A Community Health Needs Assessment

Prepared for Riverside Walter Reed Hospital

By Community Health Solutions

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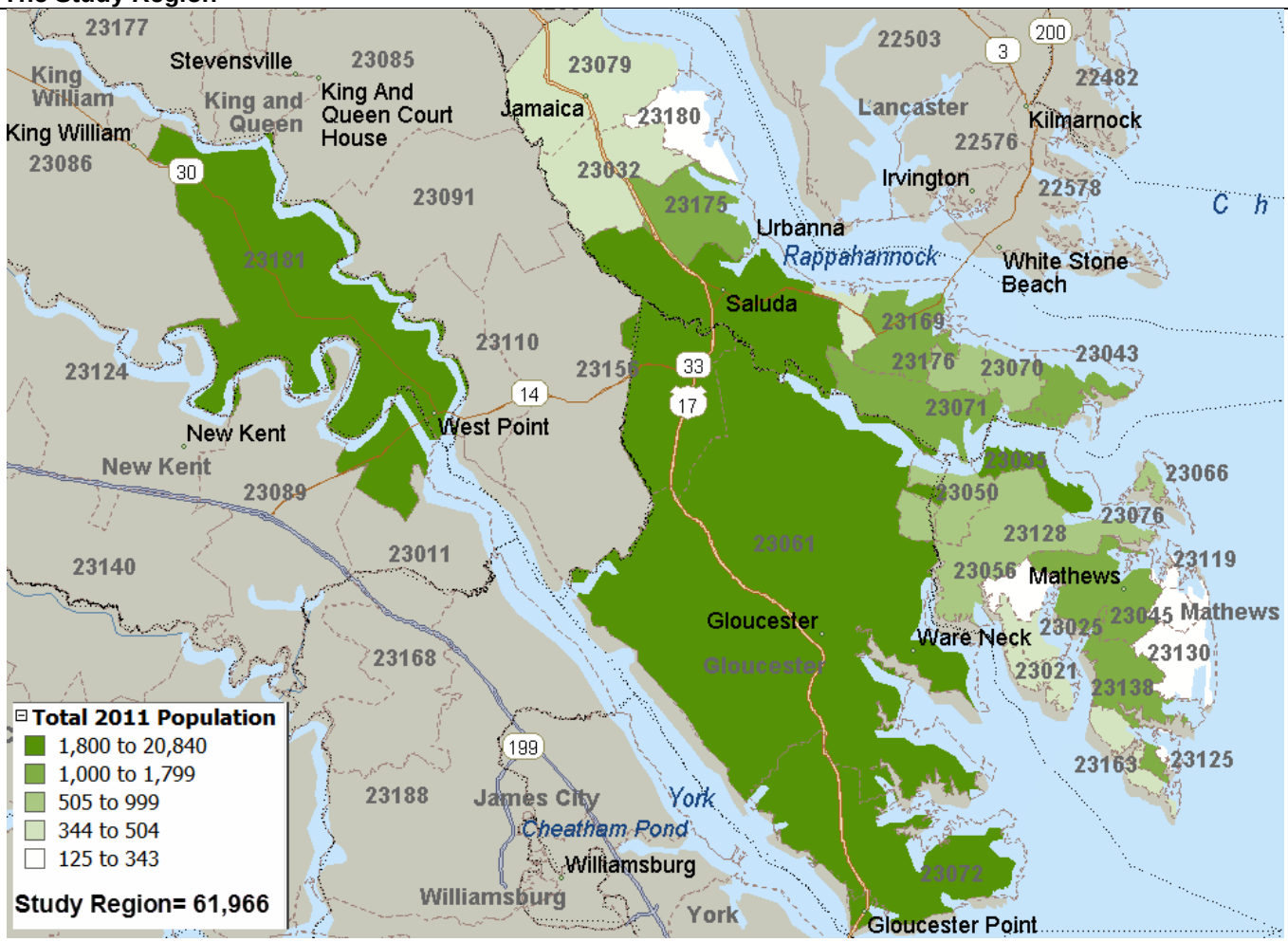
Executive Summary

The mission of Riverside Walter Reed Hospital (RWR) is "to care for others as we would care for those we love-to enhance their well-being and improve their health." With this mission in mind, RWR commissioned Community Health Solutions to conduct this community health needs assessment in 2012.

The study focuses on the RWR service area of 30 zip codes, most of which fall within Gloucester, King William, Mathews and Middlesex counties. The study region is shown in the map below. The results of the study include two primary components: a 'community insight profile' based on qualitative analysis of a survey of community stakeholders, and a 'community indicator profile' based on quantitative analysis of community health status indicators. This Executive Summary outlines major findings, and details are provided in the body of the report.

The Study Region



Part I. Community Insight Profile

In an effort to generate community input for the study, a Community Insight Survey was conducted with a group of community stakeholders identified by RWR. The survey participants were asked to provide their viewpoints on:

- Important health concerns in the community;
- Significant service gaps in the community; and
- Additional ideas or suggestions for improving community health.

The survey was sent to a group of 87 community stakeholders identified by RWR. A total of 43 (49%) submitted a response (although not every respondent answered every question). The respondents provided rich insights about community health in the study region. To summarize:

- The respondents identified over two dozen important health concerns such as mental health conditions, obesity, chronic health conditions, dental care/oral health, Alzheimer's disease, substance abuse, domestic violence and more.

- The respondents reported more than two dozen specific community services in need of strengthening. Commonly identified services included behavioral health services, aging services, transportation, dental care, health care coverage, and more.

Nine respondents offered open-ended responses with additional ideas and suggestions for improving community health. These responses are listed in *Appendix B* on page 37.

Part II. Community Indicator Profile

The community indicator profile in Part II presents a wide array of quantitative community health indicators for the study region. To produce the profile, Community Health Solutions analyzed data from multiple sources. By design, the analysis does not include every possible indicator of community health. The analysis is focused on a set of indicators that provide broad insight into community health, and for which there were readily available data sources. To summarize:

- *Demographic Profile.* As of 2011, the study region included 61,966 people. Compared to the Commonwealth of Virginia as a whole, the study region is more sparsely populated and is less racially diverse. The region also has lower income levels than the state as a whole.

- *Mortality Profile.* The study region had 691 total deaths in 2010. The leading causes of death were malignant neoplasms (cancer), heart disease, and cerebrovascular disease (stroke). The study region death rate per 100,000 population was higher than the statewide rate overall, and for adults age 45+.

- *Maternal and Infant Health Profile.* The study region had 564 total live births in 2010. Compared to Virginia as a whole, the study region had a lower rate of births without early prenatal care, and a higher rate of non-marital births. The teen pregnancy rate in Gloucester and King William counties were higher than the statewide rate. Five-year infant mortality rates were higher than the statewide rate in three localities (King William, Mathews and Middlesex counties).

- *Preventable Hospitalization Profile.* The Agency for Healthcare Research and Quality (AHRQ) defines a set of conditions (called Prevention Quality Indicators, or 'PQIs') for which hospitalization should be avoidable with proper outpatient health care. High rates of hospitalization for these conditions indicate potential gaps in access to quality outpatient services for community residents. Residents of the study region had 786 PQI hospital discharges in 2011, with most involving seniors age 65+. The leading diagnoses for these discharges were congestive heart failure, bacterial pneumonia, and chronic obstructive pulmonary disease. The study region PQI discharge rate per 100,000 population was higher than the statewide rate overall, and for adults age 30-44.

- *Behavioral Health Hospitalization Discharge Profile.* Behavioral health hospitalizations provide another important indicator of community health status. Residents of the study region had 487 hospital discharges from Virginia community hospitals for behavioral health conditions in 2011. The leading diagnoses for these discharges were affective psychoses, general symptoms, and schizophrenic disorders. The study region behavioral health hospitalization discharge rate per 100,000 population was lower than the statewide rate overall, but was higher than the statewide rates for adults age 18-29 and seniors age 65+.

- *Adult and Child Health Risk Profiles.* The study includes a set of estimates of adult and child health risk. The local estimates indicate that substantial numbers of adults in the study region have health risks related to nutrition, physical activity, weight, tobacco, and alcohol. It is also estimated that large numbers of children in the study region are not meeting recommendations for nutrition, weight and physical activity.

- *Uninsured Profile*. An estimated 7,654 (15%) nonelderly residents of the study region were uninsured at any point in time in 2011. Among both children and adults, the large majority of uninsured residents were estimated to have income at or below 200% of the federal poverty level (FPL).

- *Medically Underserved Profile.* Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) are designated by the U.S. Health Resources and Services Administration as being at risk for health care access problems. The designations are based on several factors including primary care provider supply, infant mortality, prevalence of poverty, and the prevalence of seniors age 65. All four localities that include the study region (Gloucester, King William, Mathews and Middlesex counties) have been partially or fully designated as MUAs/MUPs.

Accompanying File of Zip Code Level Indicators

This report includes community health indicators for the study region as a whole. A separate Microsoft Excel file contains indicators for each zip code within the study region.

Appendix A: Zip Code-Level Maps for the Study Region

Appendix A provides a set of thematically colored maps displaying variation in community health indicators by zip code. The underlying data for these maps are provided in a separate Microsoft Excel file. *Please read the important note about zip code level data in the introduction to Appendix A.*

Appendix B: Community Insight Profile-
Additional Ideas and Suggestions for Improving Community Health

Nine survey respondents offered open-ended responses with additional ideas and suggestions for improving community health. These responses are listed in *Appendix B* on page 37.

Appendix C: Community Health Needs Assessment Data Sources

Appendix C provides a list of the data sources used in the analysis contained in this report.

Part I. Community Insight Profile

In an effort to generate community input for the community health needs assessment, a Community Insight Survey was conducted with a group of community stakeholders identified by RWR. The survey participants were asked to provide their viewpoints on:

- Important health concerns in the community;
- Significant service gaps in the community; and
- Additional ideas or suggestions for improving community health.

The survey was sent to a group of 87 community stakeholders identified by RWR. A total of 43 (49%) submitted a response (although not every respondent answered every question). The respondents provided rich insights about community health in the study region. The results are summarized in the remainder of this section.

1. Survey Respondents

Exhibit I-1 below lists the organizational affiliations of the survey respondents.

Exhibit I-1
Reported Organization Affiliation of Survey Respondents[1]

Alzheimer's Association	Mathews High School
Bay Aging	Matthews County Public Schools- St Clare Walker Middle School
Bay Family Housing, a division of Bay Aging	Middle Peninsula Northern Neck Community Services Board (2)
Brain Injury Association of Virginia	National Alliance on Mental Illness (NAMI) Mid-Tidewater
Gloucester County Public Schools (2)	Peasley Middle School
Gloucester County Public Schools, Botetourt Elementary School	Riverside Behavioral Health Center
Gloucester County Public Schools, Gloucester High School	Riverside Convalescent Center-West Point
Gloucester County Public Schools, Page Middle School	Riverside Health System
Gloucester Department of Social Services	Riverside Home Care
Gloucester Emergency Services	Riverside Wellness & Fitness Center, Middle Peninsula
Gloucester Housing Partnership, Inc. / Samaritan Group	Three Rivers Healthy Families
Gloucester-Mathews Free Clinic	Virginia Department for the Deaf & Hard of Hearing, Technology Assistance Program
Habitat for Humanity of Gloucester-Mathews Inc.	Virginia Department of Health, Three Rivers Health District
King and Queen County Public Schools	West Point Elementary School
King and Queen County Emergency Services	West Point High School
King and Queen Social Services	West Point Middle School
Laurel Shelter, Inc.	*Unknown Organization (7)*
Lee Jackson Elementary School	

[1] Thirty-six (36) of the 43 survey respondents answered this question.

