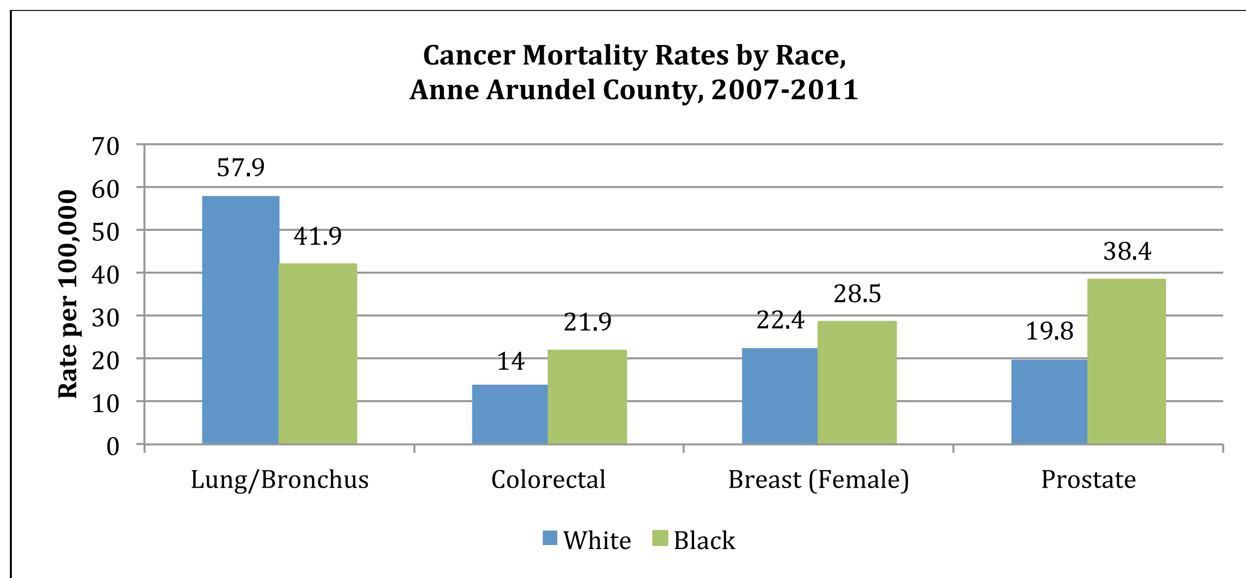
Disparities also exist when examining cancer incidence and mortality by race and ethnicity*. The incidence and mortality rates of lung and bronchus cancer and melanoma were higher in whites compared to blacks; however, black males were disproportionately diagnosed with and died from prostate cancer compared to white males. White females had a higher incidence of breast cancer; however, black females had a higher mortality rate of breast cancer in the county.

Cancer Incidence Rates by Race, Anne Arundel County, 2007-2011



Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014
*Individuals of Hispanic origin were included within the white or black estimates and are not listed separately

Cancer Mortality Rates by Race, Anne Arundel County, 2007-2011



Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014

Over the past decade, the incidence of all cancer types decreased significantly from 525.4 cases per 100,000 in 2002 to 455.4 per 100,000 in 2011. The biggest strides were made in the incidence of colon cancer (38% decrease since 2002) and prostate cancer (30% decrease since 2002). Conversely, the incidence of melanoma remained relatively unchanged during the same time period.

Table 32: Cancer Incidence Rates by Type, Anne Arundel County, 2002-2011

Year	Breast	Colon	Lung and Bronchus	Melanoma	Prostate	Cervical	All Sites
2002	144.9	54.9	70.7	30.1	197.7	**	525.4
2003	133.6	51.9	74.5	26.9	185	9.2	510.4
2004	135.3	46.6	69.6	24.9	150.6	**	470.3
2005	90.5	40.9	67.6	29.2	135.5	7.6	437.1
2006	116.3	43.2	72	31.7	131.8	**	442.6
2007	125.2	38.6	76.8	33.7	139.7	7.1	486.0
2008	146.8	38.6	78.9	32.1	173.4	6.7	520.4
2009	127.8	37.4	66.9	27.3	159.3	8.4	472.8
2010	122.1	30.8	58.8	34.5	151.5	**	466.7
2011	126	34.1	63.8	34	137.5	6.7	455.4

Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014

Mortality due to all causes of cancer also decreased in the county over the last decade; from 209.1 deaths per 100,000 in 2002 to 165.5 deaths per 100,000 in 2011 (21% decrease). The decreases in incidences of lung and bronchus cancer have been slight over the past decade and the decline in mortality has been 27% since 2002. Deaths due to colon cancer also decreased from 20.4 per 100,000 in 2002 to 10.5 per 100,000 in 2011 (48% decline).

Table 33: Cancer Mortality Rates by Type, Anne Arundel County, 2002-2011

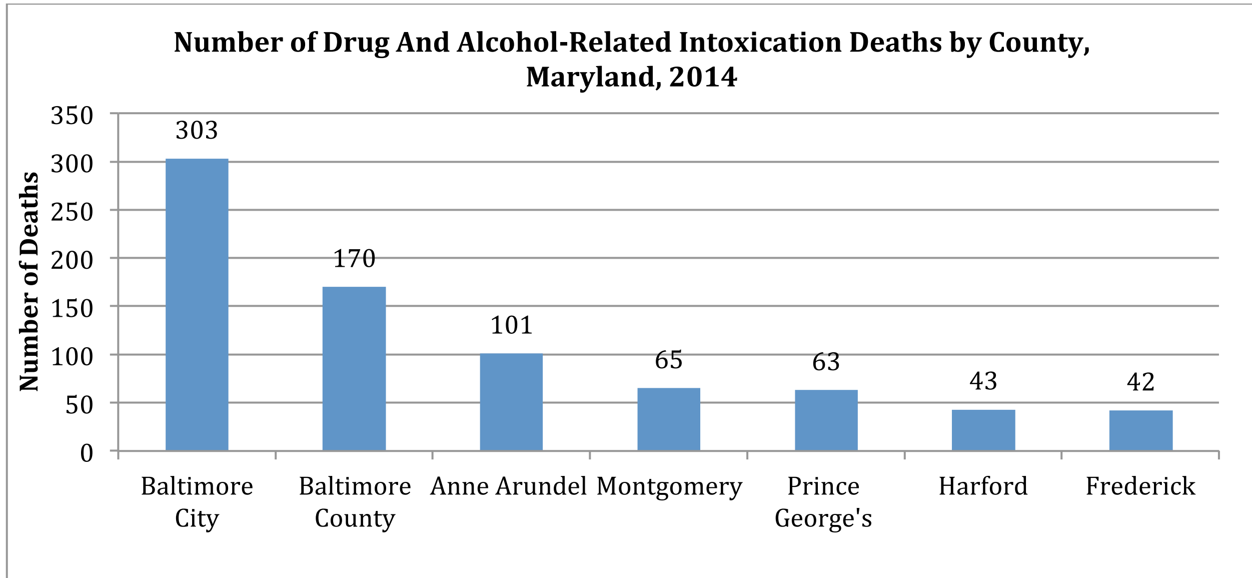
Year	Breast	Colon	Lung and Bronchus	Melanoma	Prostate	Cervical	All Sites
2002	29.7	20.4	63	4.2	23.8	3	209.1
2003	25	21.3	61.1	4.9	23.3	**	199.4
2004	28.5	22.6	59.7	**	29.1	**	202.6
2005	25.5	16	61.4	4	25.2	**	203.8
2006	23.7	17.3	65	5.4	26.2	**	202.0
2007	28.3	20.7	60.6	**	23.1	**	205.8
2008	23.7	17.2	63.9	5	25.3	**	193.7
2009	21.5	14.1	58.3	4.5	24.8	**	186.4
2010	21.8	11.7	46.4	**	16	**	165.5
2011	20.2	10.5	46.2	**	18	**	165.5

Source: Maryland Department of Health and Mental Hygiene, Annual Cancer Report, 2014

Alcohol and Drug Intoxication Deaths

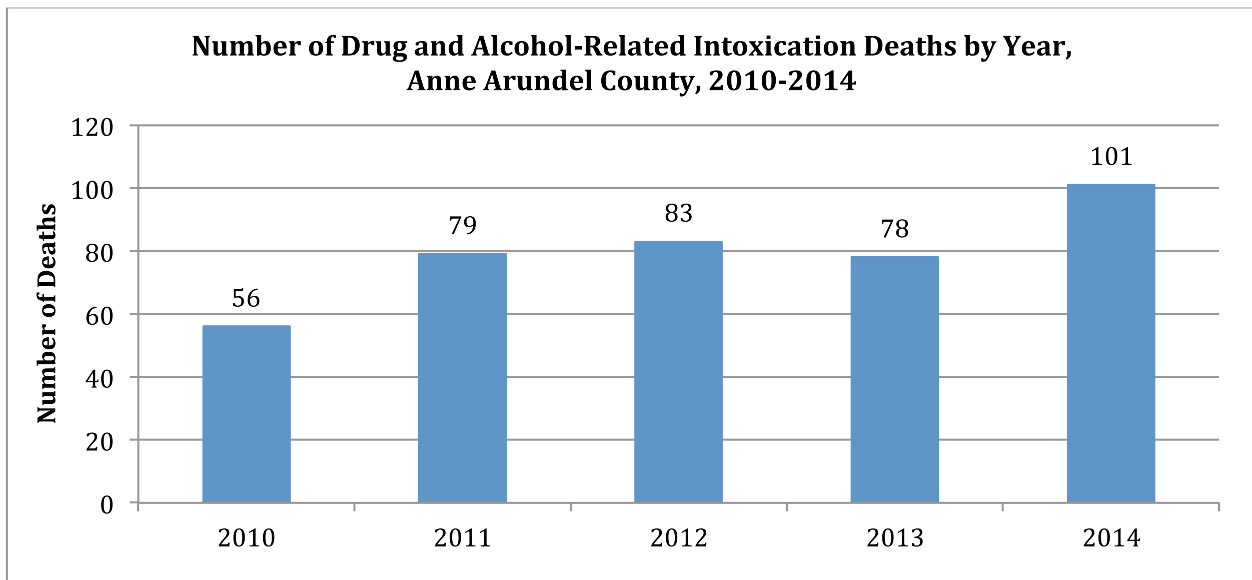
Total Alcohol and Drug Intoxication Deaths

In 2014, Anne Arundel County had the third highest number of alcohol and drug-related deaths in Maryland (after Baltimore City and Baltimore County).



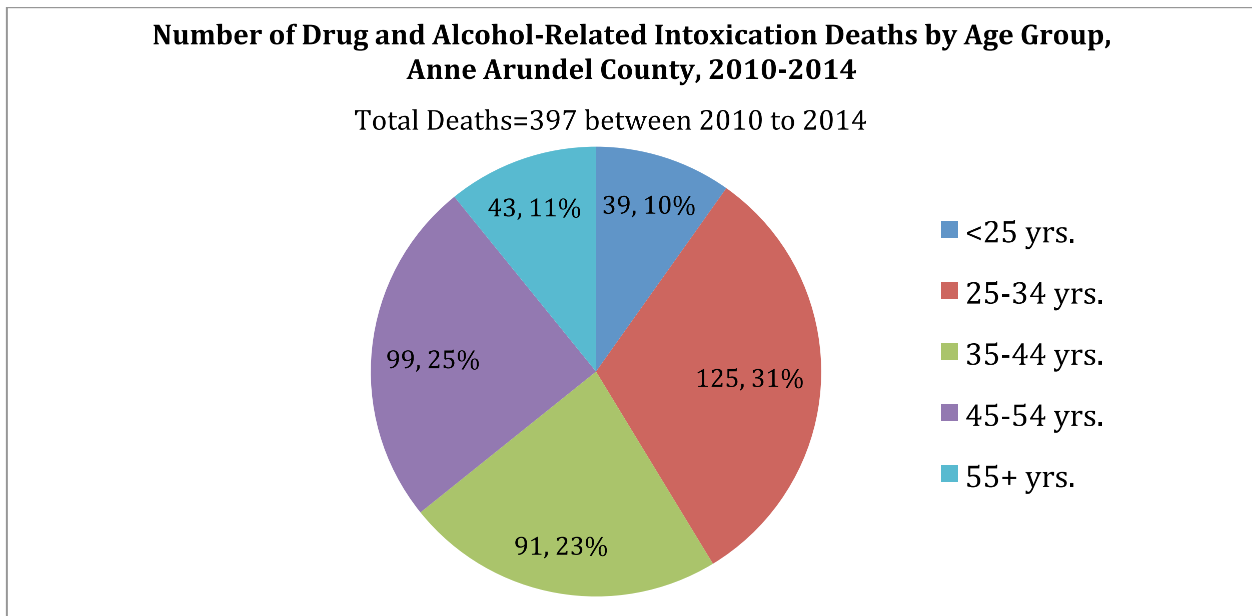
Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

A total of 101 drug and alcohol-related deaths occurred in 2014; a 29.4% increase over the number of deaths in 2013 and an 80.3% increase since 2010.



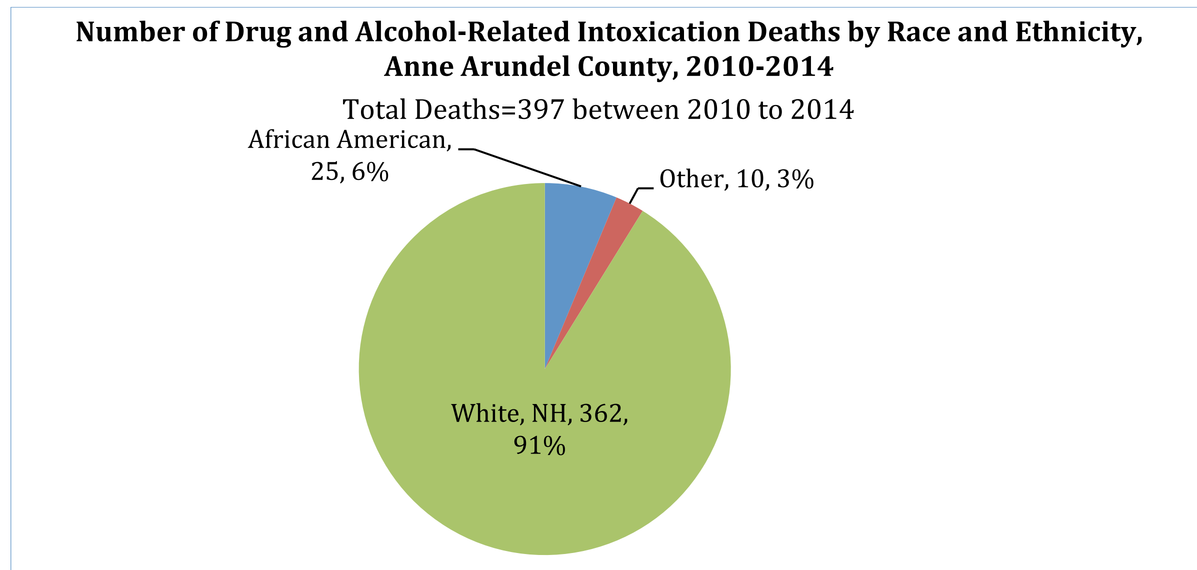
Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

Between 2010 and 2014, 79% of drug and alcohol-related deaths occurred in people 25 to 54 years old. Only 10% of drug and alcohol-related deaths occurred in people less than 25 years, and 11% of deaths in people 55 years and over.

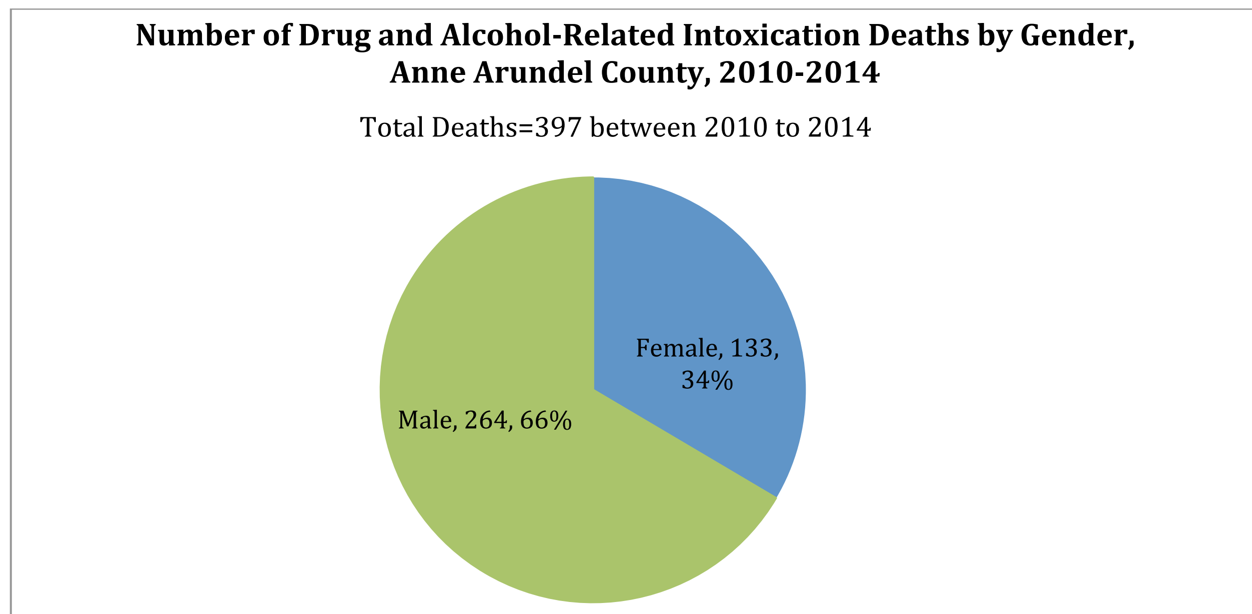


Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

The overwhelming majority (91%) of drug and alcohol-related deaths between 2010 and 2014 occurred among non-Hispanic whites. Two-thirds of drug and alcohol-related deaths occurred among males.



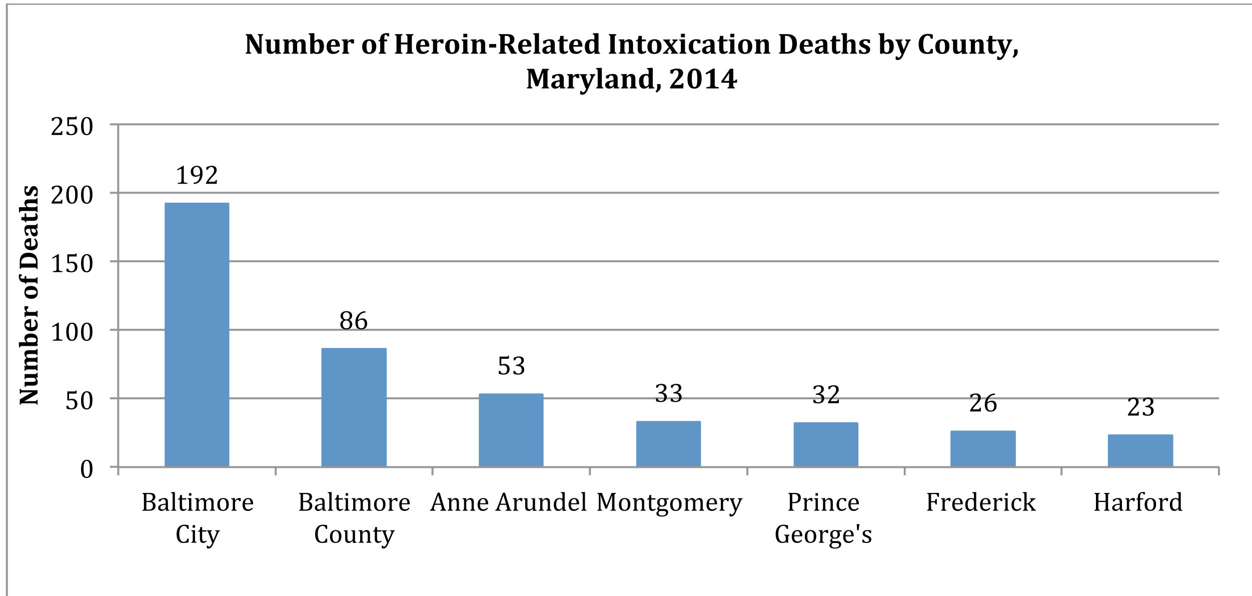
Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

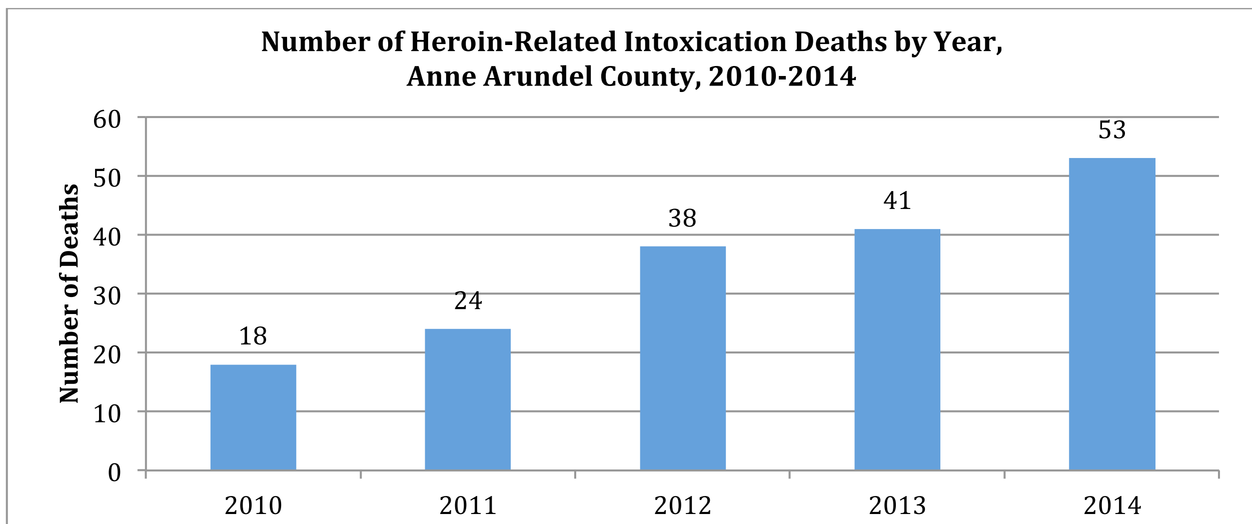
Heroin-Related Intoxication Deaths

In 2014, Anne Arundel County had the third highest number of heroin-related deaths in Maryland (after Baltimore City and Baltimore County).