2. Community Health Concerns

Survey respondents were asked to review a list of common community health issues. The list of issues draws from the topics in *Healthy People 2020* with some refinements. The survey asked respondents to identify from the list what they view as important health concerns in the community. Respondents were also invited to identify additional issues not already defined on the list. *Exhibit I-2* summarizes the results, and lists open-ended responses.

Exhibit I-2.
Important Community Health Concerns Identified by Survey Respondents

Answer Options	Response Percent[2]	Response Count
Diabetes	74%	31
Mental Health Conditions	74%	31
Adult Obesity	64%	27
Dental Care/Oral Health	64%	27
Alzheimer's Disease	57%	24
Substance Abuse - Illegal Drugs	55%	23
Heart Disease & Stroke	52%	22
Alcohol Use	50%	21
Cancer	50%	21
Childhood Obesity	50%	21
Domestic Violence	50%	21
Substance Abuse - Prescription Drugs	45%	19
Autism	43%	18
Chronic Pain	43%	18
Tobacco Use	43%	18
Asthma	38%	16
Intellectual/Developmental Disabilities	36%	15
Physical Disabilities	36%	15
Arthritis	31%	13
Injuries	24%	10
Prenatal & Pregnancy Care	21%	9
Respiratory Diseases (other than asthma)	21%	9
Teen Pregnancy	17%	7
Sexually Transmitted Diseases	12%	5
Infectious Diseases	7%	3
HIV/AIDS	5%	2
Environmental Quality	2%	1
Other Health Problems (list in box below)	*12%*	*5*
Open-Ended Responses		
• Brain injury is a very common health issue. Because many of the effects are "invisible" (cognitive and behavioral issues), it often does not get the attention it needs and deserves. A brain injury occurs at the rate of one every 18 seconds, and its effects can present life-changing and long-term issues for the survivor.		
• Traumatic Brain Injury		
• 1. Caregiver burnout/exhaustion 2. Premature death and smoking		
• Hearing loss and the isolation it can present, including depression, and fire safety at home. I see some (what appears to me) overuse of the medical system due to fear of health and mental decline and need for socialization. Even in structured social programs, older hard of hearing people seem to be set aside because they're much harder to keep included in group activities.		
• School Nurse		

Note: When interpreting the survey results, please note that although the relative number of responses received for each item is instructive, it is not a definitive measure of the relative importance of one issue compared to another.

[2] Forty-two (42) of the forty-three survey respondents answered this question.

3. Community Service Gaps

Survey respondents were asked to review a list of community services that are typically important for addressing the health needs of a community. Respondents were asked to identify from the list any services they think need strengthening in terms of availability, access, or quality. Respondents were also invited to identify additional service gaps not already defined on the list. *Exhibit I-3* summarizes the results, and lists open-ended responses.

Exhibit I-3.
Important Community Service Gaps Identified by Survey Respondents

Answer Options	Response Percent[3]	Response Count
Behavioral Health Services (including mental health, substance use and intellectual disability)	76%	31
Aging Services	66%	27
Transportation	63%	26
Dental Care/Oral Health Services	61%	25
Health Care Coverage	51%	21
Health Promotion and Prevention Services	49%	20
Patient Self Management Services(e.g. nutrition, exercise, taking medications)	46%	19
Long Term Care Services	39%	16
Social Services	39%	16
Domestic Violence Services	32%	13
Family Planning Services	32%	13
Chronic Pain Management Services	29%	12
Chronic Disease Services (including screening and early detection)	29%	12
Early Intervention Services for Children	29%	12
Public Health Services	27%	11
Maternal, Infant & Child Health Services	24%	10
School Health Services	24%	10
Home Health Services	22%	9
Specialty Medical Care (e.g. cardiologists, oncologists, etc.)	22%	9
Primary Health Care Services	20%	8
Food Safety Net/Basic Needs Services	17%	7
Hospital Services (including emergency, inpatient and outpatient)	17%	7
Hospice Services	12%	5
Workplace Health and Safety Services	10%	4
Pharmacy Services	7%	3
Environmental Health Services	5%	2
Other Community Health Services (list in box below)	*15%*	*6*

Note: When interpreting the survey results, please note that although the relative number of responses received for each item is instructive, it is not a definitive measure of the relative importance of one issue compared to another.

Continued on next page...

[3] Forty-one (41) of the forty-three survey respondents answered this question.

Open-Ended Responses
• Housing services for those with mental health conditions.
• I would like to see a partnership between professional and paraprofessional services and trained volunteer home visitors, who could stop in for 15 or 20 minutes a few days a week to chat, see what's working in the home (health-wise) and what needs tweaking (especially as [it] pertains to diet). I see a lot of junk food in use, particularly among diabetic seniors. The fast foods are easier to deal with than better choice snacks or mini-meals.
• The only local substance program for those without insurance costs $50 per week. For low income clients that is not feasible.
• There are no neurobehavioral or brain injury treatment services available in the Northern Neck or Middle Peninsula. Brain injury survivors have to go to Richmond, Northern Virginia, or Tidewater to access diagnostic, evaluation, and treatment planning services or to access brain injury specific day program services. There are no nursing homes with neurobehavioral services or specialized care for the brain injured population---survivors who need this kind of long-term care are most often placed in nursing homes which are not equipped (or intended) to provide specialized cognitive and behavioral treatment services. In addition, many brain injury service providers, even in large metropolitan areas, do not accept any type of health insurance (Medicare, Medicaid, or private insurance) because the rate of reimbursement is insufficient for the extensive and detailed work that they do.
• Services for individuals with traumatic brain injury are for the most part unavailable in our area.
• 1. Transportation is the fastest growing infrastructure need for "the age wave." 2. Home & community based services (non-medical) for a growing senior population is key to containing costs and assisting people to live safely and independently in their homes."

Part II. Community Indicator Profile

This section of the report provides a quantitative profile of the study region based on a wide array of community health indicators. To produce the profile, Community Health Solutions analyzed data from multiple sources. By design, the analysis does not include every possible indicator of community health. The analysis is focused on a set of indicators that provide broad insight into community health, and for which there were readily available data sources.

The results of this profile can be used to evaluate community health status compared to the Commonwealth of Virginia overall. The results can also be helpful for determining the number of people within the study region affected by specific health concerns. In addition, the results can be used alongside the Community Insight Survey results and the zip code level maps to help inform action plans for community health improvement. This section includes ten profiles as follows:

1. Health Demographic Trend Profile
2. Health Demographic Snapshot
3. Mortality Profile
4. Maternal and Infant Health Profile
5. Preventable Hospitalization Profile
6. Behavioral Health Hospitalization Discharge Profile
7. Adult Health Risk Factor Profile
8. Child Health Risk Factor Profile
9. Uninsured Profile
10. Medically Underserved Profile

1. Health Demographic Trend Profile

Trends in health-related demographics are instructive for anticipating changes in community health status. Changes in the size of the population, age of the population, racial/ethnic mix of the population, income status and education status can have a significant impact on overall health status, health needs and demand for local services.

As shown in *Exhibit II-1*, as of 2011, the study region included 61,966 people. The population is expected to slightly decline to 60,427 by 2016. It is projected that the population will remain stable or slightly decrease in all age groups. Focusing on racial/ethnic background, growth is projected for the Asian and Black/African American populations, while a slight decline is projected for both the White and Other or Multi Race population. The Hispanic population is expected to grow by 9%.

Exhibit II-1.
Health Demographic Trend, 2010-2016

Indicator	2010 Census	2011 Estimate	2016 Projection	% Change 2011-2016
Total Population	62,375	61,966	60,427	-2%
Population Density (per Sq Mile)	118.3	117.5	114.6	-2%
Total Households	24,976	24,821	24,206	-2%
Population by Age				
Children Age 0-17	12,871	12,716	12,403	-2%
Adults Age 18-29	7,591	7,543	7,322	-3%
Adults Age 30-44	10,672	10,624	10,295	-3%
Adults Age 45-64	19,966	19,854	19,338	-3%
Seniors Age 65+	11,280	11,239	11,088	-1%
Population by Race/Ethnicity				
Asian	423	421	430	2%
Black/African American	7,025	7,062	7,192	2%
White	52,936	52,512	50,890	-3%
Other or Multi-Race	1,997	1,973	1,909	-3%
Hispanic Ethnicity[4]	1,384	1,414	1,542	9%

Source: Community Health Solutions analysis of data from Alteryx, Inc.

[4] Classification of ethnicity; therefore, Hispanic individuals are also included in the race categories.

2. Health Demographic Snapshot

Community health is driven in part by community demographics. The age, sex, race, ethnicity, income and education status of a population are strong predictors of community health status and community health needs. *Exhibit II-2* presents a snapshot of key health-related demographics of the study region.

As of 2011, the study region included an estimated 61,966 people. Compared to the Commonwealth of Virginia as a whole, the study region is more sparsely populated, and is less racially diverse. The region also has lower income levels than the state as a whole. *Note: Maps 1-13 in Appendix A show the geographic distribution of the population by zip code.*

Exhibit II-2.
Health Demographic Snapshot, 2011

Indicator	Study Region	Virginia
Population Counts		
Population	61,966	8,120,937
Children Age 0-17	12,716	1,910,883
Adults Age 18-29	7,543	1,367,779
Adults Age 30-44	10,624	1,687,883
Adults Age 45-64	19,854	2,139,219
Seniors Age 65+	11,239	1,014,213
Female	32,000	4,130,586
Male	29,970	3,990,349
Asian	421	446,480
Black/African American	7,062	1,575,045
White	52,512	5,568,689
Other or Multi-Race	1,973	530,708
Hispanic Ethnicity	1,414	684,450
Low Income Households (Households with Income < $25,000)	5,325	561,807
Population Age 25+ Without a High School Diploma	6,130	697,401
Population Rates		
Population Density (pop. per sq. mile)	117.5	201.7
Children Age 0-17 pct. of Total Pop.	21%	24%
Adults Age 18-29 pct. of Total Pop.	12%	17%
Adults Age 30-44 pct. of Total Pop.	17%	21%
Adults Age 45-64 pct. of Total Pop.	32%	26%
Seniors Age 65+ pct. of Total Pop.	18%	12%
Female pct. of Total Pop.	52%	51%
Male pct. of Total Pop.	48%	49%
Asian pct. of Total Pop.	1%	5%
Black/African American pct. of Total Pop.	11%	19%
White pct. of Total Pop.	85%	69%
Other or Multi-Race pct. of Total Pop.	3%	7%
Hispanic Ethnicity pct. of Total Pop.	2%	8%
Per Capita Income	$25,484	$33,364
Median Household Income	$46,462	$63,002
Low Income Households (Households with Income < $25,000) pct. of Total Households	21%	18%
Pop. Age 25+ Without a High School Diploma pct. Total Pop. Age 25+	14%	13%

Source: Community Health Solutions analysis of data from Alteryx, Inc.

3. Mortality Profile

As shown in *Exhibit II-3*, the study region had 691 total deaths in 2010. The leading causes of death were malignant neoplasms (cancer) (172), heart disease (155), and cerebrovascular disease (stroke) (40). The study region death rate per 100,000 population was higher than the statewide rate overall, and for adults age 45+. [5]
Note: Maps 14-17 in Appendix A show the geographic distribution of deaths by zip code.

Exhibit II-3.
Mortality Profile, 2010

Indicators	Study Region	Virginia
Total Deaths		
Deaths by All Causes	691	58,841
Deaths by Top 14 Causes		
Malignant Neoplasms (Cancer) Deaths	172	13,958
Heart Disease Deaths	155	13,332
Cerebrovascular Diseases (Stroke) Deaths	40	3,259
Alzheimer's Disease Deaths	37	1,842
Unintentional Injury Deaths	34	2,571
Chronic Lower Respiratory Diseases Deaths	33	2,957
Nephritis and Nephrosis Deaths	15	1,583
Diabetes Mellitus Deaths	14	1,527
Septicemia Deaths	12	1,358
Suicide Deaths	11	982
Chronic Liver Disease Deaths	8	687
Influenza and Pneumonia Deaths	8	1,183
Parkinson's Disease Deaths	5	519
Primary Hypertension and Renal Disease Deaths	3	589
Total Deaths by Age Group		
Total Deaths Age 0-17	7	989
Total Deaths Age 18-29	5	1,001
Total Deaths Age 30-44	21	2,181
Total Deaths Age 45-64	125	12,036
Total Deaths Age 65+	533	42,626
Death Rates by Age Group		
Total Deaths per 100,000 pop. All Ages	1,107.7	735.4
Total Deaths per 100,000 pop. Age 0-17	--	53.4
Total Deaths per 100,000 pop. Age 18-29	--	73.3
Total Deaths per 100,000 pop. Age 30-44	--	133.4
Total Deaths per 100,000 pop. Age 45-64	626.1	554.9
Total Deaths per 100,000 pop. Age 65+	4,725.2	4,363.2

Source: Community Health Solutions analysis of data from the Virginia Department of Health.
-- Rates *are not calculated where n<30*

[5] Age adjusted death rates were not calculated for this study because the study region is defined by zip codes, and available data are not structured to support calculation of age adjusted death rates at the zip code level. Age group death rates are used as an alternative.

4. Maternal and Infant Health Profile

As shown in *Exhibit II-4A,* the study region had 564 total live births in 2010. Compared to Virginia as a whole, the study region had a lower rate of births without early prenatal care, and a higher rate of non-marital births. *Note: Maps 18-21 in Appendix A show the geographic distribution of births by zip code.*

Exhibit II-4A.
Maternal and Infant Health Profile, 2010

Indicators	Study Region	Virginia
Counts		
Total Live Births	564	102,934
Low Weight Births (under 2,500 grams / 5 lb. 8 oz.)	50	8,487
Births Without Early Prenatal Care (No Prenatal Care in First 13 Weeks)	58	14,950
Non-Marital Births	344	36,532
Live Births to Teens Age 10-19	48	7,444
Live Births to Teens Age 18-19	37	5,418
Live Births to Teens Age 15-17	10	1,955
Live Births to Teens Age <15	1	71
Rates		
Live Birth Rate per 1,000 Population	9.0	12.9
Low Weight Births pct. of Total Live Births	9%	8%
Births Without Early Prenatal Care (No Prenatal Care in First 13 Weeks) pct. of Total Live Births	10%	15%
Non-Marital Births pct. of Total Live Births	61%	35%

Source: Community Health Solutions analysis of data from the Virginia Department of Health.

Exhibit II-4B below provides counts and rates of teen pregnancy and infant mortality for the four localities that include the study region. [6] In 2010, the teen pregnancy rate in Gloucester and King William counties were higher than the statewide rate. Five-year infant mortality rates were higher than the statewide rate in three localities (King William, Mathews and Middlesex counties).

Exhibit II-4B.
Teen Pregnancy and Infant Mortality, 2010

Indicators	Virginia	Gloucester County	King William County	Mathews County	Middlesex County
Teen Pregnancy Counts and Rates					
Total Teenage Pregnancies Age 10-19 (2010)	10,970	52	24	5	8
Total Pregnancies per 1,000 Female Population Age 10-19 (2010)	21.1	21.9	22.5	10.0	16.0
Infant Mortality Counts and Rates					
Total Infant Deaths (2010)	695	1	1	1	0
Five-Year Average Infant Mortality Rate per 1,000 Live Births (2006-2010)	7.1	6.0	7.7	8.6	9.5

Source: Community Health Solutions analysis of data from the Virginia Department of Health.

[6] Indicators are shown at the city and county level because teen pregnancy and fiver year average infant mortality data are not available at the zip code level.

5. Preventable Hospitalization Profile

The Agency for Healthcare Research and Quality (AHRQ) defines a set of conditions (called Prevention Quality Indicators, or 'PQIs') for which hospitalization should be avoidable with proper outpatient health care.[7] High rates of hospitalization for these conditions indicate potential gaps in access to quality outpatient services for community residents.

As shown in *Exhibit II-5*, residents of the study region had 786 PQI hospital discharges in 2011, with most (500) involving seniors age 65+.[8] The leading diagnoses for these discharges were congestive heart failure (209), bacterial pneumonia (173), and chronic obstructive pulmonary disease (106). The study region PQI discharge rate per 100,000 population was higher than the statewide rate overall, and for adults age 30-44. *Note: Map 22 in Appendix A shows the geographic distribution of PQI discharges by zip code.*

Exhibit II-5.
Prevention Quality Indicator Hospital Discharges, 2011

Indicators	Study Region	Virginia
PQI Discharges by Age Group		
All Ages	786	83,258
Total PQI Discharges-Age 0-17	2	335
Total PQI Discharges-Age 18-29	22	3,633
Total PQI Discharges-Age 30-44	58	7,175
Total PQI Discharges-Age 45-64	204	24,322
Total PQI Discharges-Age 65+	500	47,793
PQI Discharges by Diagnosis		
Congestive Heart Failure	209	18,962
Bacterial Pneumonia	173	16,196
Chronic Obstructive Pulmonary Disease (COPD)	106	11,422
Urinary Tract Infection	103	10,478
Diabetes	85	11,314
Adult Asthma	40	6,399
Dehydration	25	3,394
Hypertension	18	2,894
Perforated Appendix	14	1,484
Angina	13	715
PQI Discharge Rates by Age Group		
Total PQI Discharges per 100,000 pop. All Ages	1,260.0	1,040.6
Total PQI Discharges per 100,000 pop. Age 0-17	--	17.5
Total PQI Discharges per 100,000 pop. Age 18-29	--	256.6
Total PQI Discharges per 100,000 pop. Age 30-44	545.9	425.1
Total PQI Discharges per 100,000 pop. Age 45-64	1,027.5	1,137.0
Total PQI Discharges per 100,000 pop. Age 65+	4,448.8	4,712.3

Source: Community Health Solutions analysis of hospital discharge data from Virginia Health Information, Inc.
-- Rates are not calculated where n<30

[7] The PQI definitions are detailed in their specification of ICD-9 diagnosis codes and procedure codes. Not every hospital admission for congestive heart failure, bacterial pneumonia, etc. is included in the PQI definition; only those meeting the detailed specifications. Low birth weight is one of the PQI indicators, but for the purpose of this report, low birth weight is included in the Maternal and Infant Health Profile. Also, there are three diabetes-related PQI indicators which have been combined into one for the report. For more information, visit the AHRQ website at www.qualityindicators.ahrq.gov/pqi_overview.htm

[8] Data include discharges for Virginia residents from Virginia community hospitals reporting to Virginia Health Information, Inc. These data do not include discharges from state behavioral health facilities or federal (military) facilities. Data reported are based on the primary diagnosis.

6. Behavioral Health Hospitalization Discharge Profile

Behavioral health (BH) hospitalizations provide another important indicator of community health status. *Exhibit II-6* shows behavioral health hospitalization discharges for study region residents in 2011. Residents of the study region had 487 hospital discharges from Virginia community hospitals for behavioral health conditions in 2011.[9] The leading diagnoses for these discharges were affective psychoses (169), general symptoms (116), and schizophrenic disorders (55). The study region behavioral health hospitalization discharge rate per 100,000 population was lower than the statewide rate overall, but was higher than the statewide rates for adults age 18-29 and seniors age 65+. *Note: Map 23 in Appendix A shows the geographic distribution of behavioral health discharges by zip code.*

Exhibit II-6.
Behavioral Health Hospital Discharges, 2011

Indicators	Study Region	Virginia
BH Discharges by Age Group		
All Ages	487	64,853
Total BH Discharges-Age 0-17	52	7,996
Total BH Discharges-Age 18-29	84	12,295
Total BH Discharges-Age 30-44	94	15,059
Total BH Discharges-Age 45-64	147	19,662
Total BH Discharges-Age 65+	110	9,841
BH Discharges by Top 10 Diagnoses		
Affective Psychoses[10]	169	27,268
General Symptoms[11]	116	11,127
Schizophrenic Disorders	55	8,039
Alcoholic Psychoses	33	3,280
Depressive Disorder, Not Elsewhere Classified	23	2,784
Neurotic Disorders	15	1,350
Other Nonorganic Psychoses	15	2,146
Alcoholic Dependence Syndrome	12	2,161
Drug Psychoses	12	1,314
Adjustment Reaction	11	2,123
BH Discharge Rates by Age Group		
Total BH Discharges per 100,000 pop. All Ages	780.7	810.6
Total BH Discharges per 100,000 pop. Age 0-17	408.9	418.4
Total BH Discharges per 100,000 pop. Age 18-29	1,113.6	898.9
Total BH Discharges per 100,000 pop. Age 30-44	884.8	892.2
Total BH Discharges per 100,000 pop. Age 45-64	740.4	919.1
Total BH Discharges per 100,000 pop. Age 65+	978.7	970.3

Source: Community Health Solutions analysis of hospital discharge data from Virginia Health Information, Inc.

[9] Data include discharges for Virginia residents from Virginia hospitals reporting to Virginia Health Information, Inc. These data do not include discharges from state behavioral health facilities or federal (military) facilities. Data reported are based on the primary diagnosis.
[10] Includes major depressive, bipolar affective and manic depressive disorders.
[11] This diagnosis includes symptoms, signs, abnormal results of laboratory or other investigative procedures, and ill-defined conditions regarding which no diagnosis classifiable elsewhere is recorded.

7. Adult Health Risk Factor Profile

This section examines health risks for adults age 18+. *Exhibit II-7* shows estimates indicating that substantial numbers of adults in the study region have health risks related to nutrition, physical activity, weight, tobacco and alcohol. In addition, substantial numbers of adults may have chronic conditions such as high blood pressure, arthritis, high cholesterol, diabetes and asthma. *Note: Maps 24-27 in Appendix A show the geographic distribution of selected adult health risks by zip code.*

Exhibit II-7.
Adult Health Risk Factors (Estimates), 2011

Indicators	Study Region Estimates (count)	Study Region Estimates (percent)
Estimated adults age 18+	49,260	100%
Less Than Five Servings of Fruits and Vegetables Per Day	37,667	76%
Overweight or Obese[12]	28,959	58%
High Cholesterol (told by a doctor or other health professional)	15,841	32%
Arthritis (told by a doctor or other health professional)	15,419	31%
High Blood Pressure (told by a doctor or other health professional)	14,959	30%
No Physical Activity in the Past 30 Days	11,481	23%
Smoker	10,670	21%
Limited in any Activities because of Physical, Mental or Emotional Problems	10,002	20%
Fair or Poor Health Status	7,989	16%
At Risk for Binge Drinking	6,859	14%
Asthma (told by a doctor or other health professional)	6,173	12%
Diabetes (told by a doctor or other health professional)	4,431	9%

Source: Community Health Solutions estimates based on secondary sources. See Appendix B for details.