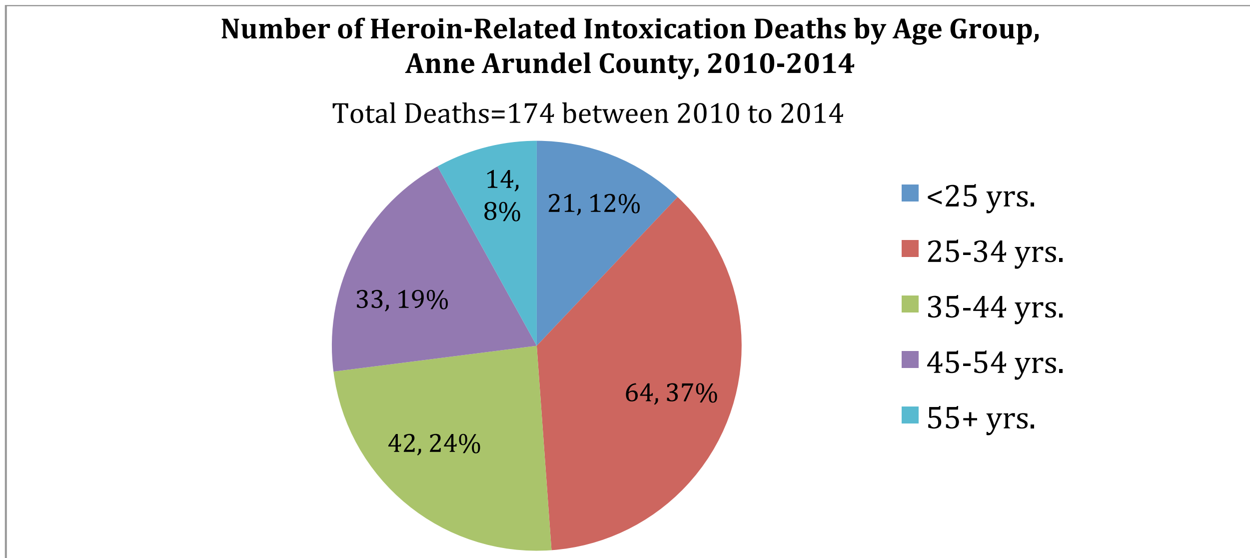
Source: Behavioral Health Administration, Maryland DHMH. Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county

Out of the 101 intoxication deaths that occurred in Anne Arundel County in 2014, 53 (52.5%) were heroin-related. The number of heroin-related deaths increased by 29.2% between 2013 and 2014, and there was almost a three-fold increase in the number of heroin-related deaths (from 18 to 53) between 2010 and 2014.



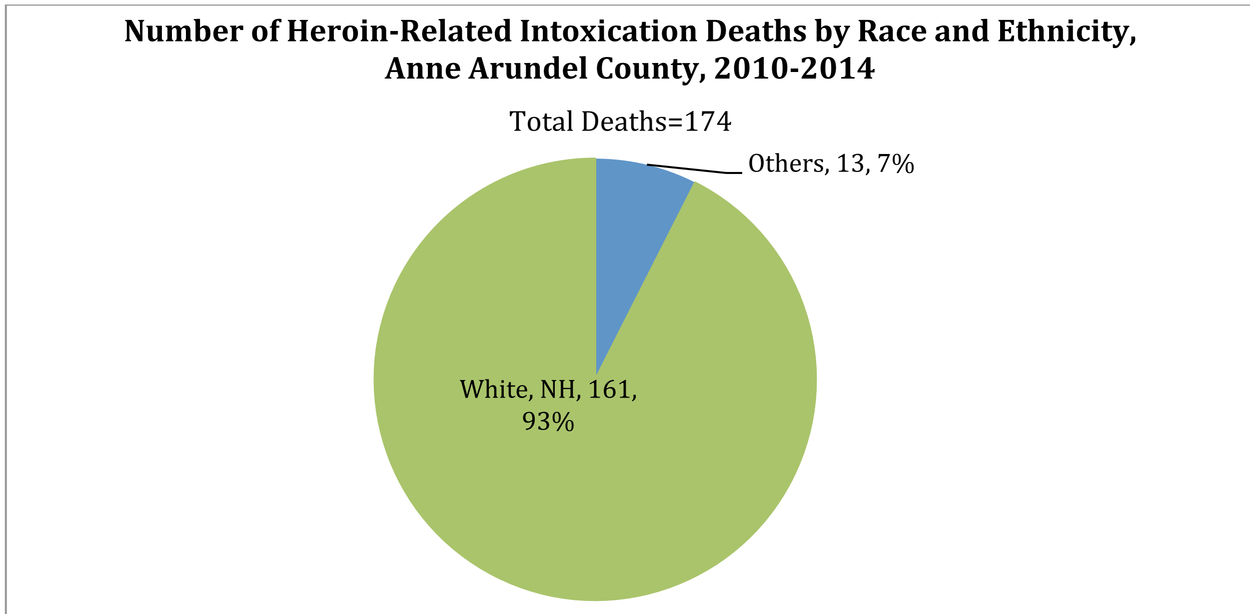
Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county

From 2010 to 2014, 80% of heroin-related deaths occurred in people between 25 to 54 years of age. Only 12% of deaths occurred in people less than 25 years, and 14% of the deaths were in people 55 years and over.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

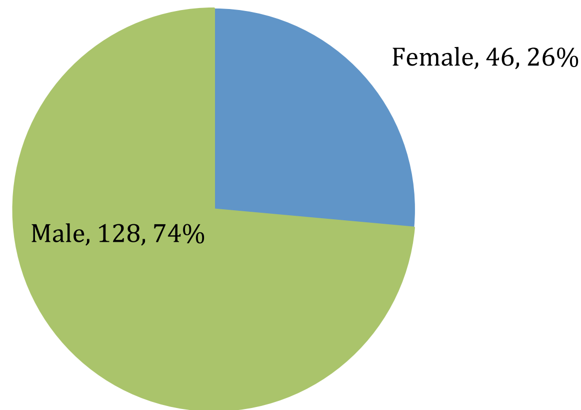
The majority (93%) of heroin-related deaths in Anne Arundel County between 2010 and 2014 occurred among non-Hispanic whites and three-quarters of heroin-related deaths were male.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

Number of Heroin-Related Intoxication Deaths by Gender, Anne Arundel County, 2010-2014

Total Deaths=174

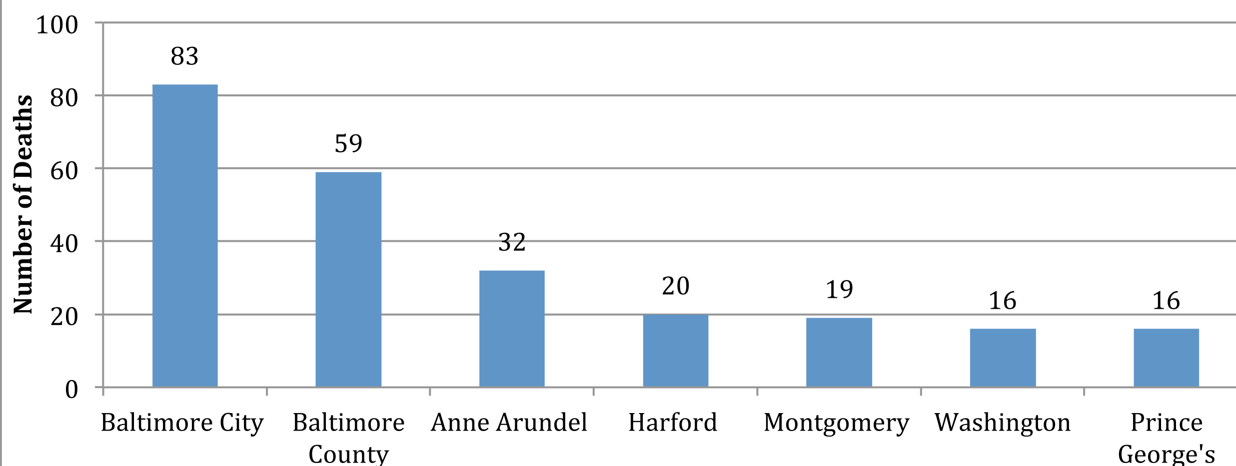


Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

PRESCRIPTION OPIOID-RELATED INTOXICATION DEATHS

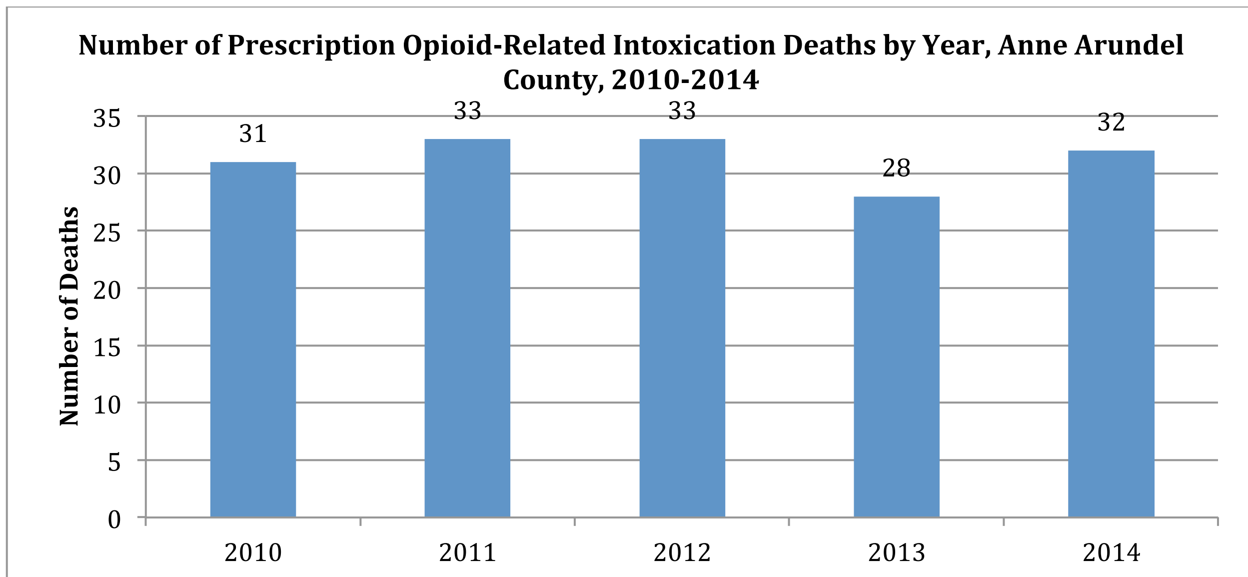
In 2014, Anne Arundel County had the third highest number of prescription opioid-related deaths in Maryland (after Baltimore City and Baltimore County).

Number of Prescription Opioid-Related Intoxication Deaths by County, Maryland, 2014



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

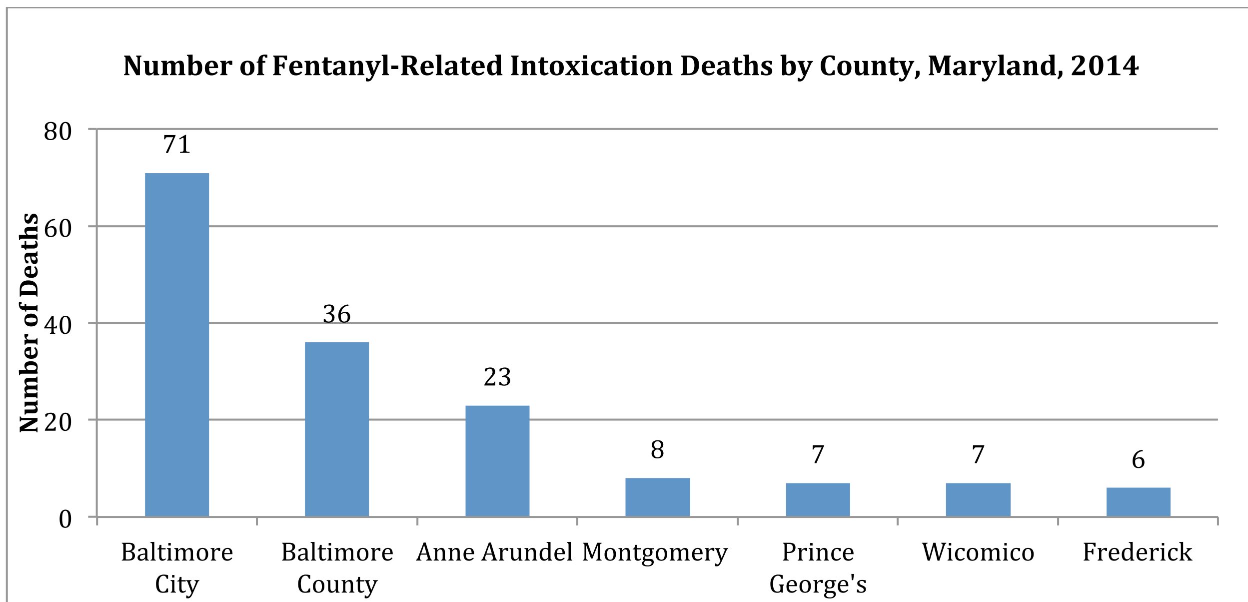
The overall number of prescription opioid-related deaths has remained relatively stable in recent years.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

Fentanyl-Related Intoxication Deaths

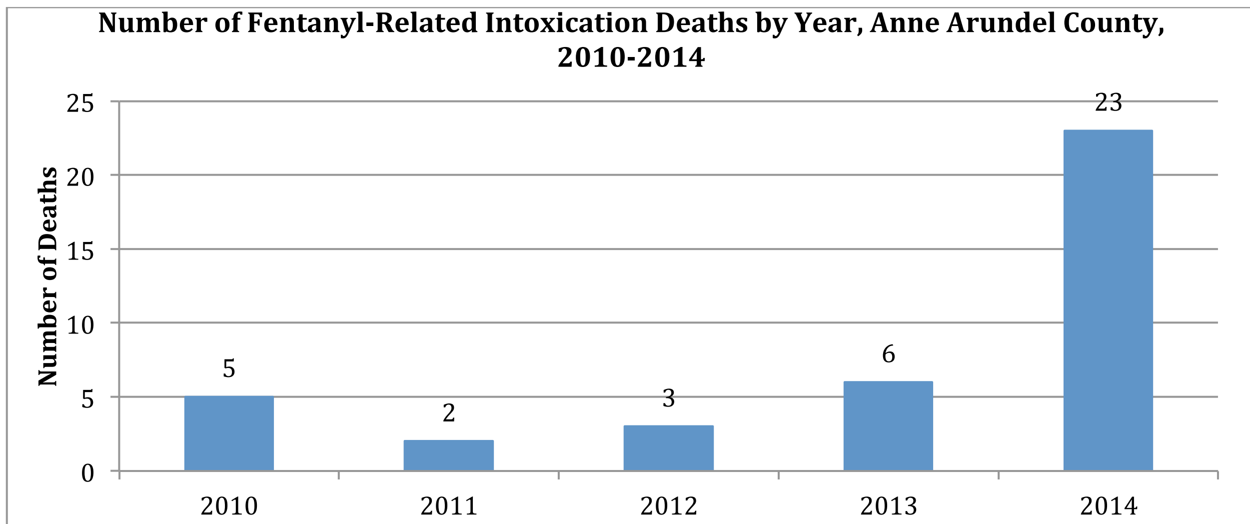
In 2014, Anne Arundel County had the third highest number of fentanyl-related deaths in Maryland (after Baltimore City and Baltimore County).



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

The number of fentanyl-related deaths increased by 283% between 2013 and 2014 (from 6 to 23). In Maryland, the number of fentanyl-related deaths began increasing in late 2013 as a result of overdoses involving non-pharmaceutical fentanyl produced in clandestine laboratories and mixed

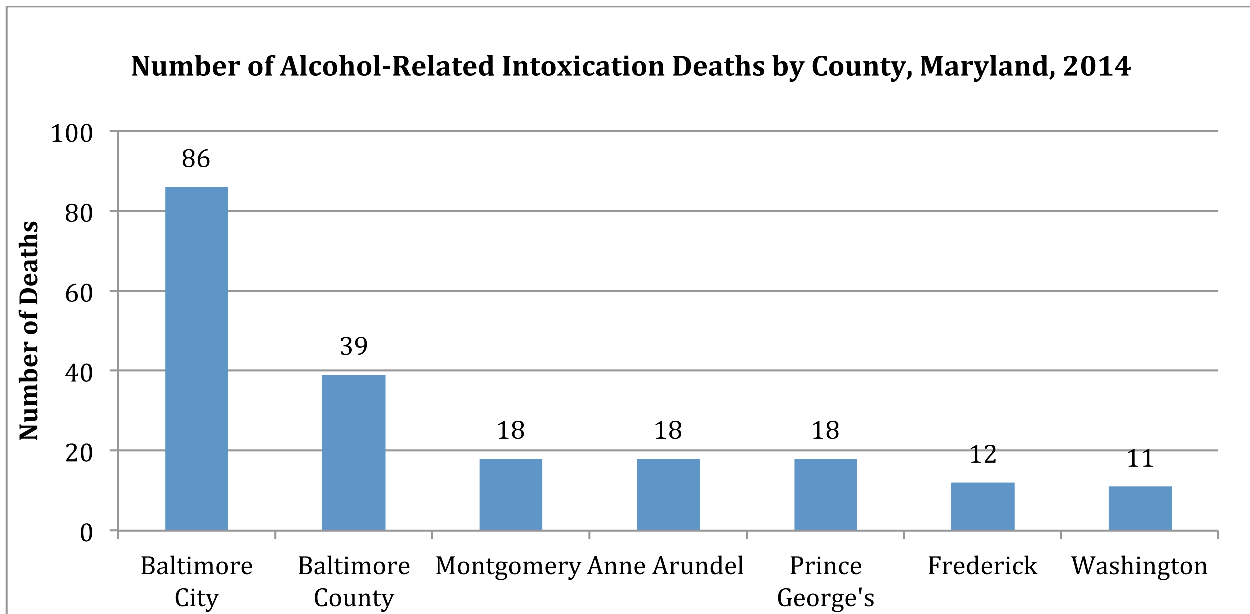
with, or substituted for, heroin or other illicit substances. Fentanyl is much more potent than heroin and greatly increases the risk of an overdose death (Behavioral Health Administration, Maryland DHMH).