[12] According to the CDC, for adults 20 years old and older, BMI is interpreted using standard weight status categories that are the same for all ages and for both men and women. Overweight is defined as a BMI between 25.0 and 29.9. Obesity is defined as a BMI 30.0 and above. For more information: http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html#Interpreted

8. Child Health Risk Factor Profile

This section examines a set of health risks for children age 10-17. The selected indicators involve nutrition, physical activity and weight-related risks. These risks have received increasing attention as the population of American children has become more sedentary, more prone to unhealthy eating, and more likely to develop unhealthy body weight. The long-term implications of these trends are serious, as these factors place children at higher risk for chronic disease both now and in adulthood.

Exhibit II-8 shows estimates indicating that that large numbers of children in the study region are not meeting recommendations for nutrition, weight and physical activity. *Note: Maps 28 and 29 in Appendix A show the geographic distribution of selected child health risks by zip code.*

Exhibit II-8.
Child Health Risk Factors (Estimates) 2011

Indicators	Study Region Estimates (count)	Study Region Estimates (percent)
Estimated Children Age 10-17	6,333	100%
Soda or Eat Chips or Candy At Least Once Per Week	5,826	92%
Less than the Recommended Intake of Fruits and Vegetables	5,573	88%
Less Physically Active than Recommended	2,153	34%
Television Three or More Hours per Day	1,647	26%
Overweight or Obese[13]	1,520	24%
Video/Computer Games Three or More Hours per Day	1,013	16%

Source: Community Health Solutions estimates based on secondary sources. See Appendix B for details.

[13] For children and adolescents (aged 2–19 years), the BMI value is plotted on the CDC growth charts to determine the corresponding BMI-for-age percentile. Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile. Obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex. For more information: http://www.cdc.gov/healthyweight/assessing/bmi/childrens_BMI/about_childrens_BMI.html.

9. Uninsured Profile

Decades of research show that health coverage matters when it comes to overall health status, access to health care, quality of life, school and work productivity, and even mortality. *Exhibit II-9* shows estimates of the number of uninsured individuals in the study region as of 2011. An estimated 7,654 (15%) nonelderly residents of the study region were uninsured at any given time in 2011. This includes an estimated 1,110 children and 6,544 adults. Among both children and adults, the large majority of uninsured residents were estimated to have income at or below 200% of the federal poverty level (FPL).[14] *Note: Maps 30-32 in Appendix A show the geographic distribution of the uninsured population by zip code.*

Exhibit II-9.
Uninsured (Estimates) 2011

Indicators	Study Region
Estimated Uninsured Counts	
Uninsured Nonelderly Age 0-64	7,654
Uninsured Children Age 0-18	1,110
Uninsured Children <100% FPL	346
Uninsured Children 100-200% FPL	413
Uninsured Children 201-300% FPL	233
Uninsured Children 301%+ FPL	117
Uninsured Adults Age 19-64	6,544
Uninsured Adults <100% FPL	3,166
Uninsured Adults 100-200% FPL	1,642
Uninsured Adults 201-300% FPL	1,096
Uninsured Adults 301%+ FPL	640
Estimated Uninsured Rates	
Uninsured Nonelderly Percent	15%
Uninsured Children Percent	8%
Uninsured Adults Percent	18%

Source: Community Health Solutions estimates based on secondary sources. See Appendix B for details.

[14] Two hundred percent of the federal poverty level is defined as an annual income of $44,700 for a family of four. For more information, please see: http://aspe.hhs.gov/poverty/11poverty.shtml

10. Medically Underserved Profile

Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) are designated by the U.S. Health Resources and Services Administration as being at risk for health care access problems. The designations are based on several factors including primary care provider supply, infant mortality, prevalence of poverty and the prevalence of seniors age 65+.

As shown in *Exhibit II-10*, all four localities that include the study region (Gloucester, King William, Mathews and Middlesex counties) have been partially or fully designated as MUAs/MUPs. For a more detailed description, visit the U.S. Health Resources and Services Administration designation webpage at http://muafind.hrsa.gov/.

Exhibit II-10.
Medically Underserved Areas

Locality	MUA designation	Census Tracts
Gloucester County	Partial	1 of 8 Census Tracts
King William County	Full	4 of 4 Census Tracts
Mathews County	Full	2 of 2 Census Tracts
Middlesex County	Full	4 of 4 Census Tracts

Source: Community Health Solutions analysis of U.S. Health Resources and Services Administration data.

APPENDIX A: Zip Code Level Maps for the Study Region

The zip code level maps in this section illustrate the geographic distribution of the study region population on key demographic and health indicators. The results can also be used alongside the Community Insight Survey (Part I) and the Community Indicator Profile (Part II) to help inform plans for community health initiatives. The underlying data for these maps are provided in a separate Microsoft Excel file. The maps in this section include the following for 2010/2011:

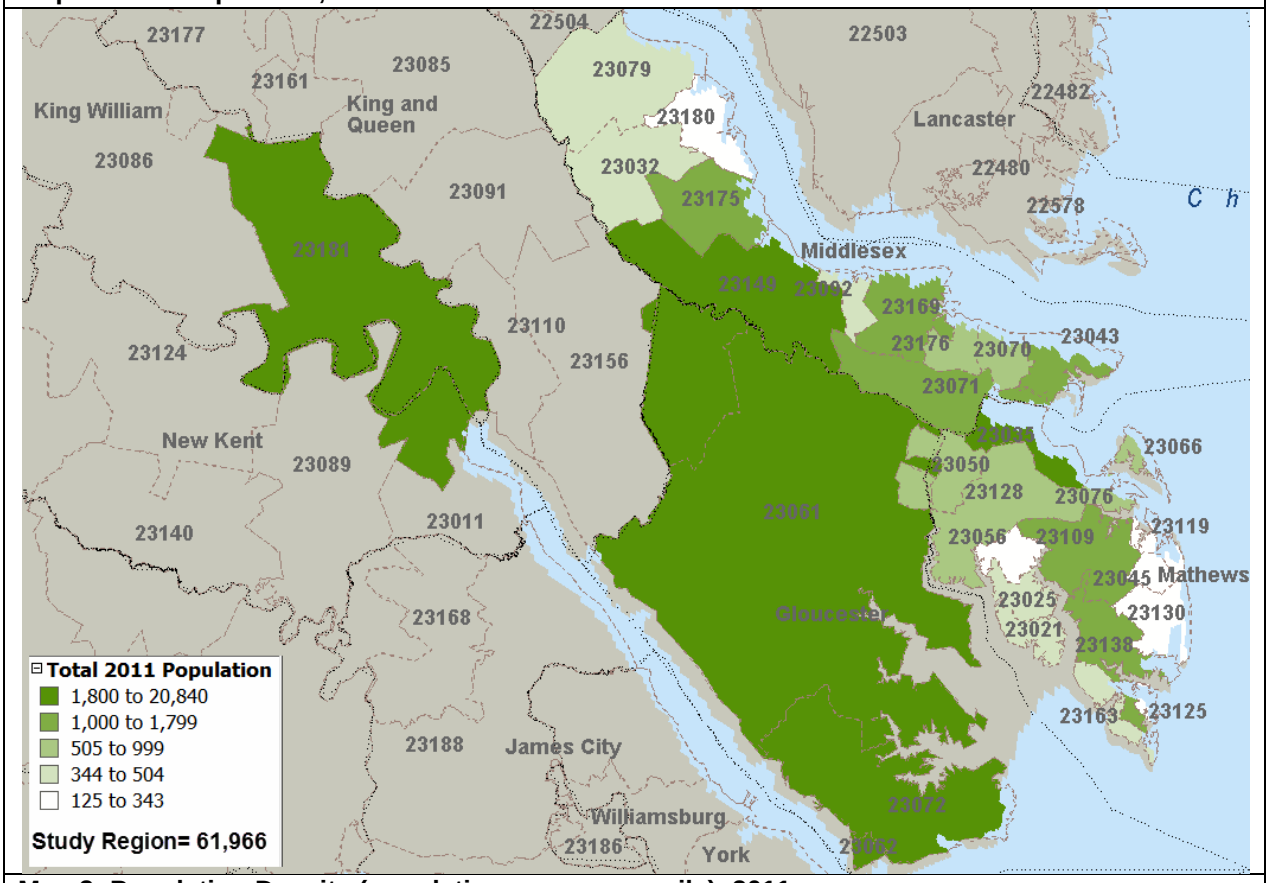
1. Total Population, 2011	17. Cerebrovascular Disease (Stroke) Deaths, 2010
2. Population Density, 2011	18. Total Live Births, 2010
3. Child Population Age 0-17, 2011	19. Low Weight Births, 2010
4. Senior Population Age 65+, 2011	20. Births Without Early Prenatal Care (No Prenatal Care in the First 13 Weeks), 2010
5. Asian Population, 2011	21. Births to Teen Mothers Under Age 18, 2010
6. Black/African American Population, 2011	22. Prevention Quality Indicator (PQI) Hospital Discharges, 2011
7. White Population, 2011	23. Behavioral Health (BH) Hospital Discharges, 2011
8. Other or Multi-Race Population, 2011	24. Estimated Adults Age 18+ Overweight or Obese, 2011
9. Hispanic Ethnicity Population, 2011	25. Estimated Adults Age 18+ with High Blood Pressure, 2011
10. Per Capita Income, 2011	26. Estimated Adult Age 18+ Smokers, 2011
11. Median Household Income, 2011	27. Estimated Adults Age 18+ with Diabetes, 2011
12. Low Income Households (Households with Income <$25,000), 2011	28. Estimated Children Age 10-17 Overweight or Obese, 2011
13. Population Age 25+ Without a High School Diploma, 2011	29. Estimated Children Age 10-17 Not Meeting Physical Activity Targets, 2011
14. Total Deaths, 2010	30. Estimated Uninsured Nonelderly Age 0-64, 2011
15. Malignant Neoplasm (Cancer) Deaths, 2010	31. Estimated Uninsured Children Age 0-18, 2011
16. Heart Disease Deaths, 2010	32. Estimated Uninsured Adults Age 19-64, 2011

Technical Notes

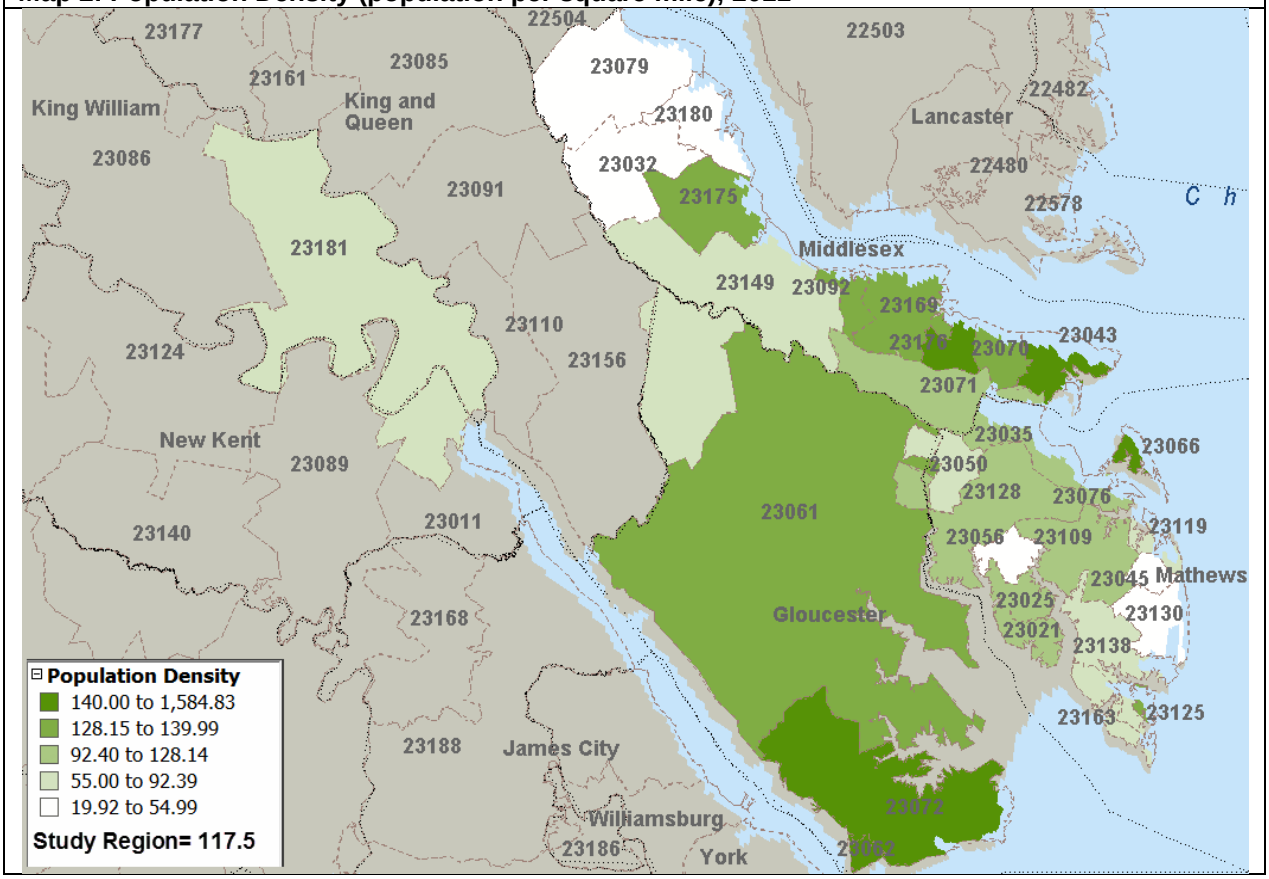
1. The study focuses on the Riverside Walter Reed Hospital (RWR) service area of 30 zip codes, most of which fall within Gloucester, King William, Mathews and Middlesex counties. Because zip code boundaries do not automatically align with city/county boundaries, there are some zip codes that extend beyond the county boundaries.

2. With the exception of population density, per capita income and median household income, the maps show counts rather than rates. Rates are not mapped at the zip code level because in some zip codes the population is too small to support rate-based comparisons.

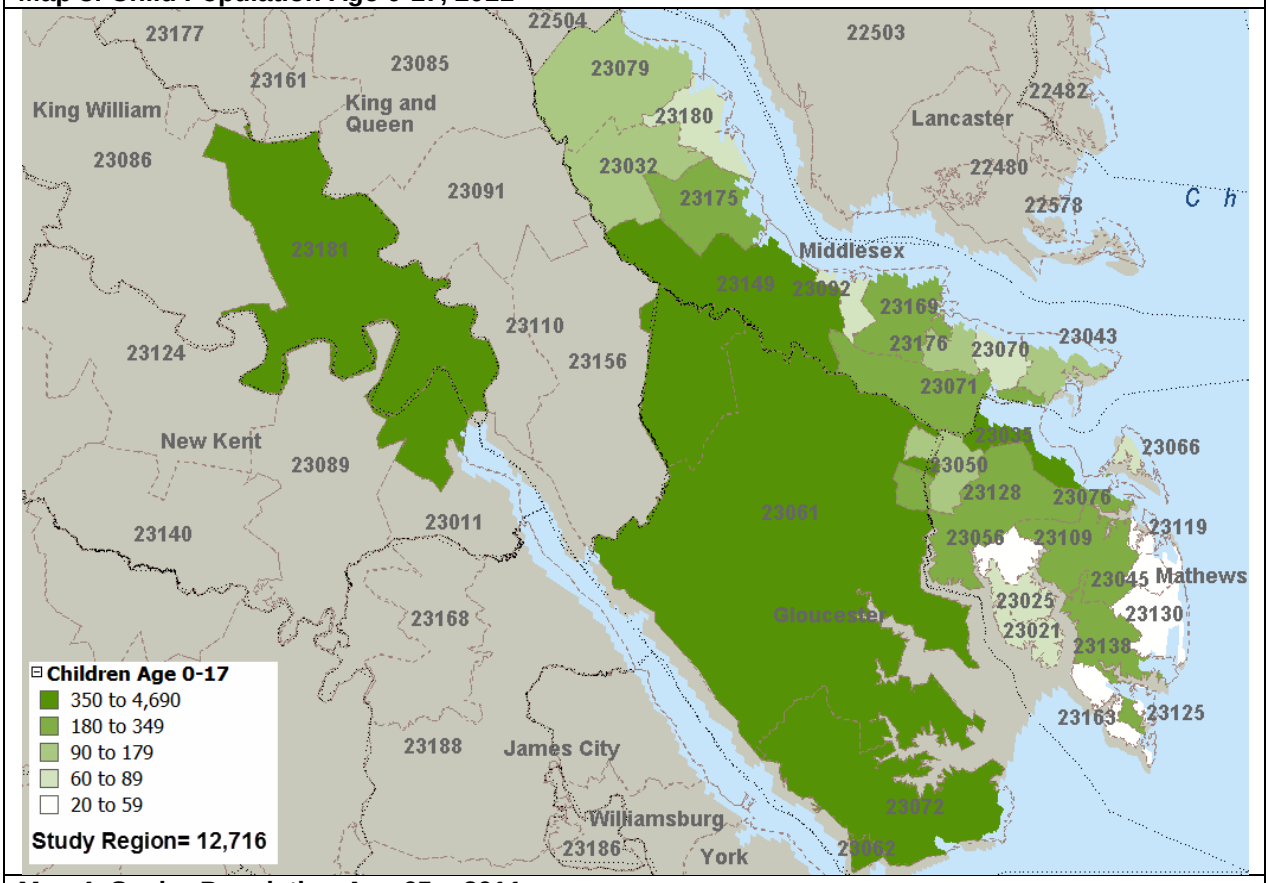
Map 1: Total Population, 2011



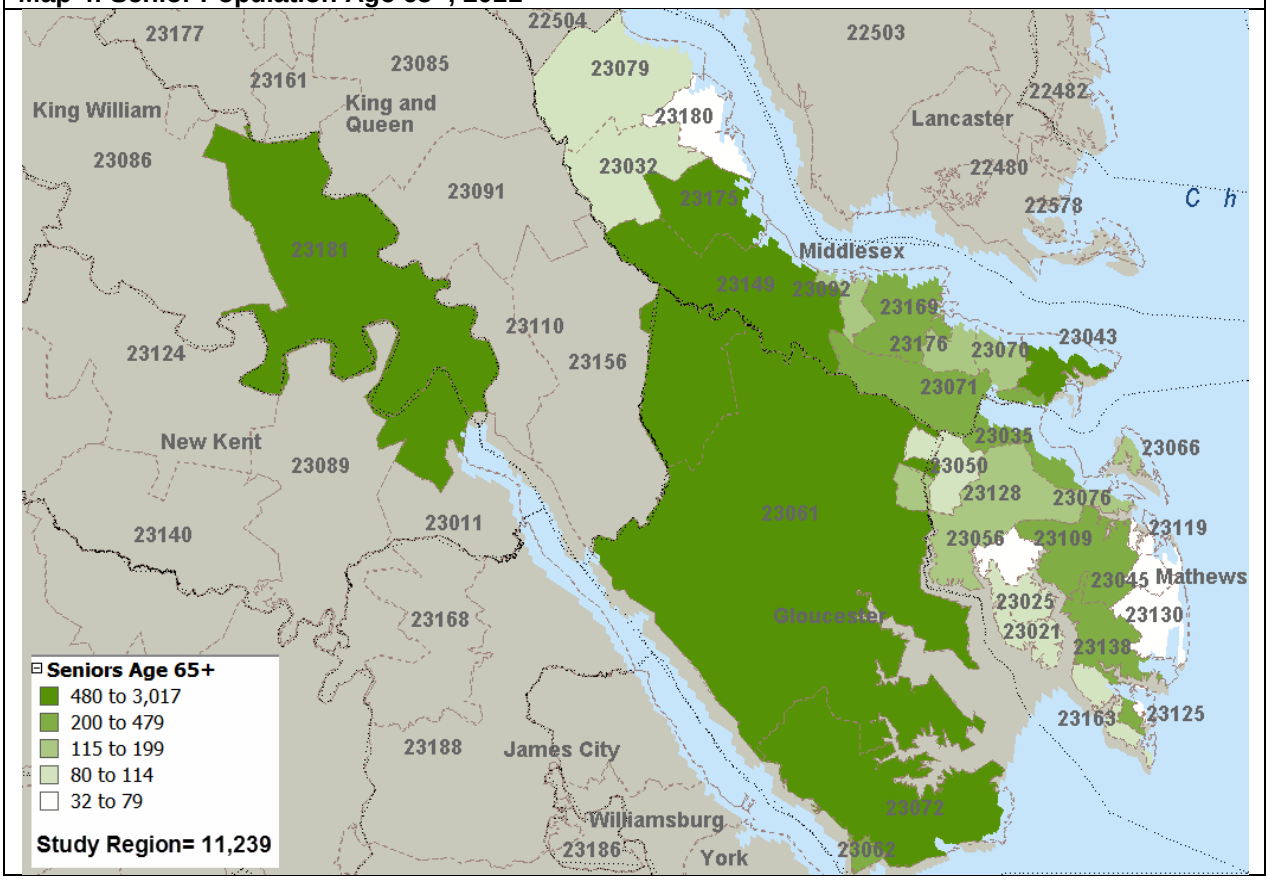
Map 2: Population Density (population per square mile), 2011