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

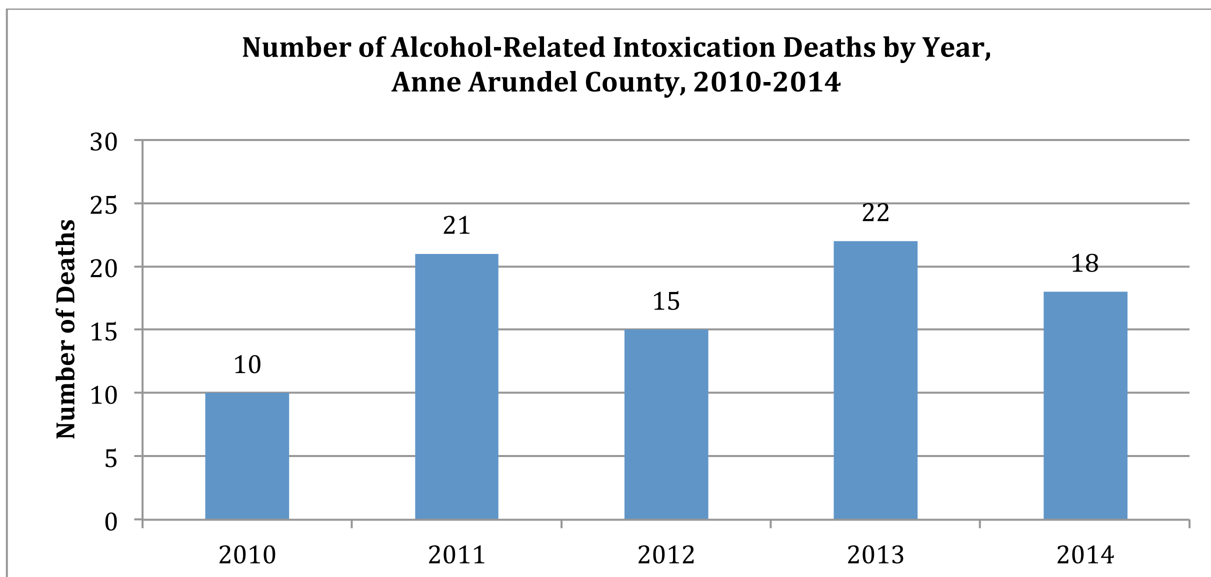
Alcohol-Related Intoxication Deaths

In 2014, Anne Arundel County had the third highest number of alcohol-related deaths in Maryland after Baltimore City and Baltimore County and tied with Montgomery County and Prince George's County.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

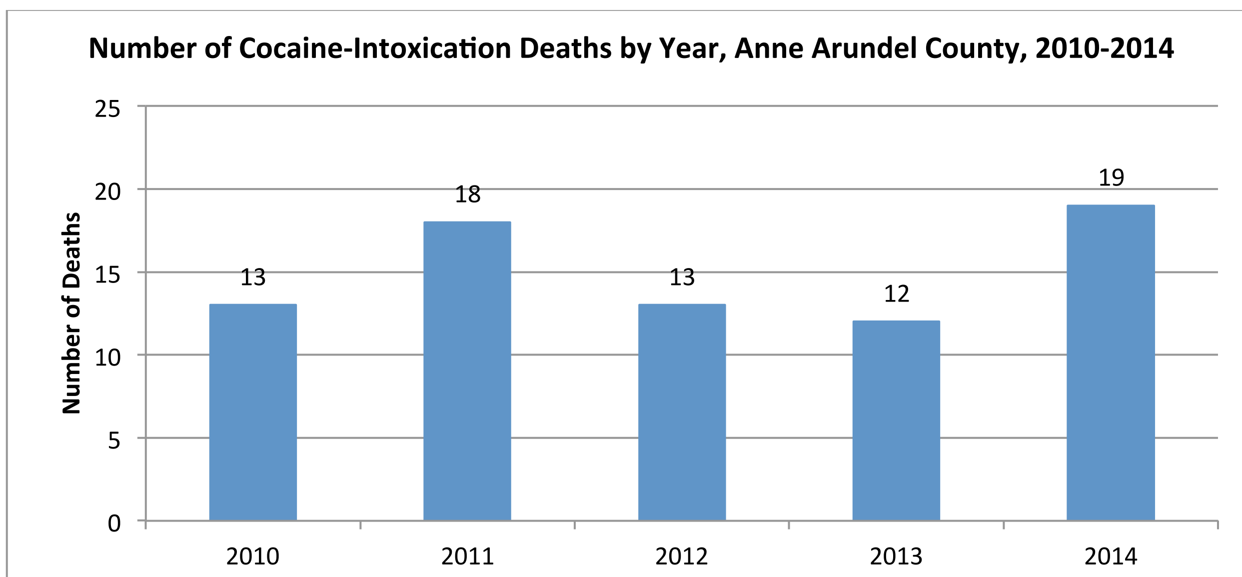
There is no consistent trend in the number of alcohol-related intoxication deaths between 2010 and 2014 in Anne Arundel County, with a low of ten deaths in 2010 and a high of 22 deaths in 2013.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

Cocaine-Related Intoxication Deaths

The 19 cocaine-related deaths in 2014 was the highest number in the past five years and a 58% increase from 2013 to 2014.



Source: Behavioral Health Administration, Maryland DHMH
Data is for deaths that occurred in Anne Arundel County irrespective of person's residence county.

Hospital Utilization

Emergency Department Visits

Emergency Departments (ED) provide a significant source of medical care in Anne Arundel County. Utilization of the ED for non-urgent health problems reflects the greater needs of the surrounding community. Access to high-quality, community-based health care can prevent a portion of unnecessary ED visits and utilization. Non-urgent use of ED leads to crowding, long wait times, high costs, as well as poor management of chronic conditions.

In 2013, 83% of UM-Baltimore Washington Medical Center's emergency department visits and inpatient admissions were comprised of the county's residents. In 2013, 75% of Anne Arundel Medical Center's ED visits and 64% of inpatient admissions were comprised of the county's residents." In 2013, Anne Arundel County residents made approximately 186,124 ED visits to hospitals within Maryland. There were 335 visits to the ED for every 1,000 individuals in the county. The ED visit rate for non-Hispanic blacks was the highest among the racial and ethnic groups examined followed by non-Hispanic whites, Hispanics and non-Hispanic Asians. The rate of ED visits for non-Hispanic blacks was 121% higher compared to that of non-Hispanic whites and 65% higher than the county's average ED visits rate.

Females had a higher overall rate of ED visits than males (372 visits per 1,000 population vs. 297 visits per 1,000). Adults aged 19-39 years had the highest ED visit rate (416 visits per 1,000) followed by children 18 years and younger (312 visits per 1,000). People over 65 years of age had the lowest ED visit rate by age group. (Note: This data only includes Anne Arundel County residents visiting EDs of hospitals in Maryland.)

Table 34: Emergency Department Visits by Race and Ethnicity, Anne Arundel County, 2013

Race/Ethnicity	Number of ED Visits	Rate per 1,000
White, NH	98,617	250.3
Black, NH	48,507	554.0
Hispanic, Any Race	8,552	223.0
Asian, NH	1,454	71.7
Total	186,124	334.9

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 35: Emergency Department Visits by Gender, Anne Arundel County, 2013

Gender	Number of ED Visits	Rate per 1,000
Male	81,648	296.8
Female	104,471	372.2

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 36: Emergency Department Visits by Age Group, Anne Arundel County, 2013

Age Group	Number of ED Visits	Rate per 1,000
0 to 18 yrs.	39,455	312.0
19 to 39 yrs.	68,342	415.9
40 to 64 yrs.	58,087	301.9
65 years and over	20,240	279.0

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

In 2013, 5.7% of ED visits were made for sprains and strains, the most frequent reason for ED visits in Anne Arundel County. The other most frequent ED visit principal diagnoses are listed in Table 37.

Table 37: Emergency Department Visits by Principal Diagnosis, Anne Arundel County, 2013

	Principal Diagnosis	Frequency	Percent
1	Sprains and strains	10,636	5.7%
2	Superficial injury; contusion	8,697	4.7%
3	Abdominal pain	8,626	4.6%
4	Nonspecific chest pain	8,604	4.6%
5	Spondylosis; intervertebral disc disorders; other back problems	7,361	4.0%
6	Upper respiratory infections	7,220	3.9%
7	Injuries and conditions due to external causes	5,433	2.9%
8	Headache; including migraine	4,967	2.7%
9	Urinary tract infections	4,339	2.3%
10	Skin and subcutaneous tissue infections	4,335	2.3%

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Emergency Department Visits for Acute and Chronic Conditions, Anne Arundel County, 2013

In 2013, 85.6% of all ED visits by Anne Arundel County residents were due to acute conditions and 14.3% were due to chronic conditions. Mood disorder was the most common chronic condition (12.2%) for ED visits followed by asthma (11.6 %), alcohol-related disorders (7.2 %), anxiety disorders (6.0 %), headaches/migraines (5.9%), and substance-related disorders (3.9%).

Table 38: Emergency Department Visits for Chronic Conditions, Anne Arundel County, 2013

	Chronic Conditions	**Frequency**	**Percent**
1	Mood disorder	3,256	12.2%
2	Asthma	3,101	11.6%
3	Alcohol-related disorder	1,922	7.2%
4	Anxiety disorder	1,607	6.0%
5	Headache/migraine	1,576	5.9%
6	Substance-related disorder	1,042	3.9%
7	Hypertension	1,027	3.9%
8	Other nerve disorder	946	3.6%
9	Dysrhythmia	742	2.8%
10	Other upper respiratory condition	703	2.6%
	Total ED Visits for Chronic Conditions	26,637	

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

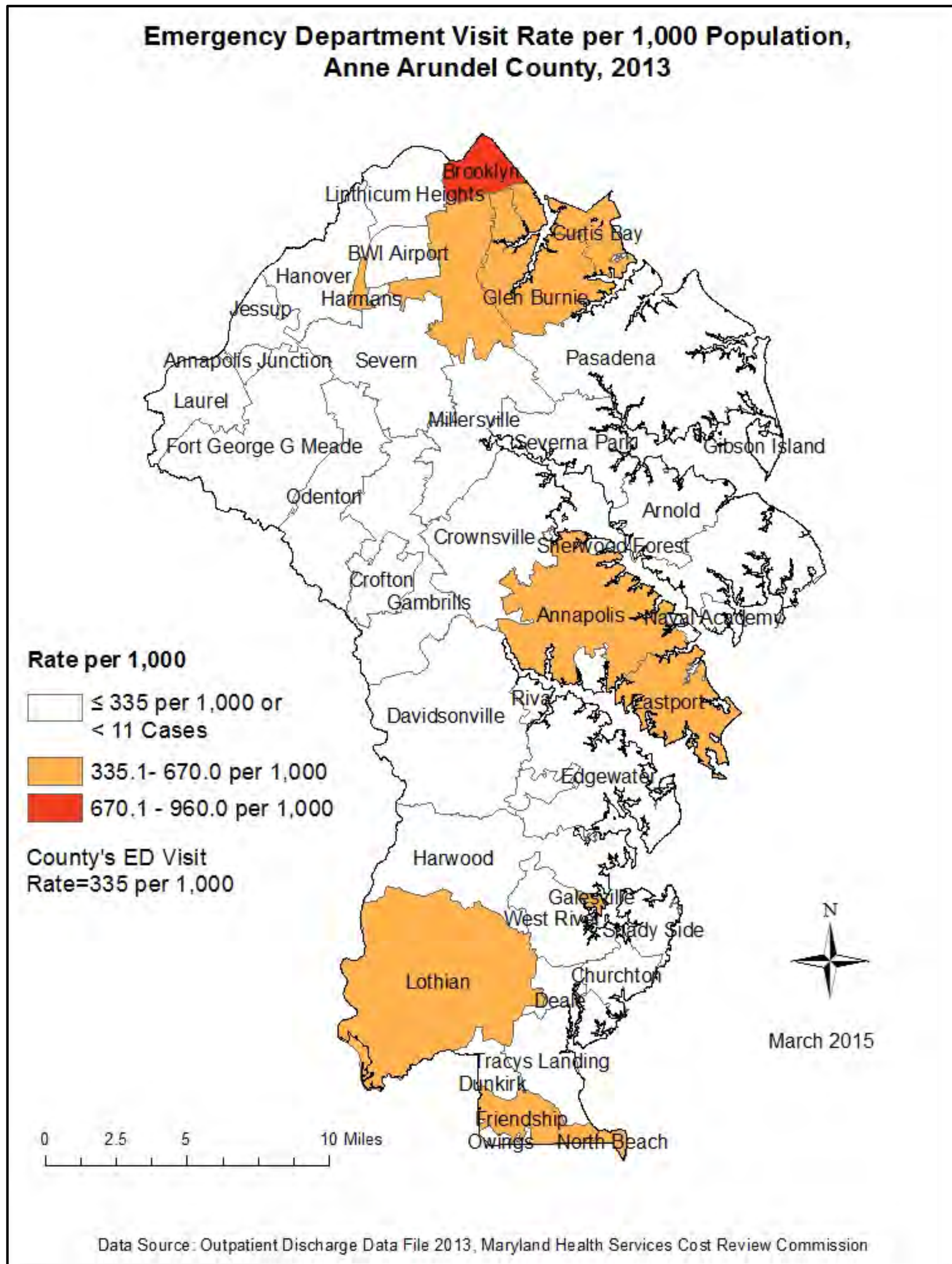
Table 39: Emergency Department Visits for Acute Conditions, Anne Arundel County, 2013

	Acute Condition	Frequency	Percent
1	Sprain	10,636	6.7%
2	Superficial injuries	8,698	5.5%
3	Abdominal pain	8,625	5.4%
4	Chest pain	8,604	5.4%
5	Back problem	7,071	4.4%
6	Other upper respiratory infection	6,517	4.1%
7	Other injuries	5,433	3.4%
8	Skin infection	4,335	2.7%
9	Urinary tract infection	4,334	2.7%
10	Teeth condition	4,239	2.7%
	Total ED Visits for Chronic Conditions	159,311	

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Crude ED Visit Rates per 1,000 Population by ZIP Code, Anne Arundel County, 2013

Eastport, North Beach, Annapolis (21401), Lothian, Galesville, Glen Burnie (21060 and 21061), Friendship, Harmans, Curtis Bay and Brooklyn have higher ED visit rates than the average county ED visit rate. Brooklyn has the highest ED visit rate (960 visits per 1,000), 186% higher than that of the average county ED visit rate (335 visits per 1,000).



Emergency Department Visits for Selected Health Conditions as Primary Discharge Diagnosis

Diabetes mellitus, hypertension, asthma and heart disease are conditions where hospitalization may have been avoided if the patient was receiving sufficient, high-quality and preventive outpatient care. These estimates represent populations where outpatient care can be improved and also target conditions for which care is needed. (Note: This data only includes Anne Arundel County residents visiting EDs of hospitals in Maryland.)

Diabetes

In 2013, the ED visit rate of non-Hispanic blacks for diabetes was 121% higher than the average county rate. The ED visit rates among males and females for diabetes were almost equal. The ED visit rate for diabetes increased exponentially with age.

Table 40: Emergency Department Visits by Race and Ethnicity, Anne Arundel County, 2013

Race/Ethnicity	Number of ED Visits	Rate per 100,000
White, NH	556	141.1
Black, NH	406	463.7
Hispanic, Any Race	46	120.0
Asian	18	88.8
Total	1166	209.6

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 41: Emergency Department Visits by Gender, Anne Arundel County, 2013

Gender	Number of ED Visits	Rate per 100,000
Male	570	207.2
Female	596	212.4

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

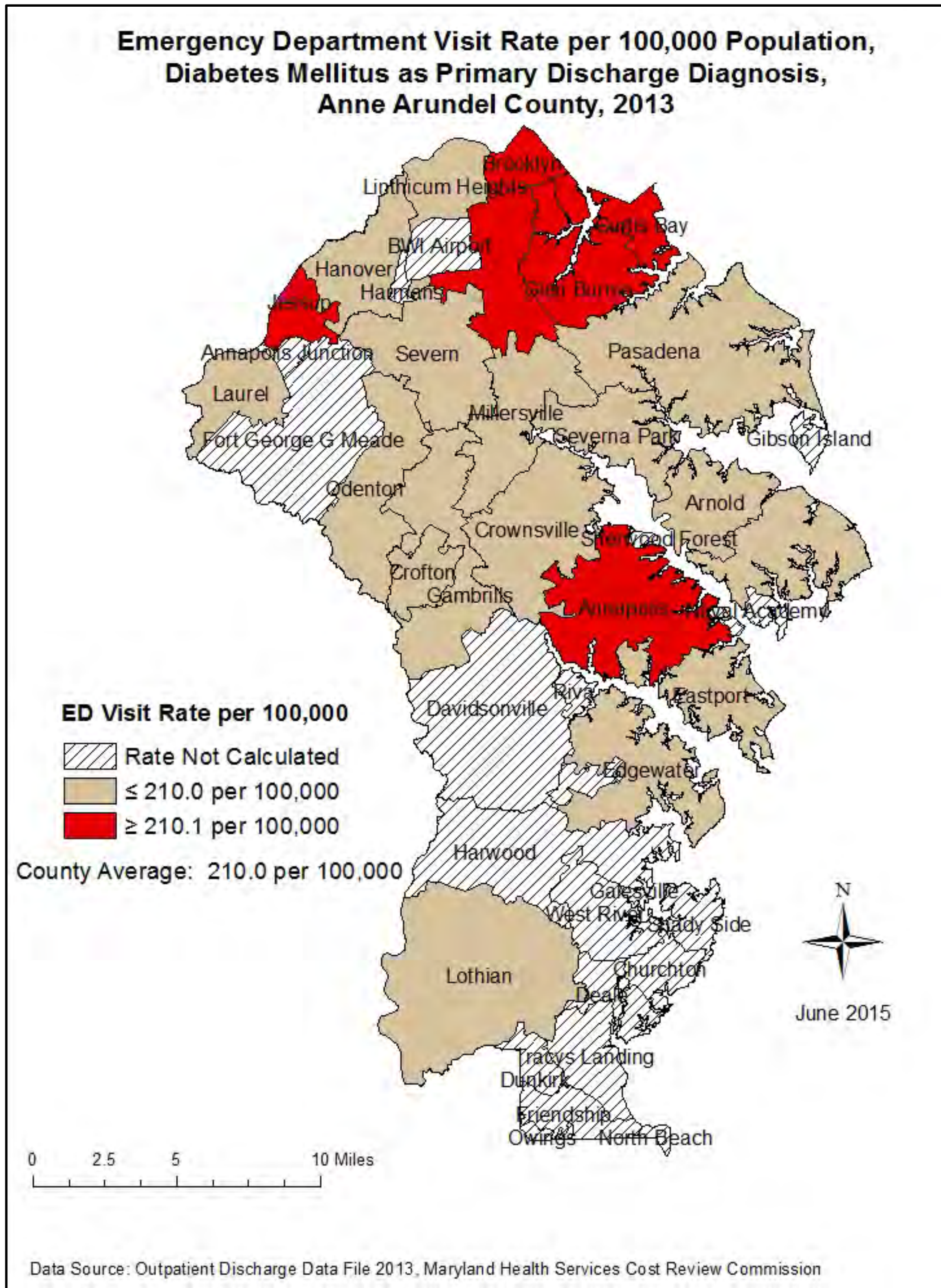
Table 42: Emergency Department Visits by Age Group, Anne Arundel County, 2013

Age Group	Number of ED Visits	Rate per 100,000
0 to 18 yrs.	59	46.7
19 to 39 yrs.	261	158.8
40 to 64 yrs.	583	303.0
65 yrs. and over	263	362.5

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Crude ED Visit Rate per 100,000 Population for Diabetes, Anne Arundel County, 2013

Brooklyn, Curtis Bay, Jessup, Glen Burnie (21060 and 21061) and Annapolis (21401) have higher ED visit rates for diabetes than the county average of 210 visits per 100,000 population. ED visit rates for diabetes were six times higher in Brooklyn and five times higher in Curtis Bay than the county average.