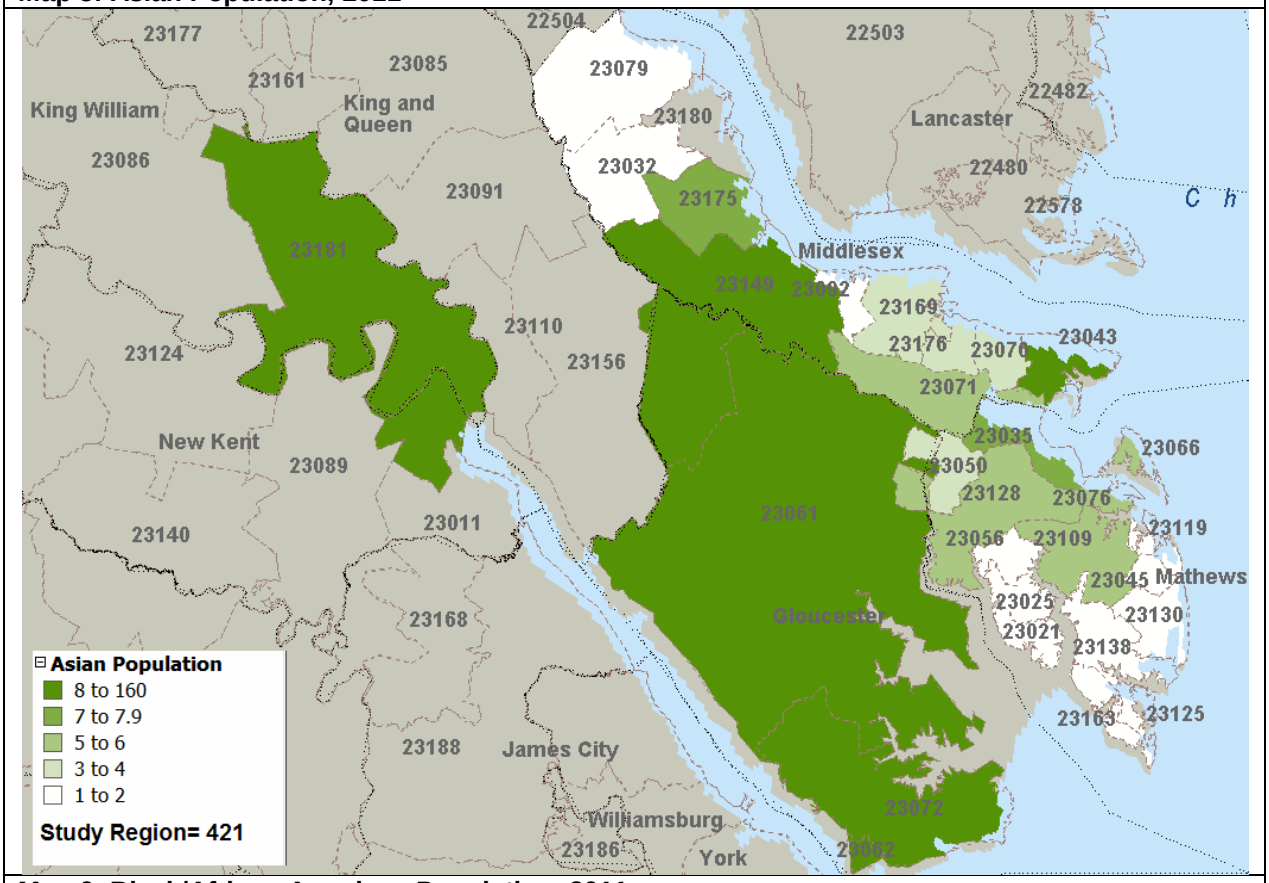
Map 3: Child Population Age 0-17, 2011



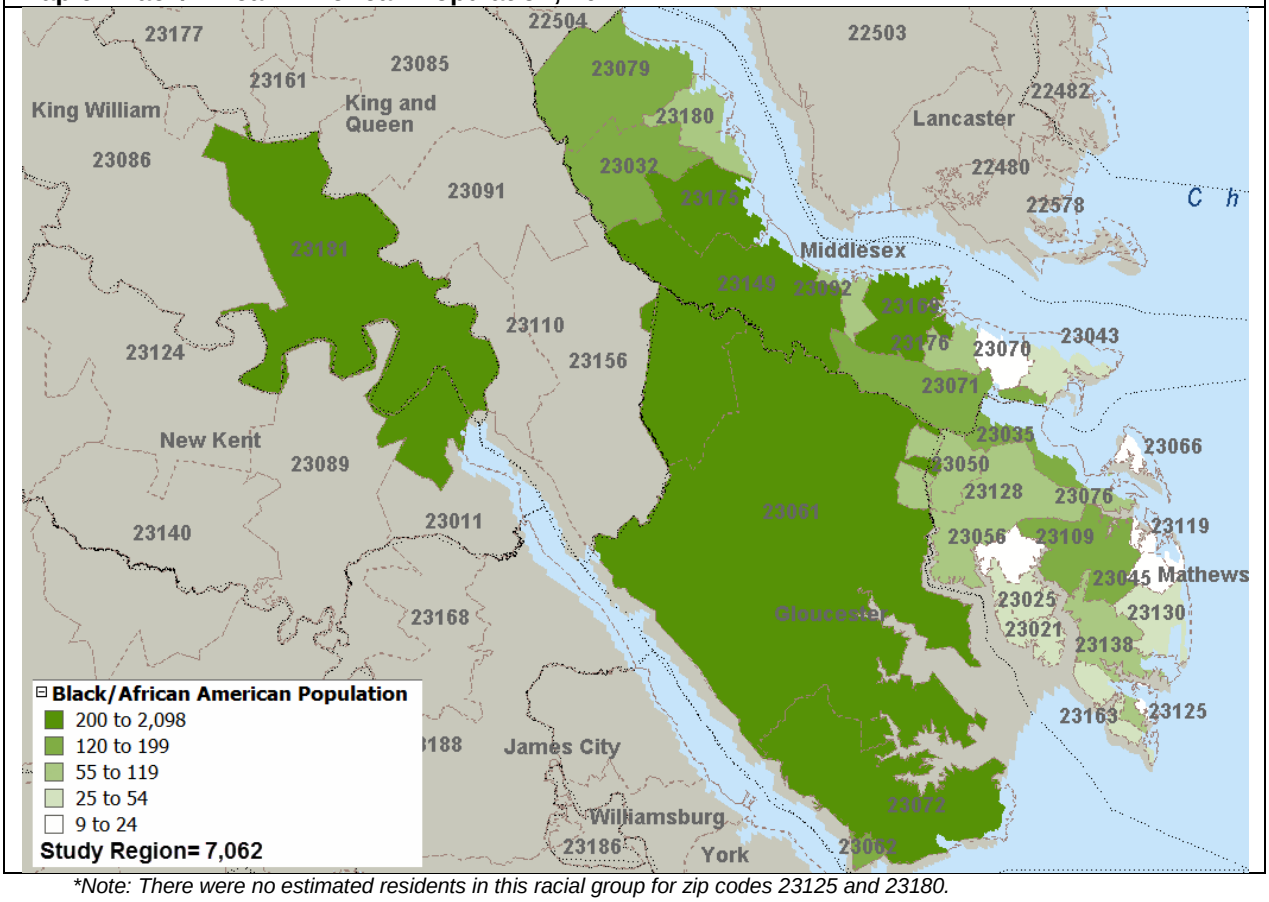
Map 4: Senior Population Age 65+, 2011



Map 5: Asian Population, 2011*

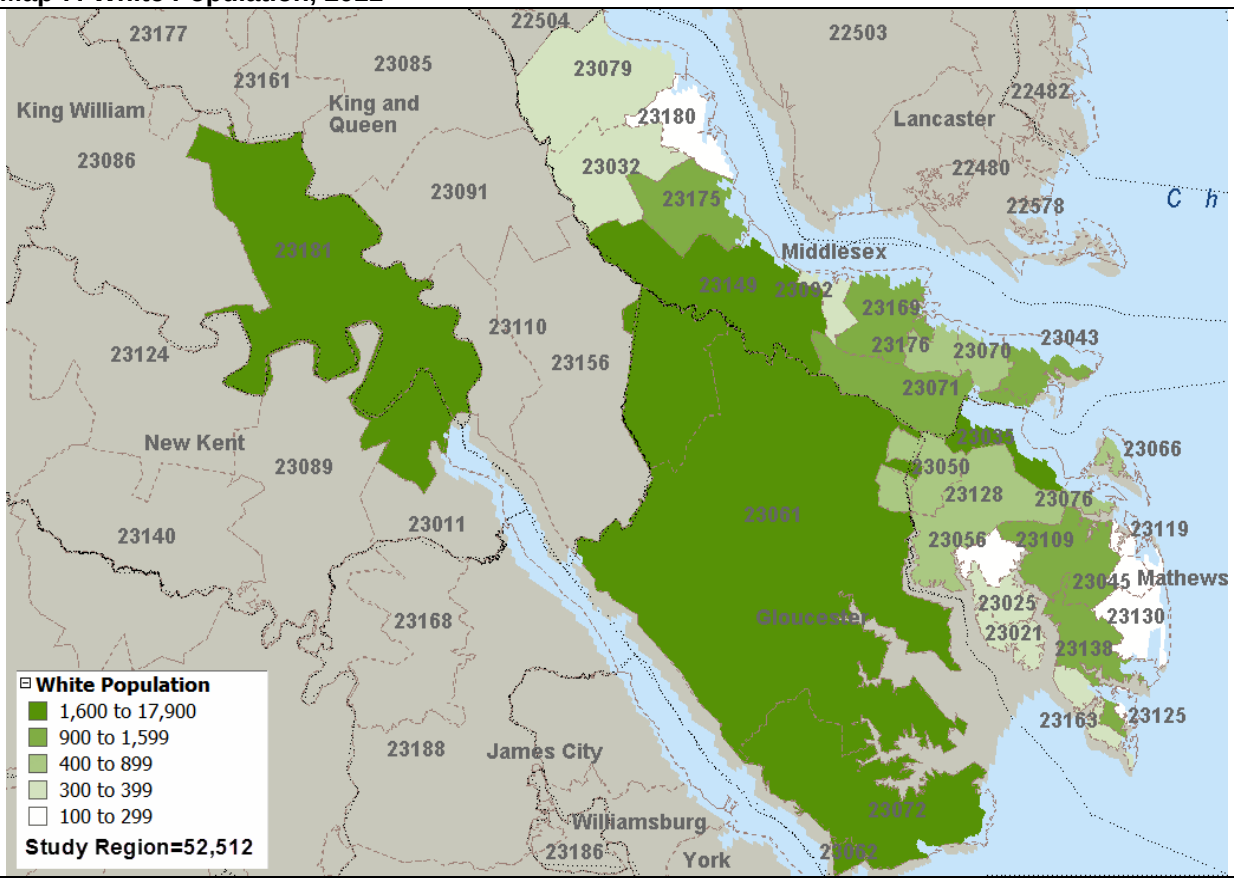


Map 6: Black/African American Population, 2011

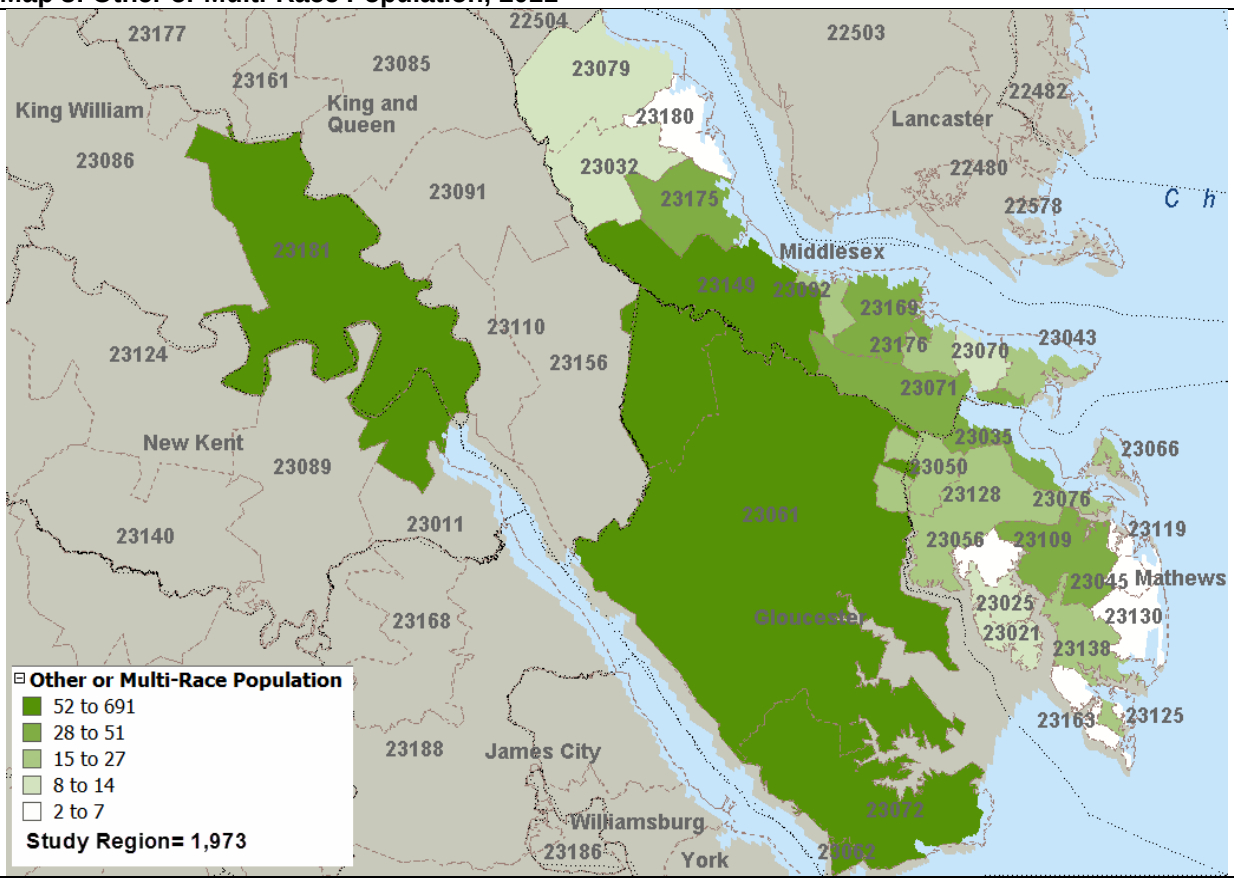