Hypertension

Similar to diabetes, in 2013, non-Hispanic blacks had a higher ED visit rate for hypertension compared to other racial and ethnic groups examined and also higher than the county average. Non-Hispanic blacks were 2.3 times more likely to visit the ED for hypertension than the county average, while females visited the ED for hypertension 37% more than males. Also similar to diabetes, the ED visit rate for hypertension increased exponentially by age.

Table 43: Emergency Department Visits by Race and Ethnicity, Anne Arundel County, 2013

Race/Ethnicity	Number of ED Visits	Rate per 100,000
White, NH	551	139.8
Black, NH	450	514.0
Hispanic, Any Race	42	109.5
Asian, NH	-	-
Total	1233	221.6

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 44: Emergency Department Visits by Gender, Anne Arundel County, 2013

Gender	Number of ED Visits	Rate per 100,000
Male	513	186.5
Female	720	256.5

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

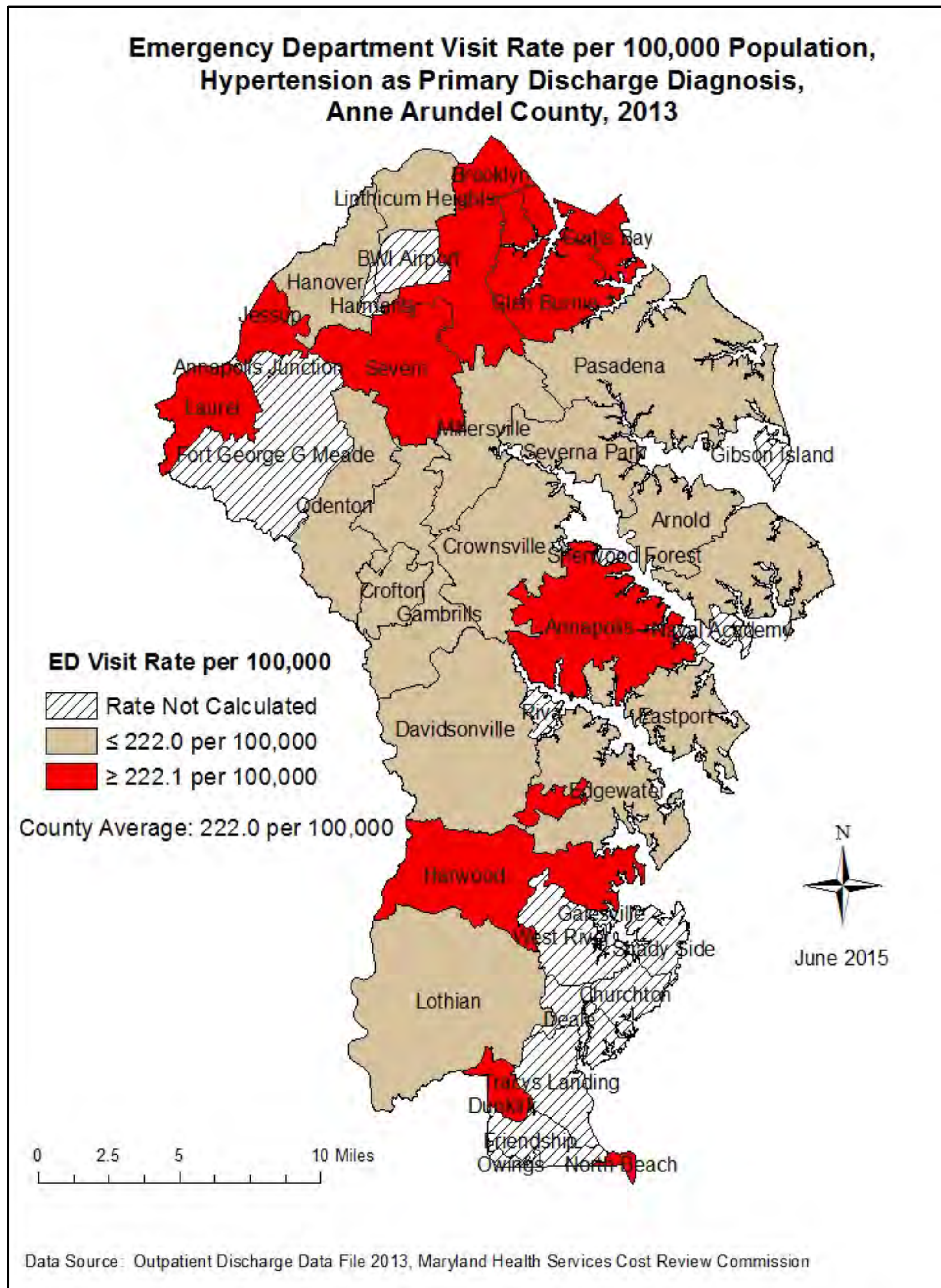
Table 45: Emergency Department Visits by Age Group, Anne Arundel County, 2013

Age Group	Number of ED Visits	Rate per 100,000
0 to 18 yrs.	-	-
19 to 39 yrs.	182	110.8
40 to 64 yrs.	668	347.2
65 yrs. and over	375	516.9

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Crude ED Visit Rate per 100,000 Population for Hypertension, Anne Arundel County, 2013

Residents in Dunkirk, North Beach, Brooklyn, Curtis Bay, Jessup, Annapolis (21401), Harwood, Glen Burnie (21060 and 21061), Laurel and Severn visited the ED for hypertension more than the county average of 222 visits per 100,000.



Asthma

Emergency Department visits for asthma revealed the biggest disparities between populations in the county. By a wide margin, non-Hispanic blacks visited the ED for asthma more than all other racial and ethnic groups examined. Non-Hispanic blacks visited the ED over six times more than non-Hispanic whites for asthma in 2013. Young people (18 and under) have disproportionately higher ED visits rate for asthma.

Table 46: Emergency Department Visits by Race and Ethnicity, Anne Arundel County, 2013

Race/Ethnicity	Number of ED Visits	Rate per 100,000
White, NH	1,051	266.7
Black, NH	1,488	1699.5
Hispanic, Any Race	165	430.3
Asian, NH	18	88.8
Total	3,356	603.2

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 47: Emergency Department Visits by Gender, Anne Arundel County, 2013

Gender	Number of ED Visits	Rate per 100,000
Male	1,726	627.4
Female	1,630	580.8

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

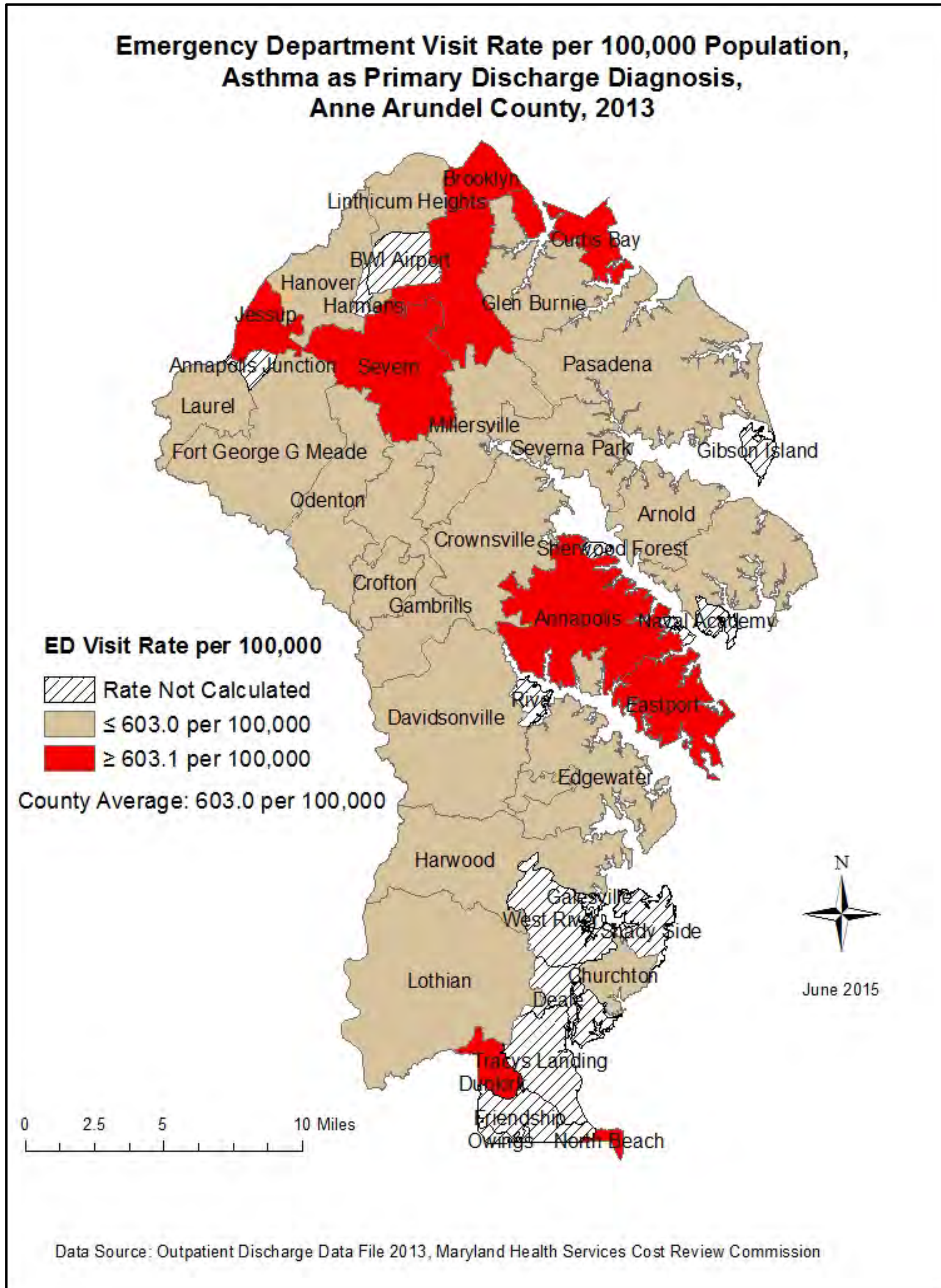
Table 48: Emergency Department Visits by Age Group, Anne Arundel County, 2013

Age Group	Number of ED Visits	Rate per 100,000
0 to 18 yrs.	1,449	1,145.8
19 to 39 yrs.	919	559.3
40 to 64 yrs.	880	457.3
65 yrs. and over	108	148.9

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Crude ED Visit Rate per 100,000 Population for Asthma, Anne Arundel County, 2013

Brooklyn, North Beach, Curtis Bay, Dunkirk, Glen Burnie (21060), Jessup, Severn, Annapolis (21401) and Eastport residents visited the ED for asthma more than the county average of 603 visits per 100,000. ED visits for asthma were six times higher in Brooklyn and five times higher in Curtis Bay than the county average.



Heart Disease

Visits to the ED for heart disease related conditions averaged 307 per 100,000 in 2013. Only non-Hispanic blacks had higher ED visits for heart disease (346 per 100,000). Men visited the ED for heart disease more than women (334 per 100,000 vs. 279 per 100,000). As seen previously with hypertension and diabetes, ED visits for heart disease increased with age.

Table 49: Emergency Department Visits by Race and Ethnicity, Anne Arundel County, 2013

Race/Ethnicity	Number of ED Visits	Rate per 100,000
White, NH	1,125	285.5
Black, NH	303	346.1
Hispanic, Any Race	25	65.2
Asian, NH	13	64.1
Total	1,704	306.6

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 50: Emergency Department Visits by Gender, Anne Arundel County, 2013

Gender	Number of ED Visits	Rate per 100,000
Male	920	334.4
Female	784	279.4

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

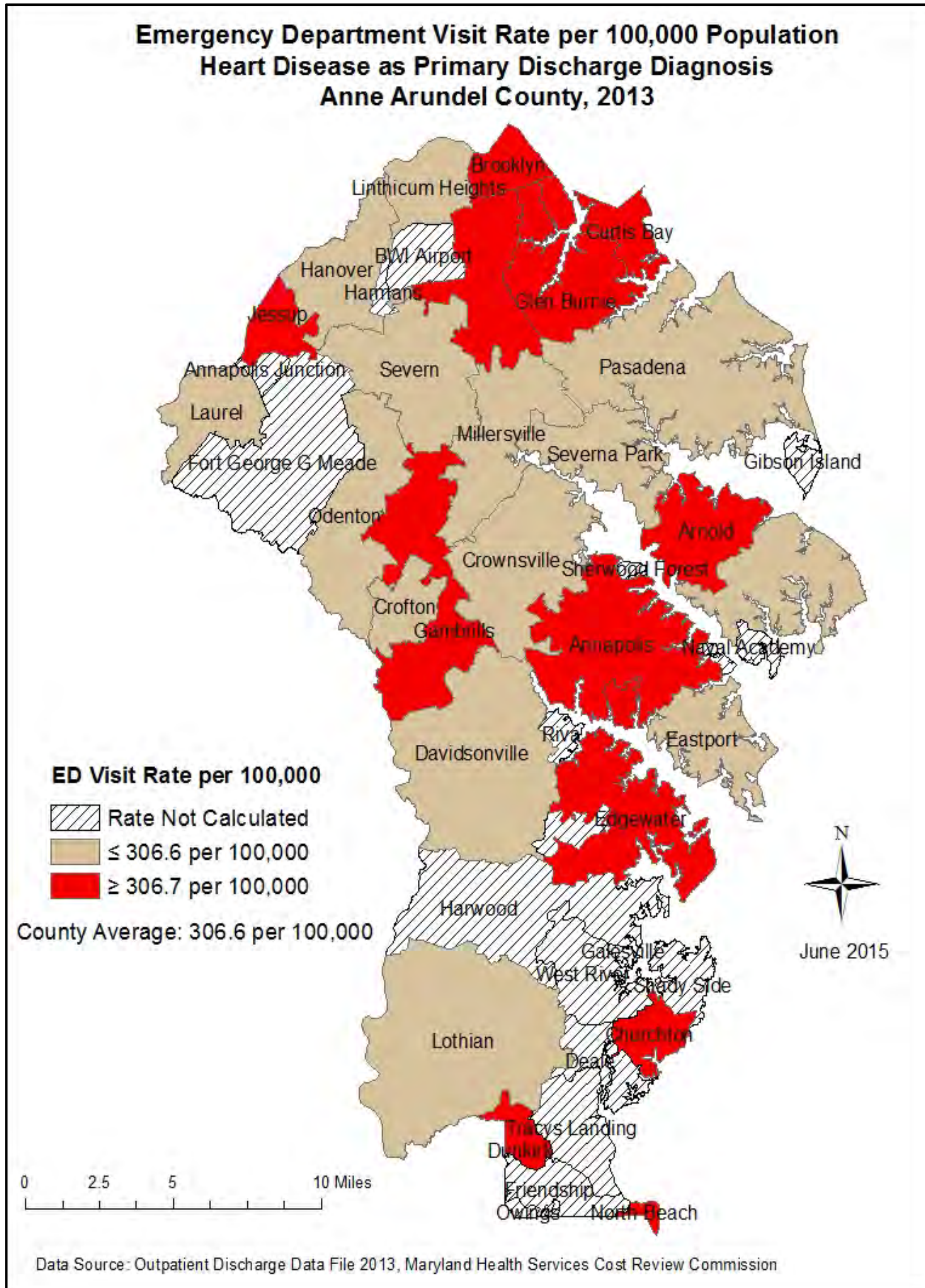
Table 51: Emergency Department Visits by Age Group, Anne Arundel County, 2013

Age Group	Number of ED Visits	Rate per 100,000
0 to 18 yrs.	55	43.5
19 to 39 yrs.	199	121.1
40 to 64 yrs.	722	375.2
65 yrs. and over	728	1003.4

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Crude ED Visit Rate per 100,000 Population for Heart Disease, Anne Arundel County, 2013

Dunkirk, North Beach, Brooklyn, Curtis Bay, Jessup, Lothian, Annapolis (ZIP code 21401), Churchton, Gambrills, Glen Burnie (21060 and 21061), Edgewater and Arnold have higher ED visits rate for heart disease than the county average of 307 per 100,000.



Behavioral Health

Behavioral health focuses on the overall state of mental and emotional being and encompasses both substance-related disorders as well as mental illness. Substance abuse/misuse is a prevalent behavioral health challenge in Anne Arundel County. Other behavioral health challenges include suicide and mental illness.

In 2013, 9,544 out of 186,124 (5.1%) of all ED-related visits by Anne Arundel County residents were for behavioral health related conditions. Mood disorders were the leading cause of behavioral health related ED visits (34.1%), followed by alcohol-related disorders (20.2%), anxiety disorders (16.8%) and substance-related disorders (14.1%).

Table 52: Emergency Department Visits for Behavioral Health Conditions, Anne Arundel County, 2013

Behavioral Health Condition	Frequency	Percent
Mood disorders	3,256	34.1%
Alcohol-related disorders	1,927	20.2%
Anxiety disorders	1,608	16.8%
Substance-related disorders	1,342	14.1%
Schizophrenia and other psychotic disorders	568	6.0%
Adjustment disorders	239	2.5%
Suicide and intentional self-inflicted injuries	185	1.9%
Attention-deficit, conduct and disruptive behavior disorders	176	1.8%
Miscellaneous mental disorders	159	1.7%
Disorders usually diagnosed in infancy, childhood or adolescence	44	0.5%
Personality disorders	31	0.3%
Total	9,544	

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

The ED visits rate for behavioral health conditions among non-Hispanic blacks was the highest among racial/ethnic groups, followed by non-Hispanic whites, Hispanics and non-Hispanic Asians. The rate of ED visits for non-Hispanic blacks was 16% higher compared to that of non-Hispanic whites.

Table 53: Emergency Department Visits for Behavioral Health Conditions by Race and Ethnicity, Anne Arundel County, 2013

	Frequency	Rate per 1,000
White, NH	6,386	16.2
Black, NH	1,644	18.8
Hispanic, Any Race	289	7.5
Asian	78	3.8

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Males had a higher overall rate of ED visits for behavioral health conditions than females (19.3 versus 15.1 per 1,000 populations).

Table 54: Emergency Department Visits for Behavioral Health Conditions by Sex, Anne Arundel County, 2013

	Frequency	Rate per 1,000
Male	5,321	19.3
Female	4,223	15.1
Total	9,544	17.2

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Adults aged 19-39 years have the highest ED visit rate for behavioral health conditions (26 per 1,000) followed by adults 40-64 years (17.7 per 1,000). People over 65 years of age had the lowest ED visit rate by age group.

Table 55: Emergency Department Visits for Behavioral Health Conditions by Age Group, Anne Arundel County, 2013

Age Group	Frequency	Rate per 1,000
0 to 18 yrs.	1,471	11.6
Under 5 yrs.	*13*	-
5-18 yrs.	*1,458*	*15.9*
19 to 39 yrs.	4,260	26.0
19 to 24 yrs.	*1,318*	*26.0*
25 to 39 yrs.	*2,942*	*26.0*
40 to 64 yrs.	3,422	17.7
65 yrs. and over	391	5.4

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Leading behavioral health conditions related to ED visits varied by age group. In 2013, mood disorders were leading causes of ED visits among age groups 5-39 years. Alcohol-related disorders were the leading cause of ED visits among age group 40-64 years. Anxiety disorders were the leading cause of ED visits among age group 65 years and over. Mood disorders, anxiety disorders and alcohol-related disorders were among the top five leading causes of ED visits among all ages, while substance-related disorders, schizophrenia and other psychotic disorders were among the top five leading causes of ED visits among all age groups 18 years and over.