**Note: There were no estimated residents in this racial group for zip codes 23125 and 23180.*

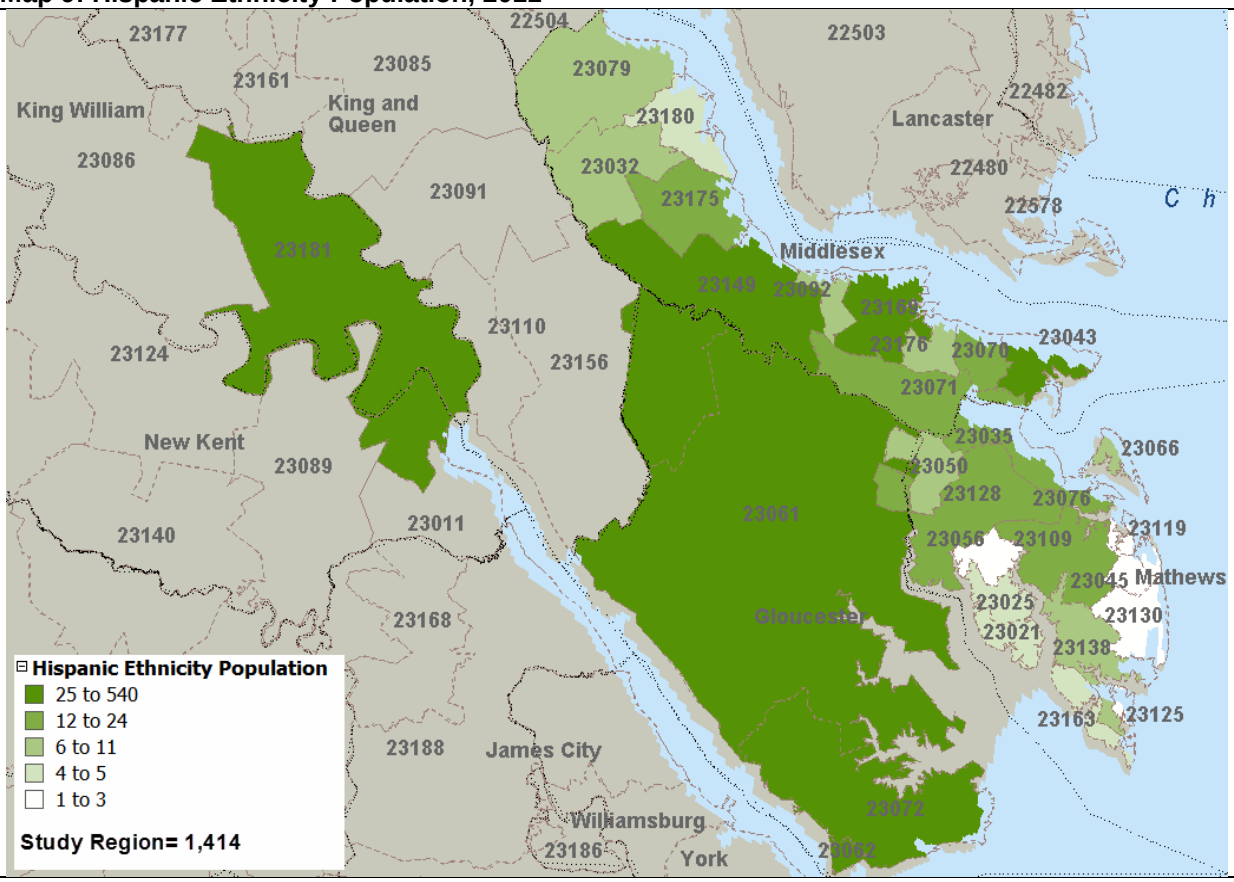
Map 7: White Population, 2011



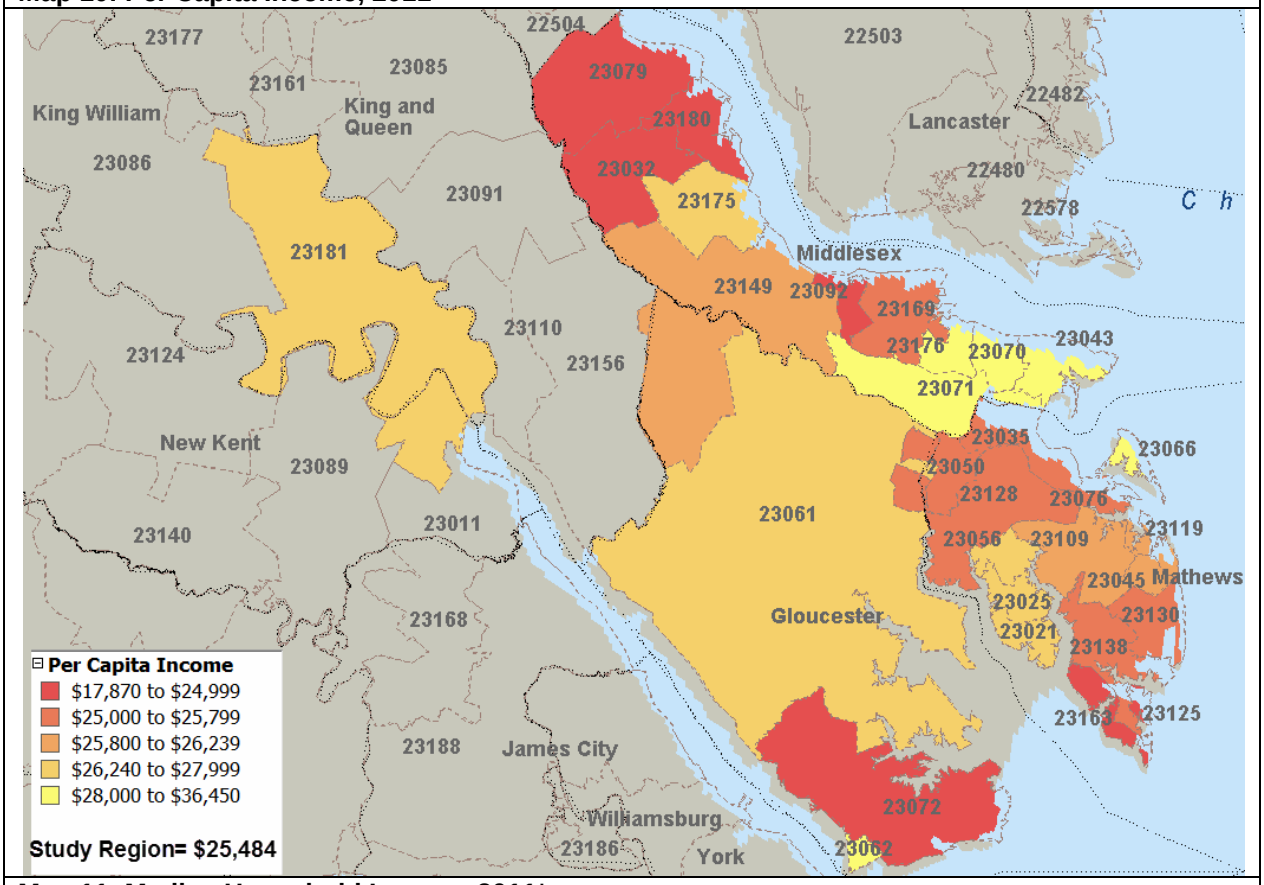
Map 8: Other or Multi-Race Population, 2011



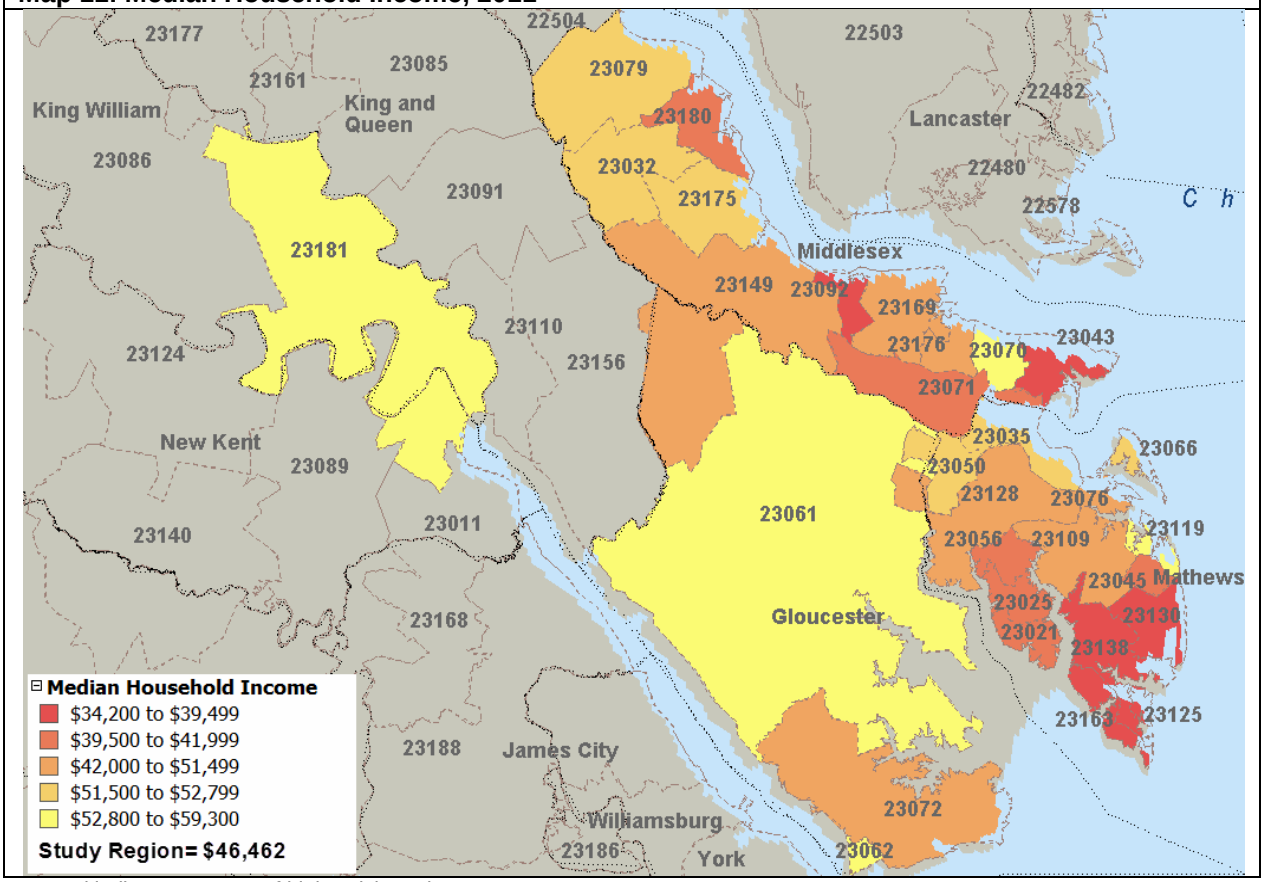
Map 9: Hispanic Ethnicity Population, 2011