Table 56: Emergency Department Visits for Behavioral Health Conditions by Age 5 -18 Years, Anne Arundel County, 2013

	Behavioral Health Condition	Frequency	Percent
1	Mood disorders	774	53.1%
2	Anxiety disorders	164	11.3%
3	Attention-deficit, conduct, and disruptive behavior disorders	130	8.9%
4	Alcohol-related disorders	91	6.2%
5	Adjustment disorders	89	6.1%

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 57: Emergency Department Visits for Behavioral Health Conditions by Age 19 -24 Years, Anne Arundel County, 2013

	Behavioral Health Condition	Frequency	Percent
1	Mood disorders	441	33.5%
2	Substance-related disorders	2,881	21.9%
3	Anxiety disorders	224	17.0%
4	Alcohol-related disorders	170	12.9%
5	Schizophrenia and other psychotic disorders	69	5.3%

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 58: Emergency Department Visits for Behavioral Health Conditions by Age 25-39 Years, Anne Arundel County, 2013

	Behavioral Health Condition	Frequency	Percent
1	Mood disorders	927	31.5%
2	Anxiety disorders	614	20.9%
3	Substance-related disorders	584	19.8%
4	Alcohol-related disorders	452	15.4%
5	Schizophrenia and other psychotic disorders	163	5.6%

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Table 59: Emergency Department Visits for Behavioral Health Conditions by Age 40-64 Years, Anne Arundel County, 2013

	Behavioral Health Condition	Frequency	Percent
1	Alcohol-related disorders	1,142	33.4%
2	Mood disorders	1,019	29.8%
3	Anxiety disorders	503	14.7%
4	Substance-related disorders	369	10.8%
5	Schizophrenia and other psychotic disorders	236	6.9%

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

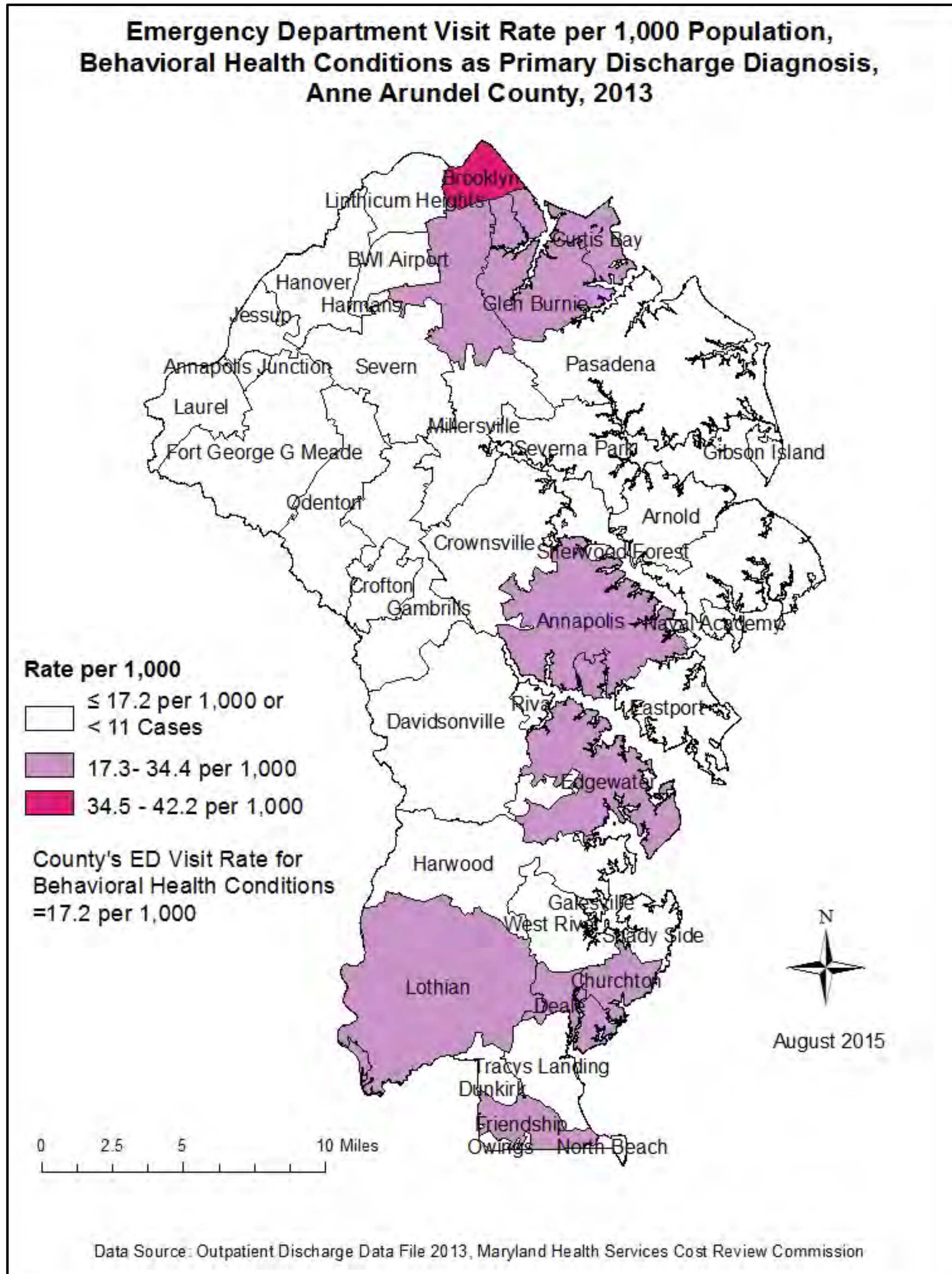
Table 60: Emergency Department Visits for Behavioral Health Conditions by Age 65 Years and Over, Anne Arundel County, 2013

	Behavioral Health Condition	Frequency	Percent
1	Anxiety disorders	103	26.2%
2	Mood disorders	94	24.1%
3	Schizophrenia and other psychotic disorders	81	20.8%
4	Alcohol-related disorders	70	18.0%
5	Substance-related disorders	17	4.5%

Source: Outpatient Discharge Data File 2013, Maryland Health Services Cost Review Commission

Crude ED Visits Rate per 100,000 Population for Behavioral Health Conditions, Anne Arundel County, 2013

Lothian, Edgewater, Annapolis (21401), Churchton, Deale, Glen Burnie (21060 and 21061), Curtis Bay, Friendship and Brooklyn have higher ED visits rates for behavioral health conditions than the county average of 17.2 per 1,000 population. Brooklyn has the highest ED visit rate (42.2 per 1,000) for behavioral health conditions, 145% higher than that of the average county rate.



Hospital Admissions

In 2013, there were an estimated 59,533 hospital stays in Anne Arundel County, representing a hospitalization rate of 107.1 stays per 1,000, lower than the hospitalization rate in Maryland of 112.6 per 1,000. The hospitalization rate for non-Hispanic blacks was the highest among the racial/ethnic groups examined. The rate of hospitalization for non-Hispanic blacks was 15% higher than that of non-Hispanic whites. (Note: This data only includes Anne Arundel County residents admitted to hospitals in Maryland.)

Table 61: Hospitalization by Race and Ethnicity, Anne Arundel County, 2013

Race/Ethnicity	Number of Hospitalizations	Rate per 1,000
White, NH	37,947	96.3
Black, NH	9,733	111.2
Hispanic, Any Race	3,006	78.4
Asian	766	37.8
Total	59,533	107.1

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Females had a 33% higher rate of hospitalization than males. Maternal hospitalization for females admitted for pregnancy and delivery were included in this analysis.

Table 62: Hospitalization by Gender, Anne Arundel County, 2013

Sex	Number of Hospitalizations	Rate per 1,000
Male	25,299	92.0
Female	34,231	122.0

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

The hospitalization rate was highest in the population aged 65 years and over. The hospitalization rate increased with age from 74.1 hospitalizations per 1,000 population among 0–18 year olds to 267.9 hospitalizations per 1,000 population among those aged 65 years and over.

Table 63: Hospitalization by Age Group, Anne Arundel County, 2013

Age Group	Number of Hospitalizations	Rate per 1,000
0 to 18 yrs.	9,371	74.1
19 to 39 yrs.	12,584	76.6
40 to 64 yrs.	18,143	94.3
Greater than 64 yrs.	19,435	267.9

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

In 2013, 10 leading principal diagnoses accounted for 75% of all hospitalizations among Anne Arundel County residents. Even though live births typically account for the greatest number of inpatient hospitalizations, it is the preventable conditions that are of greater importance in the analyses.

Some of the leading causes of hospitalization were shared by some groups but not by others. Congestive heart failure was the second leading cause of hospitalization for non-Hispanic blacks and sixth leading cause of hospitalization for non-Hispanic whites. Mood disorder was the fourth leading cause of hospitalization for both non-Hispanic whites and blacks, but it was not among the

10 leading causes of hospitalization for the Asian and Hispanic populations. Asthma and diabetes were the eighth and ninth leading causes of hospitalization among non-Hispanic blacks, but not among the 10 leading causes of hospitalization for any other racial or ethnic group (table not shown).

Table 64: Hospitalization by Principal Diagnosis, Anne Arundel County, 2013

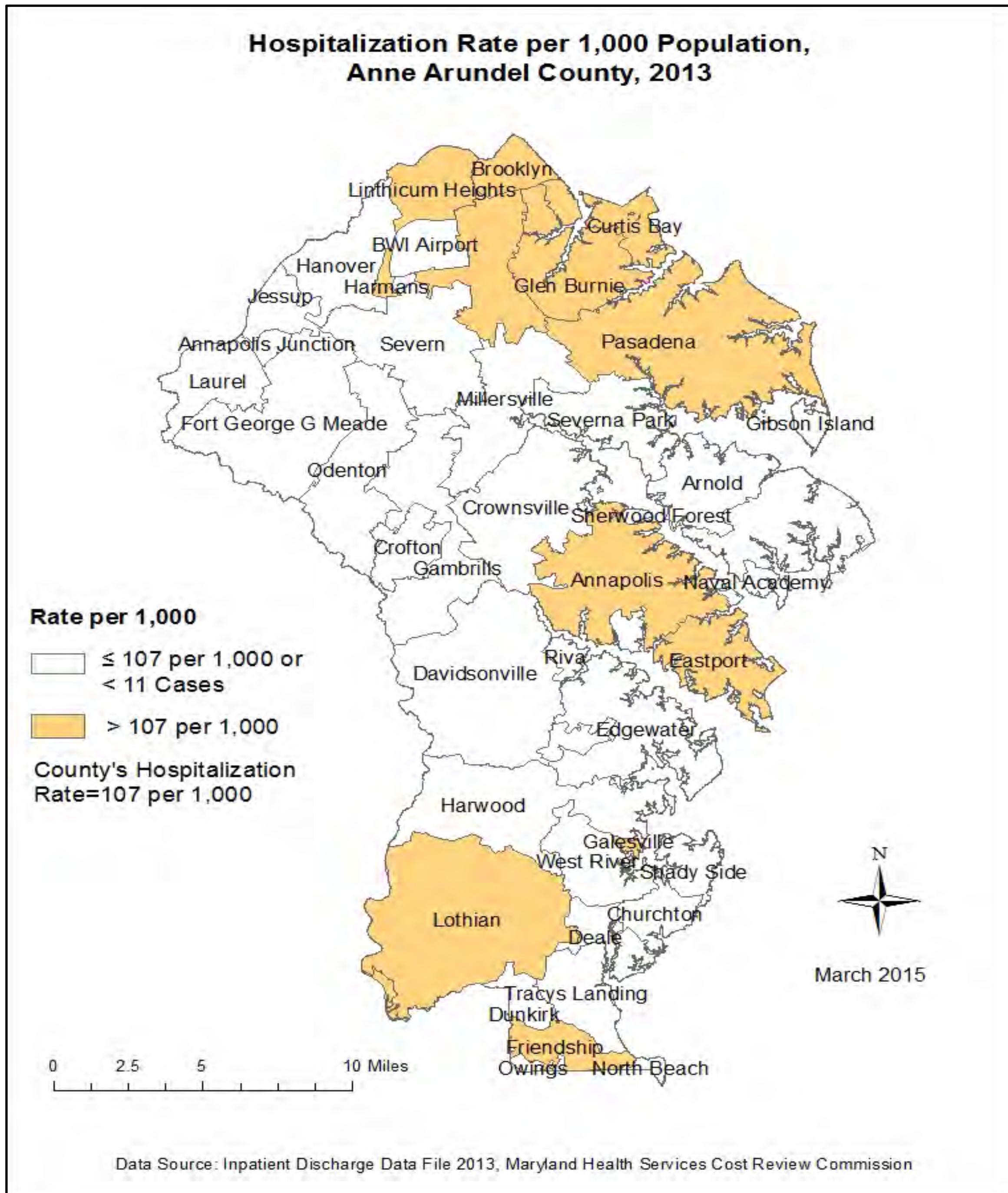
	Principal Diagnosis	Number of Hospitalization	Percent
1	Live born	6,437	10.8%
2	Septicemia (except in labor)	1,923	3.2%
3	Mood disorders	1,842	3.1%
4	Osteoarthritis	1,790	3.0%
5	Pneumonia (except cases that were caused by tuberculosis or sexually transmitted disease)	1,464	2.5%
6	Congestive heart failure; nonhypertensive	1,399	2.4%
7	OB-related trauma to perineum and vulva	1,337	2.3%
8	Complication of device; implant or graft	1,281	2.2%
9	Spondylosis; intervertebral disc disorders; other back problems	1,235	2.1%
10	Skin and subcutaneous tissue infections	1,216	2.0%

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Crude Hospitalization Rates per 1,000 Population by ZIP Code, Anne Arundel County, 2013

Patterns of hospitalization by ZIP code resemble that of the Emergency Department visits. Eastport, Galesville, Pasadena, Lothian, Annapolis (21401), Linthicum Heights, Glen Burnie (21060 and 21061), Curtis Bay, Harmans, Friendship and Brooklyn have higher hospitalization rates than the county average or 107 per 1,000 population. Brooklyn has the highest hospitalization rate among all ZIP codes (185.2 per 1,000), 80% higher than that of the county average.

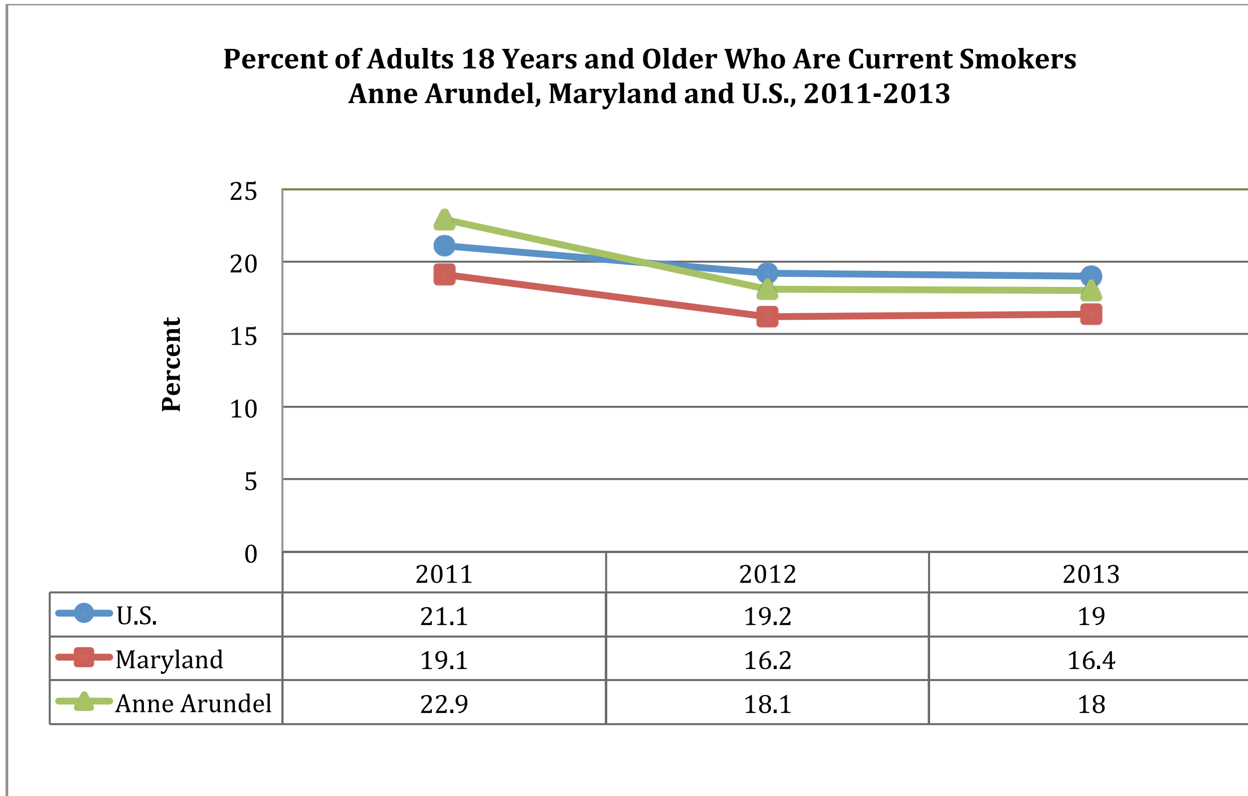
Health Behaviors



Tobacco Use

Cigarette smoking is the leading cause of preventable disease and death. Smoking is associated with an increased risk of heart disease, stroke, lung and other types of cancers, and chronic lung diseases (CDC).

In Anne Arundel County, 4.6 % of high school students smoke cigarettes regularly, higher than the state rate of 3.6%. (Youth Risk Behavior Survey Results, 2013). Among adults in the county, approximately 77,300 (18%) smoke cigarettes, higher than the 16.4 % who smoke statewide in Maryland. In the U.S., 19% of adults are current smokers.



	2011	2012	2013
U.S.	21.1	19.2	19
Maryland	19.1	16.2	16.4
Anne Arundel	22.9	18.1	18

Source: Behavioral Risk Factor Surveillance Systems, Centers for Disease Control and Prevention, 2011-2013

Overweight and Obesity

Overweight and obesity are major public health problems affecting adults and children in Anne Arundel County. Obesity is associated with heart disease, stroke, type 2 diabetes and certain types of cancer.

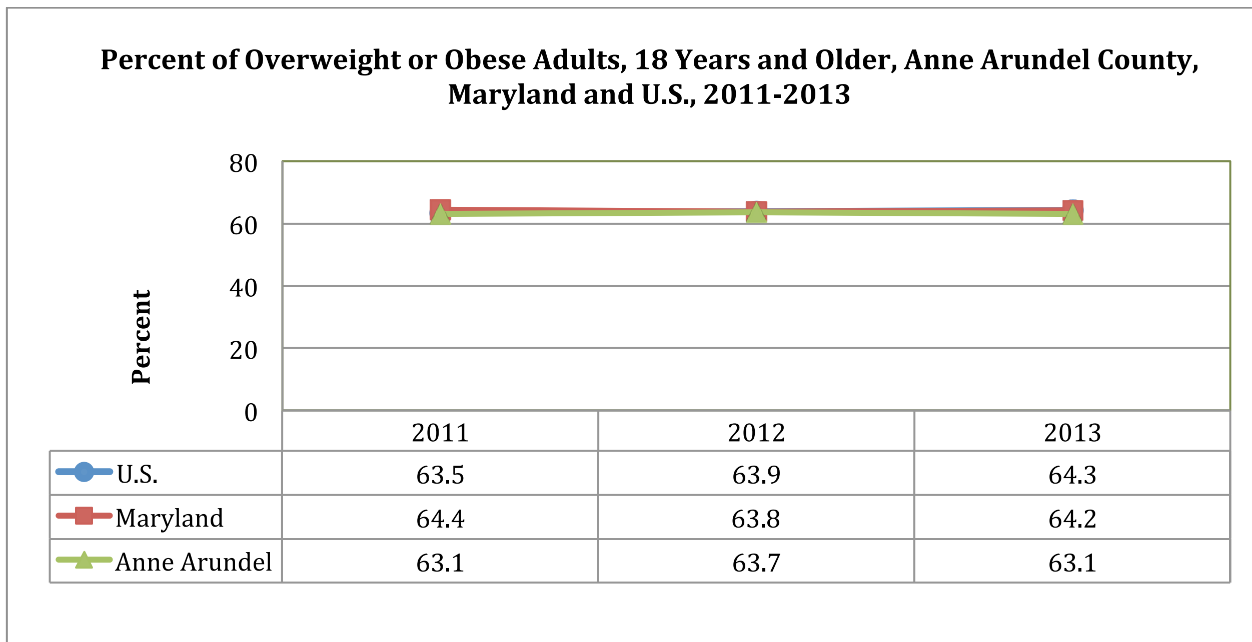
For adults, the Body Mass Index (BMI) is interpreted using standard weight status categories. These categories are the same for men and women of all body types and ages.

Table 65: Body Mass Index (BMI) Table

Body Mass Index (BMI)	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal or Healthy Weight
25.0 – 29.9	Overweight
30.0 and Above	Obese

Source: Centers for Disease Control and Prevention

In Anne Arundel County, approximately, 270,500 (63%) of the population over 18 years is overweight or obese. The overweight and obesity rates in Anne Arundel County are similar to overweight and obesity rates in Maryland and the U.S.



	2011	2012	2013
U.S.	63.5	63.9	64.3
Maryland	64.4	63.8	64.2
Anne Arundel	63.1	63.7	63.1

Source: Behavioral Risk Factor Surveillance Systems, Centers for Disease Control and Prevention, 2011-2013

Obesity results from a combination of causes including individual behaviors and genetics. Consuming a healthy diet and regular physical activity are important to maintain normal weight. In 2013, only 24.2% of Anne Arundel County adults reported meeting recommended guidelines of vigorous aerobics and muscle strengthening physical activity per week.

Approximately, 69,000 (12%) of residents live in neighborhoods categorized as food deserts. A food desert is an area where residents have low or no access to healthy foods. Limited access to healthy food often leads to poor diets and high levels of obesity and other diet-related diseases.

Table 66: Prevalence of chronic health conditions among adults (18 years and over) related to obesity and smoking, Anne Arundel County, 2013

Health Condition	Prevalence %	Estimated Population
Elevated cholesterol level	37.1%	159,344
High blood pressure	33.0%	141,735
Diabetes	9.2%	39,514
Suffered heart attack	4.7%	20,186
Suffered stroke	2.7%	11,596
Angina or coronary disease	4.1%	17,609

Source: Maryland Behavioral Risk Factor Surveillance Systems, 2013; U.S. Census Bureau

Overweight and Obesity in Children and Adolescents, Anne Arundel County

Obesity among the pediatric population is concerning because it is predictive of obesity in adulthood. Monitoring trends in obesity prevalence and identifying high risk groups will allow Anne Arundel County and the Healthy Anne Arundel Coalition to target resources and measure outcomes. The Anne Arundel County Department of Health conducted pediatric weight surveillance in 2002, 2006 and 2012.

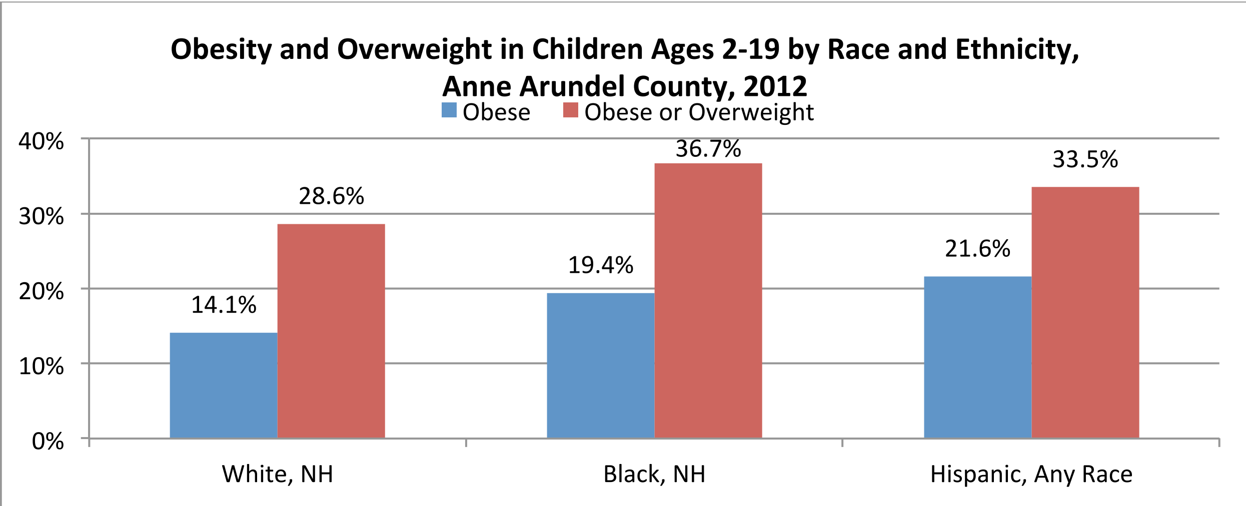
Obesity in children is defined as a Body Mass Index (BMI) greater than the 95th percentile for age and sex. Overweight is defined as a BMI between the 85th and 95th percentiles.

The prevalence of obesity among county children and adolescents is similar to that nationwide, but it did increase between 2006 and 2012.

Table 67: Obesity and Overweight in Children Ages 2-19, Anne Arundel County and U.S.

	Anne Arundel County		U.S.
Weight Status	**2006**	**2012**	**2009-2010**
Obese	15.6%	17.3%	16.9%
Overweight or obese	32.6%	32.4%	31.8%
Obesity by Age Group			
2-5 yrs.	16.5%	17.0%	12.1%
6-11 yrs.	16.1%	20.6%	18.0%
12-19 yrs.	14.0%	15.5%	18.4%
Obesity by Sex			
Male	17.6%	19.4%	18.6%
Female	13.5%	15.2%	15.0%

Source: Anne Arundel County Department of Health, Provider-based County Survey of Children and Adolescents, 2012; U.S. data from Ogden CL, Carroll MD, Kit BK, Flegal KM. "Prevalence of Obesity and Trends in Body Mass Index among US Children and Adolescents, 1999-2010." JAMA. 2012; 307(5).



Source: Anne Arundel County Department of Health, Provider-based County Survey of Children and Adolescents, 2012

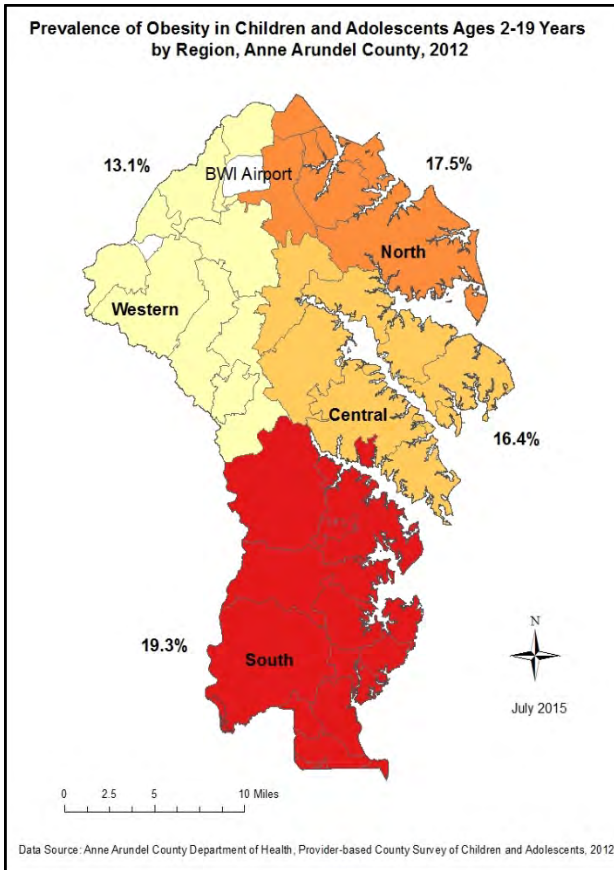
Obesity and Overweight in Children and Adolescents by Region, Anne Arundel County, 2012

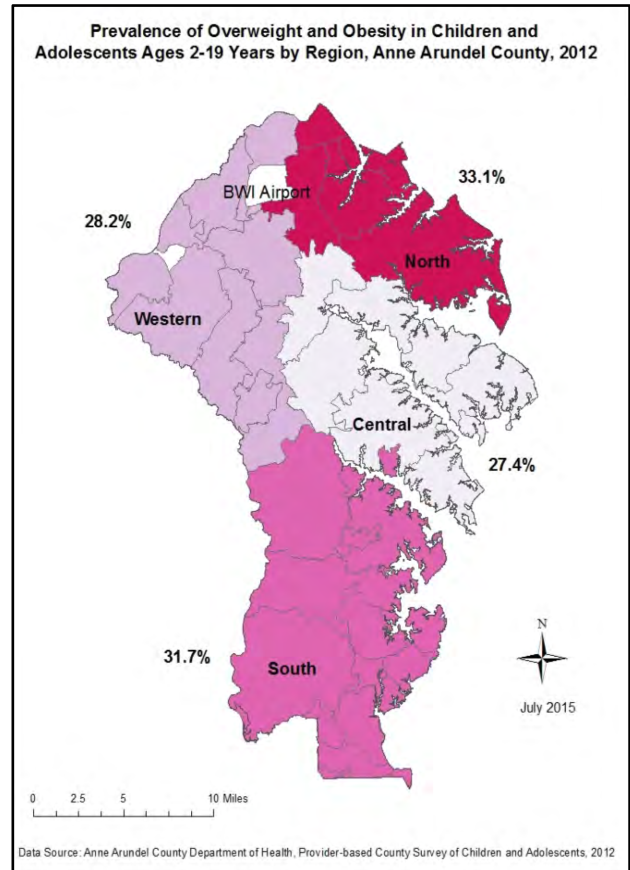
The northern region of the county has the highest percent of children who are obese or overweight (33.1%), followed by the southern (31.7%), western (28.2%) and central (27.4%) regions. Prevalence of obesity among children is highest in the southern region (19.3%), followed by northern (17.5%), central (16.4%) and western (13.1%) regions.

Table 68: Obesity and Overweight in Children Ages 2-19 by Region, Anne Arundel County, 2012

County Region	Obese	Obese or Overweight
North	17.5%	33.1%
West	13.1%	28.2%
Central	16.4%	27.4%
South	19.3%	31.7%

Source: Anne Arundel County Department of Health, Provider-based County Survey of Children and Adolescents, 2012

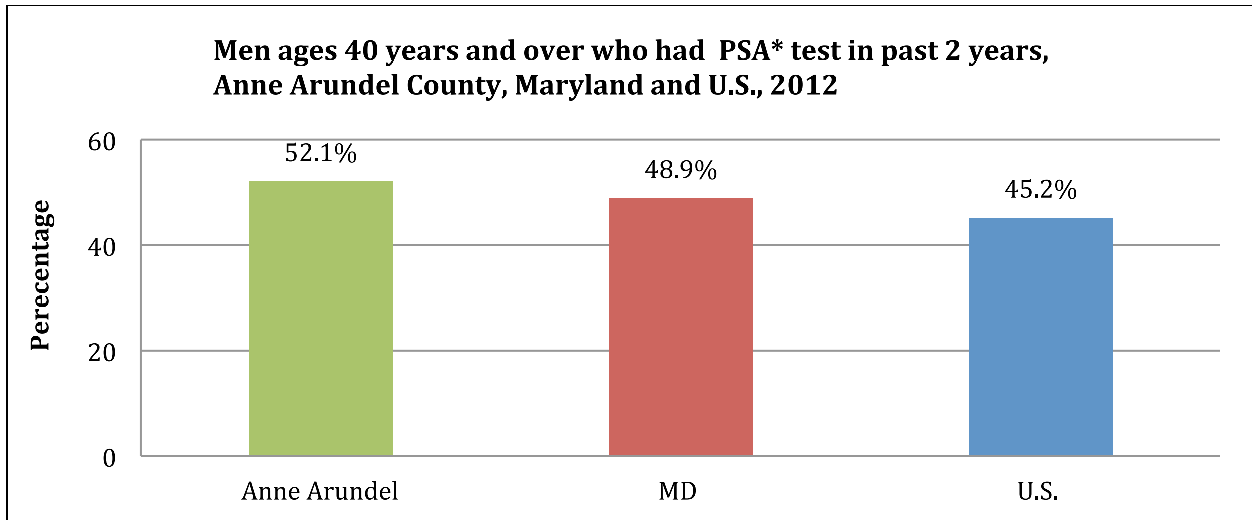




Cancer Screening

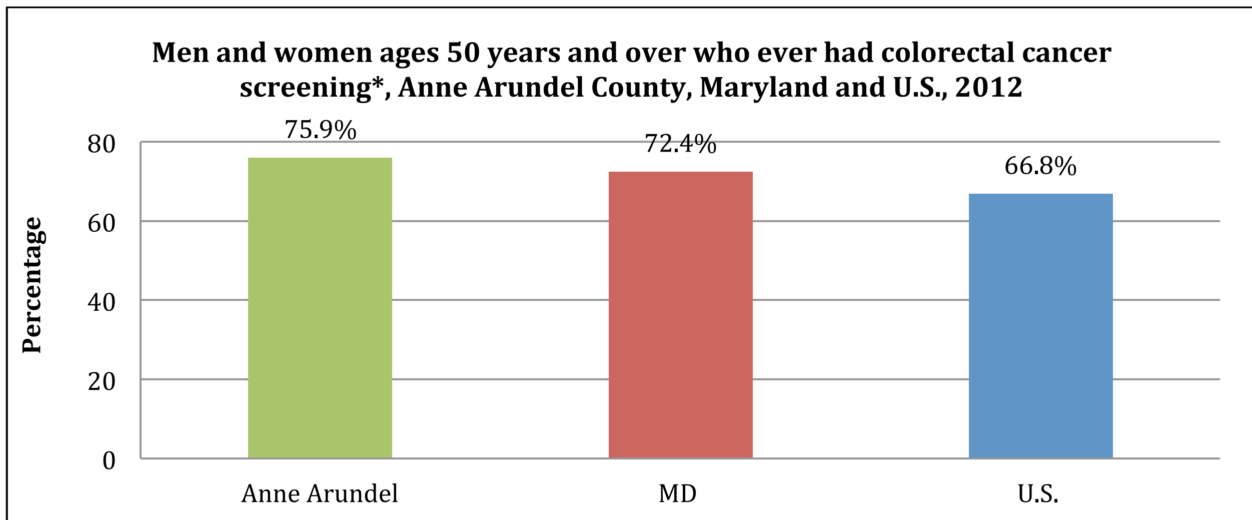
Cancer is the leading cause of death among Anne Arundel County residents. In 2013, out of the 4,042 deaths that occurred among Anne Arundel County residents, 1006 deaths (25%) were due to cancer. Early detection greatly increases the opportunity for successful cancer treatment.

In 2012, 52.1% of Anne Arundel County men aged 40 years and above had a prostate cancer screening with a prostate-specific antigen (PSA) test within the past two years. This is slightly higher than Maryland and the U.S. There were still 60,030 men (47.9%) unscreened.



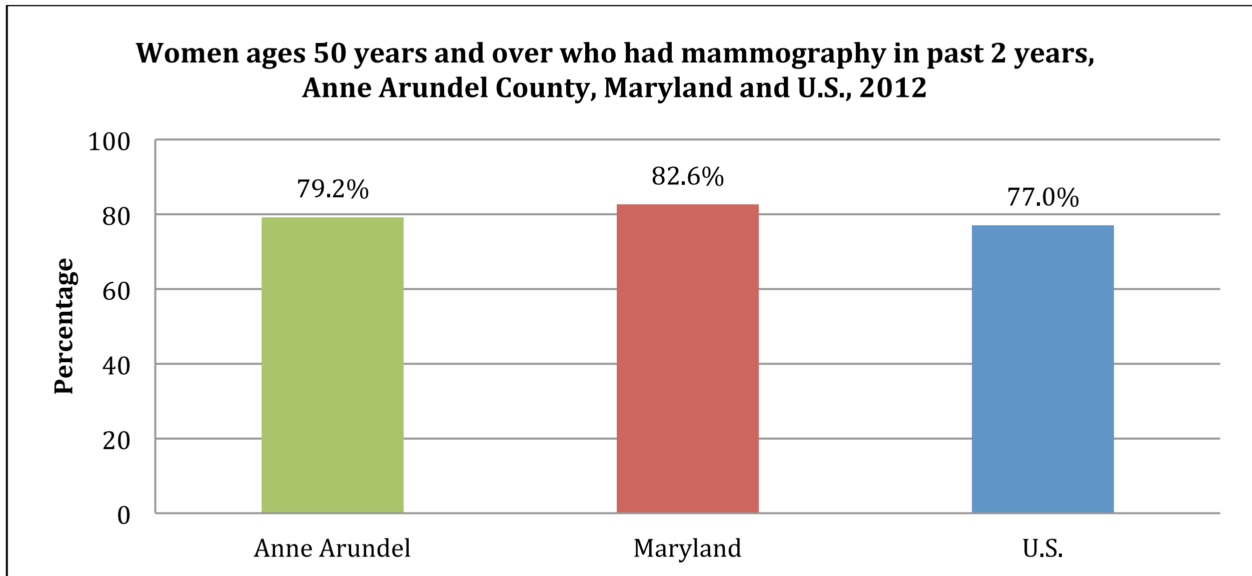
* Prostate-specific antigen
Source: The Behavioral Risk Factor Surveillance System (BRFSS)

In 2012, 75.9% of Anne Arundel County men and women aged 50 years and above had a colorectal cancer screening with sigmoidoscopy or colonoscopy, higher than Maryland and the U.S. An estimated 43,904 (24.1%) of county residents over 50 years remained unscreened.



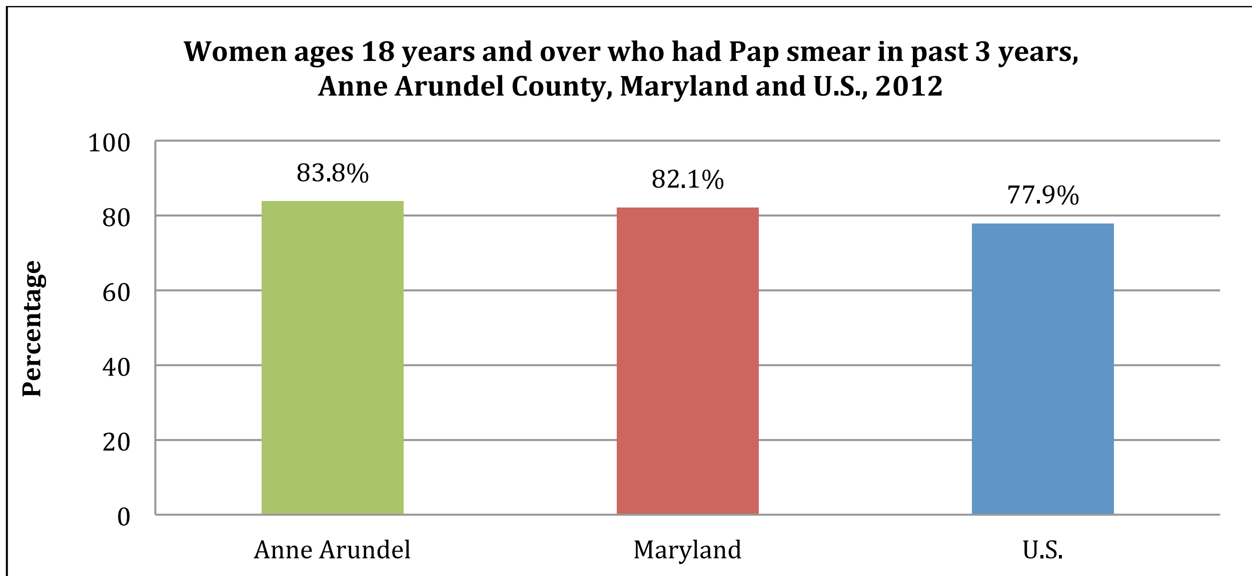
* Colorectal Cancer Screening with Sigmoidoscopy or Colonoscopy only
Source: The Behavioral Risk Factor Surveillance System (BRFSS)

In 2012, 79.2% of Anne Arundel County women aged 50 years and above had breast cancer screening with mammography within the past two years, lower than Maryland (82.9%). An estimated 20,174 (20.8%) county women over 50 years remained unscreened.



Source: The Behavioral Risk Factor Surveillance System (BRFSS)

In 2012, 83.9% of Anne Arundel County women aged 18 years and above were screened for cervical cancer with a Pap smear test within the past three years, higher than Maryland and the U.S. An estimated 35,123 (16.2%) women over 18 years remained unscreened.



Source: The Behavioral Risk Factor Surveillance System (BRFSS)

Table 69: Population not Screened for Selected Cancer, Anne Arundel County, 2012

Cancer Screening	Target Group	Total Population	Percentage not Screened	Estimated Population not Screened
Prostate Specific Antigen (PSA) in past 2 years	Men 40 years and above	125,323	47.9%	60,030
Colorectal Cancer Screening with Sigmoidoscopy or Colonoscopy	Men and women 50 years and above	182,173	24.1%	43,904
Mammography in Past 2 Years	Women 50 years and above	96,993	20.8%	20,174
Pap Smear in Past 3 Years	Women 18 years and above	216,810	16.2%	35,123

Source: The Behavioral Risk Factor Surveillance System (BRFSS); Population data from U.S. Census Bureau, Population Estimates Program, 2012

Health Care Access

Access to comprehensive, quality health care services is important to achieve health equity and increase the quality of life for county residents. Access to health services encompasses four components: insurance coverage, services, timeliness and workforce. (U.S. Department of Health and Human Services (HHS), Office of Disease Prevention and Health Promotion, Healthy People 2020)

Barriers to Access to Health Care

Lack of health insurance

Health insurance coverage is an important determinant of access to health care. Without health insurance coverage, many people find health care unaffordable and do not seek health care when they need it. In 2013, an estimated 22.2% of Hispanics, 9% of Asians, 7.7% of non-Hispanic blacks and 4.7% of non-Hispanic whites did not have health insurance. Overall, 6.6% of Anne Arundel County residents did not have health insurance coverage in 2013. The number of uninsured most likely decreased in 2014 as a result of The Patient Protection and Affordable Care Act (ACA). Under the ACA, all residents legally living in the U.S. have the option to purchase health insurance through the Maryland Health Connection (the state's insurance marketplace/exchange). To date, information is not available for how many uninsured residents gained coverage through the ACA. A small percentage of county residents, such as undocumented people, those not enrolled in Medicaid despite being eligible and people opting to pay the annual penalty instead of purchasing insurance, will still remain uninsured.

Lack of financial resources

Lack of financial resources is a barrier to health care. In Anne Arundel County, 33,352 residents (6.3%) live below the poverty level, among which 4.4 % are non-Hispanic whites, 12.7% are non-Hispanic blacks, 9.4% are Hispanics and 11% are Asian.

Irregular source of care

Having a primary care provider reduces nonfinancial barriers to obtaining care, facilitates access to services and increases the frequency of contacts with health care providers. Without a primary care provider, people have more difficulty obtaining prescriptions and attending necessary appointments.

Language barriers

Poor English language skills make it difficult for residents to understand basic health information. Language barriers can lead to decreased quality of care, safety and patient satisfaction. Language barriers can also contribute to health disparities among people with insurance. Almost 11% of residents who are age 5 and over speak a language other than English as their primary language.

Structural barriers

Examples of structural barriers include lack of transportation, inability to obtain convenient appointment times and lengthy waiting room times. These factors reduce the likelihood of an individual successfully making and keeping a health care appointment.

Anne Arundel County lacks a reliable public transportation system. There are multiple bus routes in the county, but they are concentrated in the northern region and in the Annapolis parts of the central region. Approximately 8,860 (2%) residents over 16 years of age lack personal transportation. Most hospitals and health centers are located in the northern and central regions of the county.

Inadequate public transportation is not only a barrier to health care — it is also a barrier to employment opportunities, social services, access to healthy food and other factors which impact health.

Legal obstacles

Undocumented people have legal obstacles to obtaining health care. Both the ACA and Medicaid do not cover undocumented people. For certain limited emergency care issues, undocumented people can receive Medicaid benefits. Data are not available for the number of undocumented people residing in Anne Arundel County.

Adults who are permanent residents (green card) are eligible to apply for subsidized marketplace/exchange insurance under the ACA, but are prohibited from applying for Medicaid for a five-year waiting period with limited exceptions for certain refugee groups. Medicaid services are available for lawfully present pregnant women and children prior to the five-year waiting period.

Potentially Preventable Hospitalizations

Preventable hospitalizations occur when people are hospitalized for a medical condition that could have been avoided had they received sufficient primary and preventive care earlier. By identifying the burden of preventable hospitalizations among different patient subpopulations, communities most in need can be identified.

The Prevention Quality Indicators (PQIs) are a set of measures that can be used with hospital inpatient discharge data to identify quality of care for ambulatory care sensitive conditions. These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease. Even though these indicators are based on hospital inpatient data, they provide insight into the community health care system or services outside the hospital setting.

Table 70: Number of Potentially Preventable Hospitalization (Excluding Low Birth Weight), Anne Arundel County, 2013

	Prevention Quality Indicators (PQIs)	Number of Hospitalizations
PQI #1	Diabetes Short-Term Complications Admission	274
PQI #3	Diabetes Long-Term Complications Admission	431
PQI #5	COPD or Asthma in Older Adults Admission	1,436
PQI #7	Hypertension Admission	113
PQI #8	Heart Failure Admission	1,433
PQI #13	Angina without Procedure Admission	50
PQI #14	Uncontrolled Diabetes Admission	26
PQI #15	Asthma in Younger Adults Admission	70
PQI #16	Lower-Extremity Amputation among Patients with Diabetes	66
	Prevention Quality Chronic Composite	***3,899***
PQI #10	Dehydration Admission	371
PQI #11	Bacterial Pneumonia Admission	1,048
PQI #12	Urinary Tract Infection Admission	706
	Prevention Quality Acute Composite	***2,125***
PQI #2	Perforated Appendix Admission	123
	Total: Potentially Preventable Hospitalizations	**6,147**

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

In 2013, 6,568 of 59,533 (11%) hospital admissions of Anne Arundel County residents were potentially preventable.

Females have a high burden of preventable hospitalizations (56%) compared to males (44%). Among the dual eligible, 68% of preventable hospitalization were among females.

Most of the preventable hospitalizations were among people aged 65 and above: 56% among all payers, 87% among Medicare, and 53% among dual eligible (except in the Medicaid population) in which 64% were age 45 to 64 years.

Overall, non-Hispanic blacks have disproportionately higher preventable hospitalizations. Approximately 20% of total preventable hospitalizations were among non-Hispanic blacks while the county's non-Hispanic black population is only around 16%. Fifty-nine percent of all preventable hospitalizations in Anne Arundel County residents were because of chronic conditions and 32% were because of acute conditions. (Note: This data only includes Anne Arundel County residents admitted to hospitals in Maryland.)

Table 71: Potentially Preventable Hospitalization by Race and Ethnicity (Excluding Low Birth Weight), Anne Arundel County, 2013

Race/Ethnicity	Potentially Preventable Hospitalizations	Rate per 1,000
Asian	307	18.3
Black NH	1,229	19.7
Hispanic Any Race	123	4.9
White NH	4,057	12.9
Total	6,147	14.3

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 72: Potentially Preventable Hospitalization by Gender (Excluding Low Birth Weight), Anne Arundel County, 2013

Gender	Potentially Preventable Hospitalizations	Rate
Male	2,705	12.8
Female	3,442	15.8

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 73: Potentially Preventable Hospitalization by Age Group (Excluding Low Birth Weight), Anne Arundel County, 2013

Age Group	Potentially Preventable Hospitalizations	Rate per 1,000
18 to 44 yrs.	738	3.7
45 to 64 yrs.	1,967	12.7
Greater than 64 yrs.	3,442	47.4

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Potentially Preventable Hospitalization Crude Rate per 1,000 Population (Excluding Low Birth Weight) by ZIP Code, Anne Arundel County Residents, 2013

Friendship, Brooklyn, Glen Burnie (21060 and 21061), Curtis Bay, Lothian, Tracys Landing, North Beach, Annapolis (21401), Churchton, Pasadena and Linthicum Heights have higher potentially preventable hospitalization rates than the county average of 14.3 per 1,000 population. Friendship has a rate three times higher and Brooklyn has a rate two times higher than the county's average preventable hospitalization rate.

Potentially Preventable Admissions Rate per 1,000 (Excluding Low Birth Weight), Anne Arundel County, 2013

Rate per 1,000

<14.0 per 1,000 or < 11 Cases

14.0-28 per 1,000

> 28 per 1,000

County's Admission Rate=14.3 per 1,000

April 2015

Data Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Health Professional Shortage Areas (HPSA)

Health Professional Shortage Areas (HPSAs) are designated by the Health Resources and Services Administration (HRSA) as having shortages of primary medical care, dental or mental health providers and may represent geographic areas; populations, e.g., low income or Medicaid eligible; or facilities, i.e., federally qualified health center or other state or federal prisons. There are three categories of HPSAs: primary care (shortage of primary care clinicians), dental (shortage of oral health professionals), and mental health (shortage of mental health professionals). HPSAs are designated using several criteria, including population-to-clinician ratios. This ratio is usually 3,500 to 1 for primary care, 5,000 to 1 for dental health care, and 30,000 to 1 for mental health care.

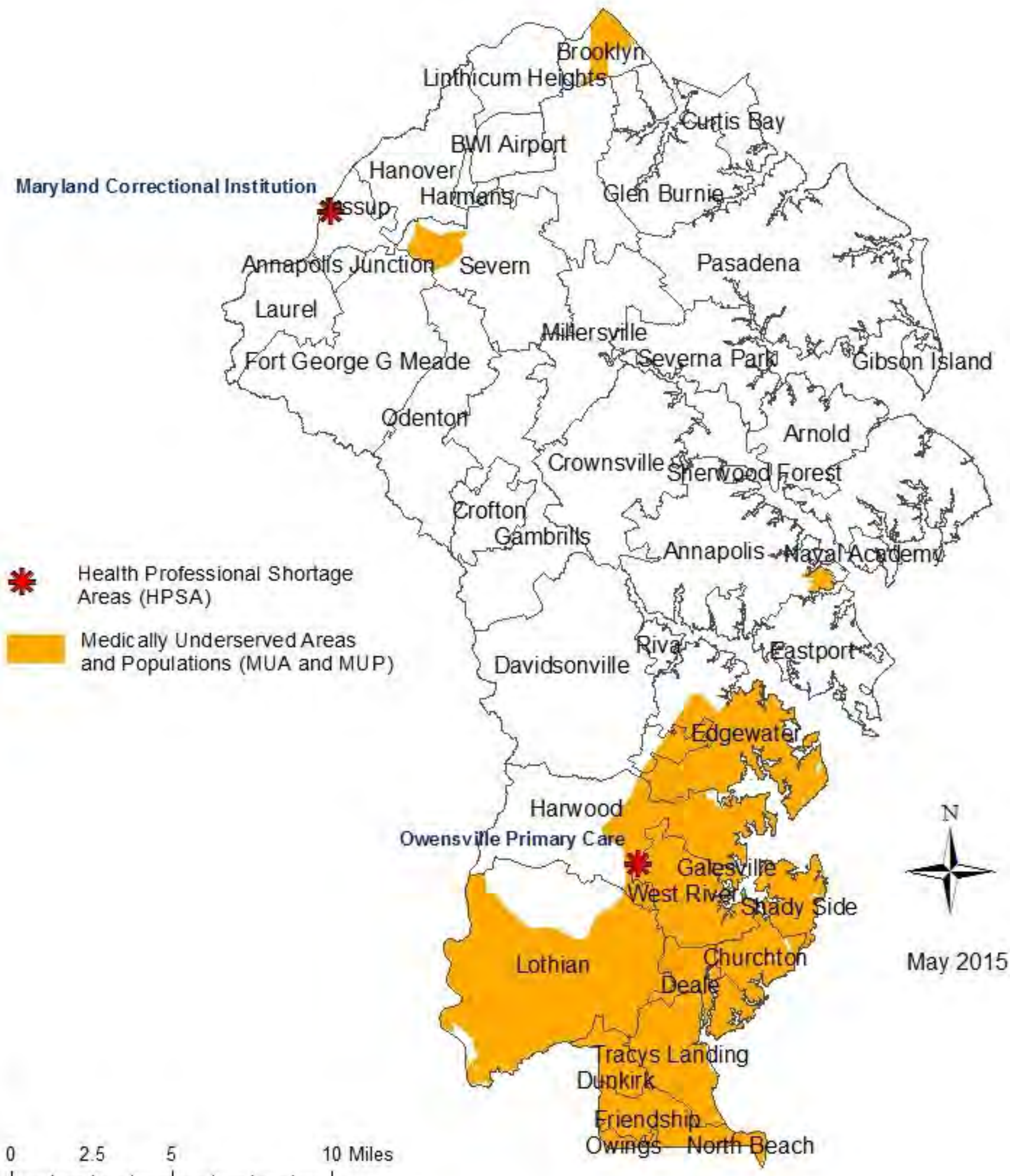
Physicians and nurses are not evenly distributed across Anne Arundel County. The county currently has one designated Primary Care HPSA (Owensville Primary Care), one Dental HPSA (Owensville Primary Care) and two Mental Health HPSAs (Owensville Primary Care and Maryland Correctional Institution, Jessup). The Maryland Correctional Institution in Jessup is a state-run institute.

Medically Underserved Areas and Population

Medically Underserved Areas (MUA) may be a whole county, group of contiguous counties, a group of county or civil divisions, or a group of urban census tracts in which residents have a shortage of personal health services. An MUA is determined based on four variables: ratio of primary medical care physicians per 1,000 population; infant mortality rate; percentage of the population with incomes below the poverty level; and percentage of the population age 65 or over.

Medically Underserved Population (MUP) may include groups of people who face economic (low-income or Medicaid-eligible populations), cultural or linguistic barriers to primary medical care services.

There are 11 census tracts in Anne Arundel County which are designated as medically underserved areas or populations. Approximately, 54,700 (10%) of the county's population lives in these 11 census tracts, out of which 12% are age 65 and over and 23% are under 18 years of age. Seventy-four percent of the population who lives in these census tracts are non-Hispanic white, 15% are non-Hispanic black, 5% are Hispanic of any race and 2% are Asian.


Health Professional Shortage Areas (HPSA) and
Medically Underserved Areas and Populations (MUA/P)
Anne Arundel County, 2015
Brooklyn
Linthicum Heights
Curtis Bay
BWI Airport
Hanover
Maryland Correctional Institution
Jessup
Harmans
Glen Burnie
Annapolis Junction
Severn
Pasadena
Laurel
Millersville
Fort George G Meade
Severna Park
Gibson Island
Odenton
Arnold
Crownsville
Sherwood Forest
Crofton
Gambrills
Annapolis
Naval Academy
Health Professional Shortage Areas (HPSA)
Medically Underserved Areas and Populations (MUA and MUP)
Davidsonville
Riva
Eastport
Edgewater
Harwood
Owensville Primary Care
Galesville
West River
Shady Side
Lothian
Churchton
Deale
May 2015
Tracys Landing
Dunkirk
Friendship
Owings
North Beach
0
2.5
5
10 Miles
Data Source: U.S. Department of Health and Human Services, Health Resources and Services Administration.
Date accessed 05/13/2015

Health Care Providers in Anne Arundel County

According to the County Health Rankings, the patient to primary care physician ratio in Anne Arundel (1,430:1) is worse than in Maryland (1,131:1) and the U.S. (1,045:1 for top performing counties in the 90th percentile ranking). Similarly, the patient to dentist and mental health provider ratios in Anne Arundel are worse than in Maryland and the U.S. top performing counties. Compared to Maryland, Anne Arundel County has 21.6% less primary care physicians, 8.5 % less dentists, and 31% of the mental health providers per 100 population.

Table 74: Primary Care Physicians, Dentists and Mental Health Providers in Anne Arundel County and Maryland

	Anne Arundel County Total	Anne Arundel County Ratio	Maryland Ratio	Top U.S. Counties (90th percentile)
Primary Care Physicians (2012)	385	1,430:1	1,131:1	1,045:1
Dentists (2013)	366	1,518:1	1,392:1	1,377:1
Mental Health Providers (2014)	774	718:1	502:1	386:1

Source: U.S. County Health Rankings & Roadmaps, 2015

Projected Physician Deficits

In 2014, the Advisory Board Company conducted a Physician Needs Assessment for the University of Maryland Medical System and projected physician deficits for the year 2019. The study found that under the current scenario, there could be a 220.2 full-time equivalency physician deficit in 2019. Primary care, psychiatry and general surgery are projected to have the most physician deficits.

Table 75: Physician Deficits Projected for the Year 2019 (Using Ratio Methodology Adjusting for Expected Attrition)

Specialty	Expected Deficits (FTE*)
Primary Care	
Family Practice/UC	14.4
Internal Medicine	66.3
General Pediatrics	34.6
Medicine	
Allergy and Immunology	2.3
Infectious Disease	3.1
Occupational Medicine	6.1
Physiatry	3.0
Psychiatry	33.8
Pulmonology/Critical Care	4.4
Surgical	
Cardiothoracic Surgery	3.2
Colon and Rectal Surgery	0.3
General Surgery	20.7
Neurosurgery	1.1
Orthopedic Surgery	4.4
Otolaryngology	3.8
Obstetrics and Gynecology	
Obstetrics and Gynecology	3.5
Gynecological Oncology	2.0
Reproductive Endocrinology	0.5
Hospital Based	
Emergency Medicine	3.3
Pathology	25.8
Radiation Oncology	5.3
Radiology	38.0
Total	220.2

Note: The Anesthesiology, Emergency Medicine, Pathology, and Radiology deficits may be overstated;
*FTE= full-time equivalency
Data Source: University of Maryland Medical System, Physician Needs Assessment, 2014 (The Advisory Board Company)

Health Status of Older Adults

Older adults are often living on a fixed income. Many older adults age 65 years and over have health insurance through Medicare. Older adults are more likely to experience transportation problems and suffer from a lack of mobility. This population is at high risk for developing chronic illnesses and related disabilities. Almost 66% of Medicare beneficiaries in Anne Arundel County have at least

two chronic health conditions and 13% have more than six chronic health conditions. Older adults use many health care services and require care coordination and professional expertise that meet their needs.

Table 76: Prevalence of Chronic Conditions in Medicare Beneficiaries, Anne Arundel County, Maryland and U.S., 2013

Disease Prevalence among Medicare Beneficiaries	Anne Arundel County Percent (Count)	Maryland Percent	U.S. Percent
Heart attack	0.8% (533)	0.8%	0.8%
Atrial fibrillation	8.6% (6,004)	7.9%	7.9%
Chronic kidney disease	15.2% (10,553)	16.5%	16.0%
Chronic obstructive pulmonary disease	9.6% (6,666)	9.8%	11.2%
Depression	13.6% (9,419)	14.2%	15.8%
Diabetes	26.5% (18,411)	28.8%	26.9%
Heart failure	11.7% (8,128)	13.1%	14.1%
Ischemic heart disease	25.3% (17,565)	27.3%	27.7%
Breast cancer	3.4% (2,385)	3.3%	2.9%
Colorectal cancer	1.2% (869)	1.3%	1.2%
Lung cancer	1.3% (872)	1.1%	1.0%
Prostate cancer	3.2% (2,219)	3.3%	3.0%
Asthma	4.6% (3,176)	5.1%	5.0%
Hypertension	55.9 % (38,863)	59.5%	55.4%
High cholesterol	47.3% (32,829)	49.3%	44.9%
Arthritis	28.5% (19,806)	29.2%	29.2%
Osteoporosis	5.7 % (3,986)	6.0%	6.1%
Alzheimer's and related disorders	9.0% (6,243)	10.3%	10.3%
Stroke	4.1% (2,859)	4.3%	3.7%

Source: Centers for Medicare and Medicaid Services

Table 77: Medicare Beneficiaries, Anne Arundel County, 2012

Number of Chronic Conditions	Count of Beneficiaries in County	Prevalence (%)	Per Capita Medicare Spending ($)	30 Day Readmission Rate (%)	ED Visits per 1,000 Beneficiaries
0 to 1	66,895	34.34	1,811	8.36	163
2 to 3	66,895	31.60	5,290	9.09	399
4 to 5	66,895	20.79	10,643	14.18	788
6+	66,895	13.27	29,895	26.85	2,198

Source: Centers for Medicare and Medicaid Services

Population and Health Data by ZIP Code

Table 78: Population by ZIP Code, Anne Arundel County, 2013

ZIP	Area	White, NH	Black, NH	Hispanic, Any Race	Asian	Total
20701*	Annapolis Junction	-	-	-	-	-
20711	Lothian	4,879	1,161	371	31	6,592
20714*	North Beach	760	41	73	5	915
20724	Laurel	5,723	6,660	1,840	1,150	16,024
20733	Churchton	2,327	118	184	-	2,873
20736*	Owings	-	-	-	-	12
20751	Deale	2,105	52	85	-	2,273
20754*	Dunkirk	857	74	15	24	1,016
20755	Ft. George G Meade	5,730	2,272	1,329	419	10,369
20758	Friendship	508	51	-	-	559
20764	Shady Side	3,884	695	37	-	4,643
20765	Galesville	415	50	-	-	465
20776	Harwood	3,086	456	104	-	3,672
20778	West River	1,843	168	61	-	2,085
20779	Tracys Landing	1,334	23	-	9	1,375
20794*	Jessup	2,927	2,841	489	313	6,721
21012	Arnold	18,257	516	827	623	20,781
21032	Crownsville	7,955	382	198	102	8,743
21035	Davidsonville	7,286	229	169	140	7,899
21037	Edgewater	18,316	629	1,166	370	21,050
21054	Gambrills	7,525	677	194	811	9,589
21056	Gibson Island	222	-	-	-	222
21060	Glen Burnie (East)	19,856	4,990	2,742	798	29,233
21061	Glen Burnie (West)	30,903	12,181	5,062	2,727	53,491
21076*	Hanover	6,227	3,112	447	1,767	11,999
21077	Harmans	155	-	-	-	155
21090	Linthicum Heights	8,974	586	120	171	9,986
21108	Millersville	13,846	1,707	720	718	17,890
21113	Odenton	18,226	8,341	1,424	1,722	31,219
21114	Crofton	20,372	3,563	1,125	598	26,636
21122	Pasadena	53,440	3,411	1,880	906	60,968
21140	Riva	3,061	-	176	53	3,338
21144	Severn	16,218	10,412	2,397	1,687	32,328
21146	Severna Park	23,711	991	334	1,121	26,703
21225*	Brooklyn	6,072	6,494	913	453	14,721
21226*	Curtis Bay	3,367	717	116	38	4,378
21240	BWI Airport	-	-	-	-	-
21401	Annapolis	25,800	6,091	3,774	903	36,938
21402	Naval Academy	4,120	709	576	210	6,212
21403	Eastport	19,935	4,439	4,842	577	30,352
21405	Sherwood Forest	525	-	-	-	525
21409	Annapolis	17,019	1,306	1,250	469	20,355
	Anne Arundel County	**393,897**	**87,556**	**38,330**	**20,280**	**556,348**

*ZIP codes shared with other counties; data presented is estimates for the Anne Arundel County only.
Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates; U.S. Census Bureau, Population Estimate Program; Maryland Department of Planning

Table 79: Estimated Poverty Rate by ZIP Code, Anne Arundel County, 2013

ZIP Code	Area	Poverty Percentage
20701*	Annapolis Junction	-
20711	Lothian	7.3%
20714*	North Beach	9.9%
20724	Laurel	4.9%
20733	Churchton	3.1%
20736	Owings	-
20751	Deale	9.2%
20754*	Dunkirk	3.6%
20755	Ft. Meade	4.9%
20758	Friendship	6.3%
20764	Shady Side	4.7%
20765	Galesville	2.4%
20776	Harwood	3.8%
20778	West River	5.1%
20779	Tracys Landing	7.1%
20794*	Jessup	6.0%
21012	Arnold	3.8%
21032	Crownsville	3.4%
21035	Davidsonville	1.0%
21037	Edgewater	4.0%
21054	Gambrills	4.3%
21056	Gibson Island	0.0%
21060	Glen Burnie (East)	11.2%
21061	Glen Burnie (West)	10.8%
21076*	Hanover	3.9%
21077	Harmans	16.8%
21090	Linthicum Heights	8.0%
21108	Millersville	3.4%
21113	Odenton	4.5%
21114	Crofton	3.3%
21122	Pasadena	5.7%
21140	Riva	4.6%
21144	Severn	9.2%
21146	Severna Park	2.4%
21225*	Brooklyn	26.5%
21226*	Curtis Bay	16.5%
21240	BWI Airport	-
21401	Annapolis	8.0%
21402	Naval Academy	3.0%
21403	Eastport	7.5%
21405	Sherwood Forest	0.0%
21409	Annapolis	3.3%
	Anne Arundel County	**6.3%**

*ZIP codes shared with other counties
Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Table 80: Percentage of Households with Food Stamp/SNAP Benefits by ZIP Code, Anne Arundel County, 2013

ZIP Code	Area	Percent of Households on SNAP
20701*	Annapolis Junction	-
20711	Lothian	16.8%
20714*	North Beach	8.9%
20724	Laurel	2.9%
20733	Churchton	1.8%
20736*	Owings	-
20751	Deale	1.9%
20754*	Dunkirk	0.7%
20755	Ft. Meade	4.2%
20758	Friendship	0.0%
20764	Shady Side	8.1%
20765	Galesville	0.0%
20776	Harwood	1.0%
20778	West River	0.0%
20779	Tracys Landing	4.3%
20794*	Jessup	8.1%
21012	Arnold	2.9%
21032	Crownsville	3.8%
21035	Davidsonville	1.3%
21037	Edgewater	4.4%
21054	Gambrills	3.0%
21056	Gibson Island	0.0%
21060	Glen Burnie (East)	10.8%
21061	Glen Burnie (West)	11.7%
21076*	Hanover	4.1%
21077	Harmans	0.0%
21090	Linthicum Heights	5.7%
21108	Millersville	0.0%
21113	Odenton	2.7%
21114	Crofton	1.3%
21122	Pasadena	5.1%
21140	Riva	0.5%
21144	Severn	7.9%
21146	Severna Park	1.4%
21225*	Brooklyn	30.9%
21226*	Curtis Bay	22.0%
21240	BWI Airport	-
21401	Annapolis	4.3%
21402	Naval Academy	0.0%
21403	Eastport	5.7%
21405	Sherwood Forest	0.0%
21409	Annapolis	3.6%
	Anne Arundel County	**5.6%**

*ZIP codes shared with other counties
Source: Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Table 81: Estimated Population without High School or Equivalent Education by ZIP Code, Anne Arundel County, 2013

ZIP Code	Area	Percent without High School
20701*	Annapolis Junction	-
20711	Lothian	14.2%
20714*	North Beach	6.3%
20724	Laurel	11.8%
20733	Churchton	3.9%
20736*	Owings	6.5%
20751	Deale	16.4%
20754*	Dunkirk	3.9%
20755	Ft. George G Meade	2.2%
20758	Friendship	13.1%
20764	Shady Side	6.6%
20765	Galesville	3.2%
20776	Harwood	10.0%
20778	West River	0.7%
20779	Tracys Landing	4.6%
20794*	Jessup	25.4%
21012	Arnold	3.9%
21032	Crownsville	4.4%
21035	Davidsonville	4.1%
21037	Edgewater	8.7%
21054	Gambrills	4.1%
21056	Gibson Island	0.0%
21060	Glen Burnie (East)	16.6%
21061	Glen Burnie (West)	13.6%
21076*	Hanover	5.8%
21077	Harmans	0.0%
21090	Linthicum Heights	12.6%
21108	Millersville	7.7%
21113	Odenton	5.0%
21114	Crofton	3.1%
21122	Pasadena	10.0%
21140	Riva	4.5%
21144	Severn	10.4%
21146	Severna Park	3.5%
21225*	Brooklyn	25.4%
21226*	Curtis Bay	21.5%
21240	BWI Airport	0.0%
21401	Annapolis	8.4%
21402	Naval Academy	1.9%
21403	Eastport	9.7%
21405	Sherwood Forest	0.0%
21409	Annapolis	3.3%
	Anne Arundel County	**9.3%**

*ZIP codes shared with other counties
Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

Table 82: Number and Percent of Low Birth Weight Infants by ZIP Code, Anne Arundel County, 2009-2013

ZIP Code	Area	Number	Percent of All Births
20701*	Annapolis Junction	-	-
20711	Lothian	21	7.1%
20714*	North Beach	-	-
20724	Laurel	135	9.4%
20733	Churchton	15	8.8%
20736*	Owings	-	-
20751	Deale	-	-
20754*	Dunkirk	-	-
20755	Ft. Meade	84	6.6%
20758	Friendship	-	-
20764	Shady Side	18	8.0%
20765	Galesville	-	-
20776	Harwood	-	-
20778	West River	-	-
20779	Tracys Landing	-	-
20794*	Jessup	-	-
21012	Arnold	68	6.5%
21032	Crownsville	30	6.7%
21035	Davidsonville	16	7.3%
21037	Edgewater	83	7.1%
21054	Gambrills	32	7.0%
21056	Gibson Island	-	-
21060	Glen Burnie (East)	185	8.3%
21061	Glen Burnie (West)	341	8.4%
21076*	Hanover	81	8.4%
21077	Harmans	-	-
21090	Linthicum Heights	37	6.6%
21108	Millersville	78	8.1%
21113	Odenton	195	7.8%
21114	Crofton	128	7.0%
21122	Pasadena	262	7.5%
21140	Riva	-	-
21144	Severn	217	10.0%
21146	Severna Park	72	7.1%
21225*	Brooklyn	106	10.8%
21226*	Curtis Bay	25	8.0%
21240	BWI Airport	-	-
21401	Annapolis	185	7.6%
21402	Naval Academy	-	-
21403	Eastport	169	7.5%
21405	Sherwood Forest	-	-
21409	Annapolis	76	7.5%
	Anne Arundel County	**2,719**	**7.9%**

*ZIP codes shared with other counties; data presented is estimate for Anne Arundel County only. Rates for ZIP codes with less than 11 low birth weight births not presented.
Source: Maryland Department of Health and Mental Hygiene Vital Statistics Administration, 2009-2013.

Table 83: Number of ED Visits and Crude Rates per 1,000 Population by ZIP Code, Anne Arundel County, 2013

ZIP Code	Area	Number of ED Visits	Rate per 1,000
20701*	Annapolis Junction	-	-
20711	Lothian	2,665	404.3
20714*	North Beach	313	355.6
20724	Laurel	4,084	254.9
20733	Churchton	921	320.6
20736*	Owings	-	-
20751	Deale	674	296.5
20754*	Dunkirk	251	242.1
20755	Ft. Meade	2,858	275.6
20758	Friendship	259	463.3
20764	Shady Side	1,242	267.5
20765	Galesville	189	406.5
20776	Harwood	1,021	278.1
20778	West River	450	215.8
20779	Tracys Landing	292	212.4
20794*	Jessup	1,489	222.1
21012	Arnold	4,597	221.2
21032	Crownsville	2,146	245.5
21035	Davidsonville	1,489	188.5
21037	Edgewater	5,435	258.2
21054	Gambrills	2,191	228.5
21056	Gibson Island	26	117.1
21060	Glen Burnie (East)	13,136	449.4
21061	Glen Burnie (West)	26,780	500.6
21076*	Hanover	2,690	225.0
21077	Harmans	94	606.5
21090	Linthicum Heights	2,806	281.0
21108	Millersville	4,098	229.1
21113	Odenton	7,262	232.6
21114	Crofton	4,660	175.0
21122	Pasadena	17,638	289.3
21140	Riva	699	209.4
21144	Severn	10,763	332.9
21146	Severna Park	5,285	197.9
21225*	Brooklyn	14,167	960.1
21226*	Curtis Bay	2,808	647.2
21240	BWI Airport	-	-
21401	Annapolis	14,740	399.0
21402	Naval Academy	399	64.2
21403	Eastport	10,186	335.6
21405	Sherwood Forest	86	163.8
21409	Annapolis	4,259	209.2
	Anne Arundel County	**186,124**	**334.9**

*ZIP codes shared with other counties; data presented is estimate for the Anne Arundel County only.
Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 84: Number of ED Visits and Rate per 100,000 Population for Selected Health Conditions, Anne Arundel County, 2013

ZIP Code	Area	Diabetes Mellitus		Hypertension		Asthma		Heart Disease	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate
20701*	Annapolis Junction	-	-	-	-	-	-	-	-
20711	Lothian	13	197	12	182	24	364	33	501
20714*	North Beach	-	-	11	1,202	23	2,514	18	1,967
20724	Laurel	18	112	40	250	71	443	38	237
20733	Churchton	-	-	-	-	12	418	12	418
20736*	Owings	-	-	-	-	-	-	-	-
20751	Deale	-	-	-	-	-	-	-	-
20754*	Dunkirk	-	-	18	1,772	20	1,969	21	2,067
20755	Ft. George G Meade	-	-	-	-	48	463	-	-
20758	Friendship	-	-	-	-	-	-	-	-
20764	Shady Side	-	-	-	-	-	-	-	-
20765	Galesville	-	-	-	-	-	-	-	-
20776	Harwood	-	-	11	300	14	381	-	-
20778	West River	-	-	-	-	-	-	-	-
20779	Tracys Landing	-	-	-	-	-	-	-	-
20794*	Jessup	26	387	25	372	52	774	44	655
21012	Arnold	20	96	27	130	60	289	64	308
21032	Crownsville	11	126	11	126	26	297	22	252
21035	Davidsonville	-	-	11	139	17	215	16	203
21037	Edgewater	12	57	34	162	65	309	74	352
21054	Gambrills	13	136	17	177	27	282	37	386
21056	Gibson Island	-	-	-	-	-	-	-	-
21060	Glen Burnie (East)	78	267	81	277	164	561	109	373
21061	Glen Burnie (West)	187	350	159	297	436	815	177	331
21076*	Hanover	14	117	26	217	57	475	22	183
21077	Harmans	-	-	-	-	-	-	-	-
21090	Linthicum Heights	16	160	17	170	33	331	24	240
21108	Millersville	28	157	31	173	50	280	41	229
21113	Odenton	34	109	53	170	150	481	71	227
21114	Crofton	15	56	24	90	68	255	45	169
21122	Pasadena	107	176	74	121	201	330	151	248
21140	Riva	-	-	-	-	-	-	-	-
21144	Severn	62	192	77	238	229	708	62	199
21146	Severna Park	29	109	29	109	79	296	72	270
21225*	Brooklyn	188	1,277	173	1,175	785	5,333	164	1,114
21226*	Curtis Bay	46	1,051	27	617	108	2,467	33	754
21401	Annapolis	113	306	111	301	248	671	158	428
21402	Naval Academy	-	-	-	-	-	-	-	-
21403	Eastport	53	175	64	211	191	629	83	277
21405	Sherwood Forest	-	-	-	-	-	-	-	-
21409	Annapolis	25	123	25	123	50	246	49	241
	Anne Arundel County	**1,166**	**210**	**1,233**	**222**	**3,356**	**603**	**1,704**	**307**

*ZIP codes shared with other counties; data presented is estimate for the Anne Arundel County only. Rates not shown for ZIP codes with less than 11 ED visits for each primary diagnosis.

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 85: Number of ED Visits and Crude Rates per 1,000 Population for Behavioral Health Conditions by ZIP Code, Anne Arundel County, 2013

ZIP Code	Area	Number of ED Visits	Rate per 1,000
20701*	Annapolis Junction	-	-
20711	Lothian	114	17.3
20714*	North Beach	15	16.8
20724	Laurel	179	11.2
20733	Churchton	59	20.5
20736	Owings	-	-
20751	Deale	59	26
20754*	Dunkirk	-	-
20755	Ft. George G Meade	76	7.3
20758	Friendship	19	34
20764	Shady Side	70	15.1
20765	Galesville	-	-
20776	Harwood	46	12.5
20778	West River	28	13.4
20779	Tracys Landing	14	10.2
20794*	Jessup	88	13.2
21012	Arnold	358	17.2
21032	Crownsville	125	14.3
21035	Davidsonville	66	8.4
21037	Edgewater	376	17.9
21054	Gambrills	120	12.5
21056	Gibson Island	-	-
21060	Glen Burnie (East)	768	26.3
21061	Glen Burnie (West)	1573	29.4
21076*	Hanover	113	9.4
21077	Harmans	-	-
21090	Linthicum Heights	167	16.7
21108	Millersville	171	9.6
21113	Odenton	307	9.8
21114	Crofton	273	10.2
21122	Pasadena	993	16.3
21140	Riva	31	9.3
21144	Severn	445	13.8
21146	Severna Park	321	12
21225*	Brooklyn	622	42.2
21226*	Curtis Bay	141	32.3
21226	Curtis Bay	141	32.3
21240	BWI Airport	-	-
21401	Annapolis	709	19.2
21402	Naval Academy	11	1.8
21403	Eastport	434	14.3
21405	Sherwood Forest	-	-
21409	Annapolis	225	11.1
	Anne Arundel County	**9,544**	**17.2**

*ZIP codes shared with other counties; data presented is estimate for the Anne Arundel County only. Rates not shown for ZIP codes with less than 11 ED visits.

Source: Outpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 86: Number of Hospitalizations and Crude Rates per 1,000 Population by ZIP Code, Anne Arundel County, 2013

ZIP Code	Area	Number of Hospitalizations	Rate per 1,000
20701*	Annapolis Junction	-	-
20711	Lothian	763	115.7
20714*	North Beach	92	104.1
20724	Laurel	1,280	79.9
20733	Churchton	288	100.2
20736*	Owings	-	-
20751	Deale	243	106.9
20754*	Dunkirk	75	72.5
20755	Ft. Meade	559	53.9
20758	Friendship	96	171.7
20764	Shady Side	393	84.6
20765	Galesville	53	114.0
20776	Harwood	329	89.6
20778	West River	163	78.2
20779	Tracys Landing	137	99.6
20794*	Jessup	6,556	97.7
21012	Arnold	1,765	84.9
21032	Crownsville	920	105.2
21035	Davidsonville	614	77.7
21037	Edgewater	2,050	97.4
21054	Gambrills	989	103.1
21056	Gibson Island	22	99.1
21060	Glen Burnie (East)	4,497	153.8
21061	Glen Burnie (West)	7,819	146.2
21076*	Hanover	1,109	92.8
21077	Harmans	26	167.7
21090	Linthicum Heights	1,271	127.3
21108	Millersville	1,674	93.6
21113	Odenton	2,727	87.4
21114	Crofton	2,006	75.3
21122	Pasadena	7,006	114.9
21140	Riva	279	83.6
21144	Severn	3,052	94.4
21146	Severna Park	2,417	90.5
21225*	Brooklyn	2,733	185.2
21226*	Curtis Bay	676	155.8
21240	BWI Airport	-	-
21401	Annapolis	4,652	125.9
21402	Naval Academy	73	11.8
21403	Eastport	3,312	109.1
21405	Sherwood Forest	48	91.4
21409	Annapolis	1,572	77.2
	Anne Arundel County	**59,533**	**107.1**

*ZIP codes shared with other counties; data presented is estimate for the Anne Arundel County only. Rates not shown for ZIP codes with less than 11 ED visits
Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission

Table 87: Potentially Preventable Hospitalizations (Excluding Low Birth Weight) by ZIP Code, Anne Arundel County Residents, 2013

ZIP	Area	Number of Hospitalizations	Rate per 1,000
20701*	Annapolis Junction	--	--
20711	Lothian	108	21.4
20714*	North Beach	12	17.2
20724	Laurel	91	7.5
20733	Churchton	33	15.6
20736	Owings	--	--
20751	Deale	26	14.0
20754*	Dunkirk	<11	--
20755	Ft. Meade	<11	--
20758	Friendship	22	45.8
20764	Shady Side	47	13.8
20765	Galesville	<11	--
20776	Harwood	34	11.5
20778	West River	12	7.4
20779	Tracys Landing	19	17.6
20794*	Jessup	64	11.1
21012	Arnold	134	8.7
21032	Crownsville	94	13.9
21035	Davidsonville	49	8.6
21037	Edgewater	197	12.2
21054	Gambrills	80	11.0
21056	Gibson Island	<11	--
21060	Glen Burnie (East)	572	24.3
21061	Glen Burnie (West)	920	22.0
21076*	Hanover	101	10.7
21077	Harmans	<11	--
21090	Linthicum Heights	121	15.4
21108	Millersville	167	12.2
21113	Odenton	246	10.5
21114	Crofton	119	6.2
21122	Pasadena	720	15.5
21140	Riva	19	7.3
21144	Severn	296	12.6
21146	Severna Park	222	11.3
21225*	Brooklyn	314	29.6
21226*	Curtis Bay	73	22.7
21240	BWI Airport	--	--
21401	Annapolis	521	17.2
21402	Naval Academy	<11	--
21403	Eastport	341	14.0
21405	Sherwood Forest	<11	--
21409	Annapolis	143	9.5
	Anne Arundel County	**6,147**	**14.3**

*ZIP codes shared with other counties; data presented is estimate for the Anne Arundel County only. Rates not shown for ZIP codes with less than 11 ED visits

Source: Inpatient Hospital Discharge File 2013, Maryland Health Services Cost Review Commission