Map 10: Per Capita Income, 2011*

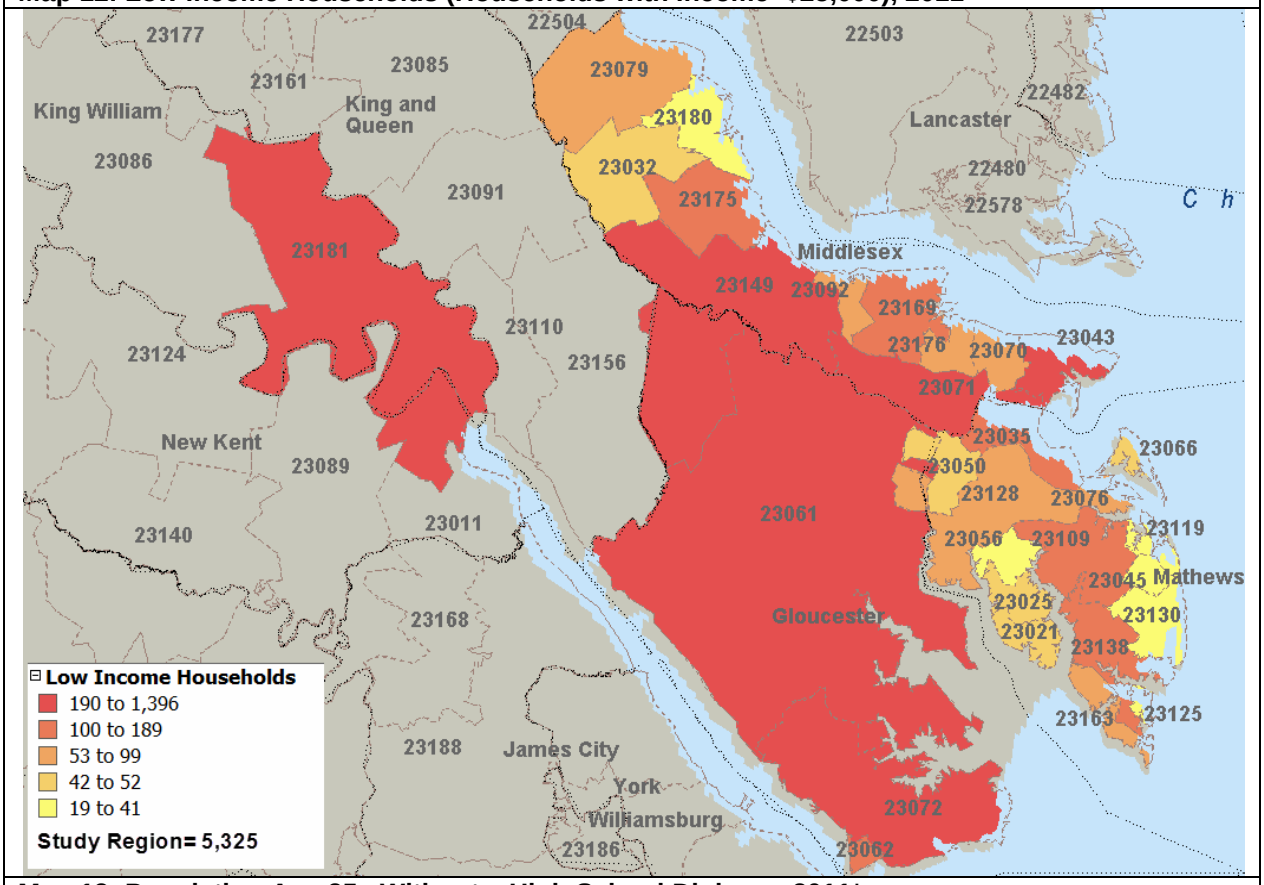


Map 11: Median Household Income, 2011*

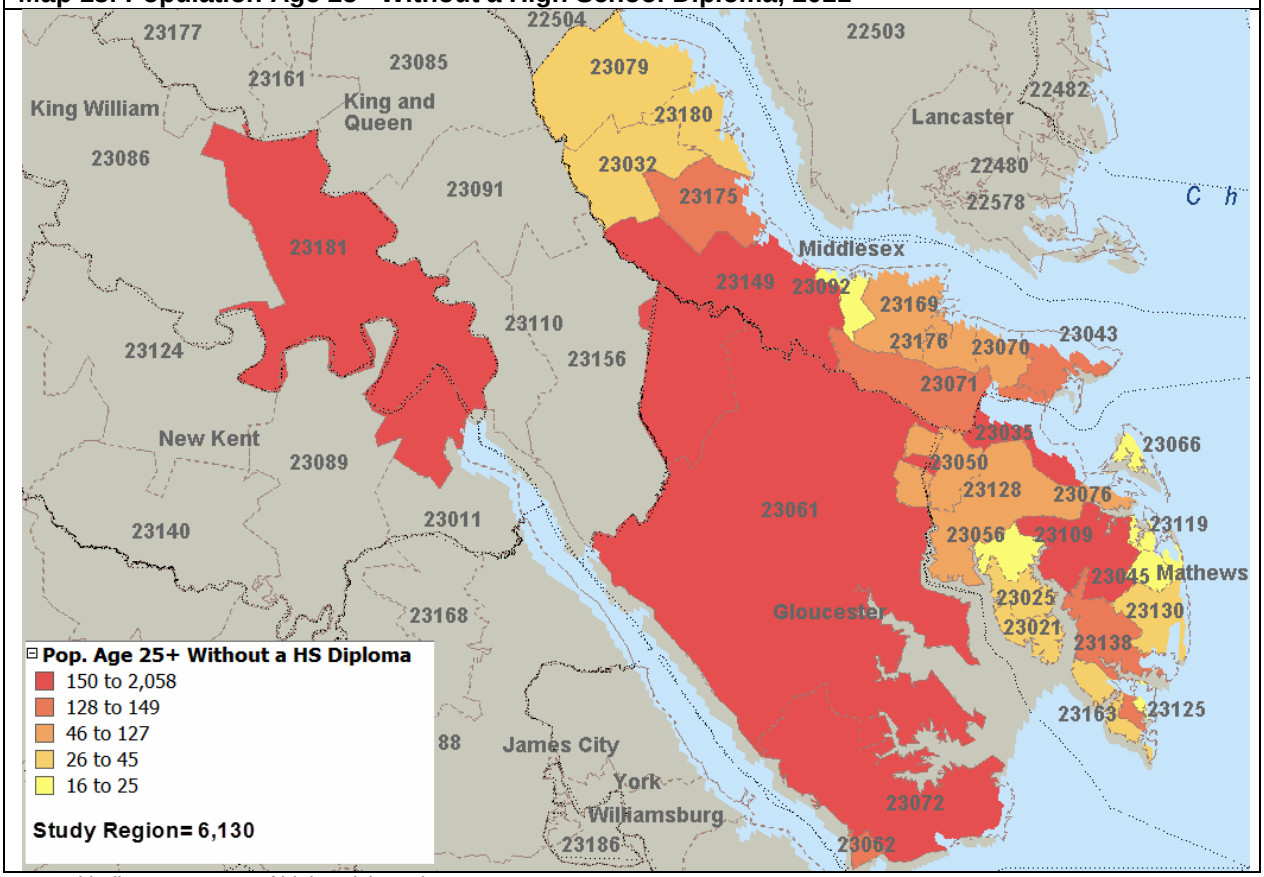


**Red indicates an area of higher risk on these maps.*

Map 12: Low Income Households (Households with Income<$25,000), 2011*

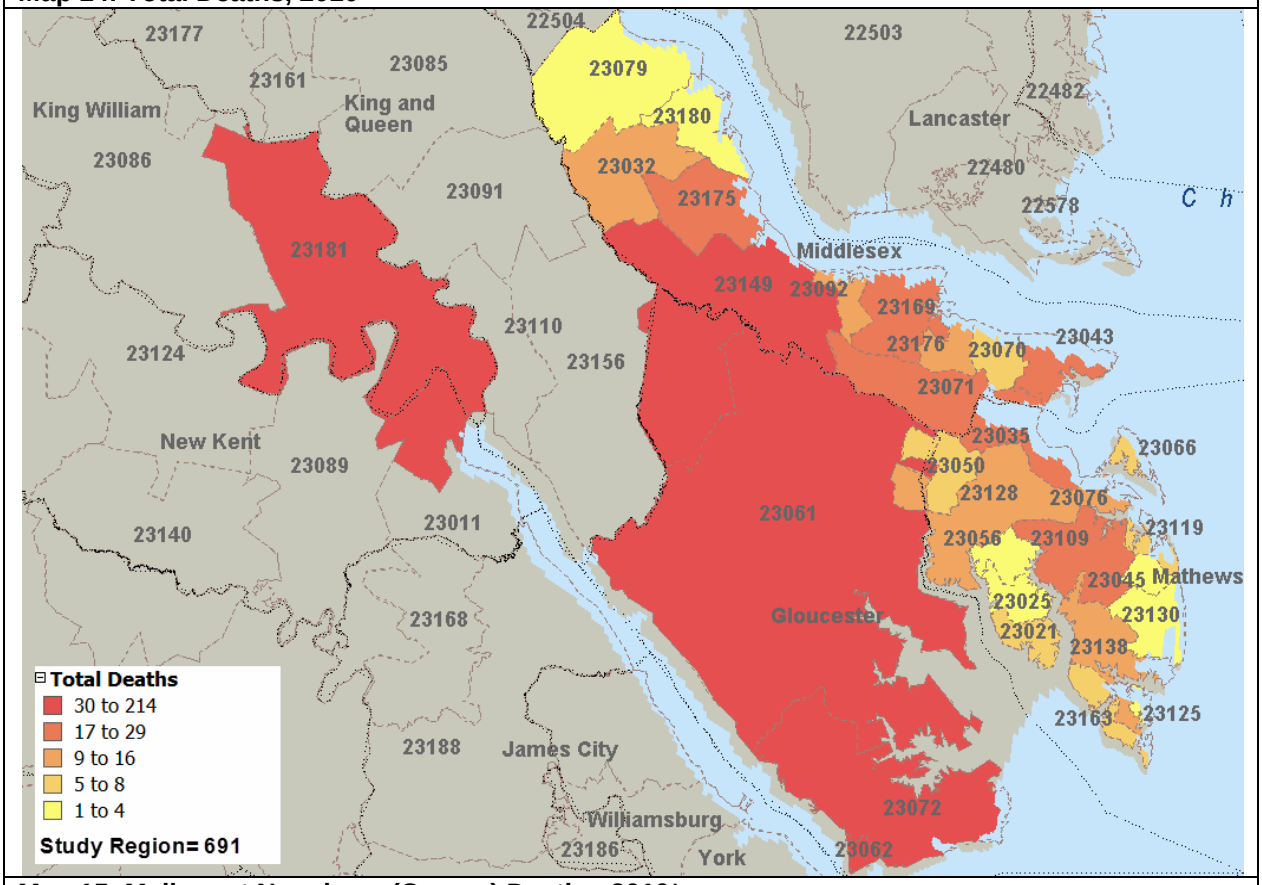


Map 13: Population Age 25+ Without a High School Diploma, 2011*

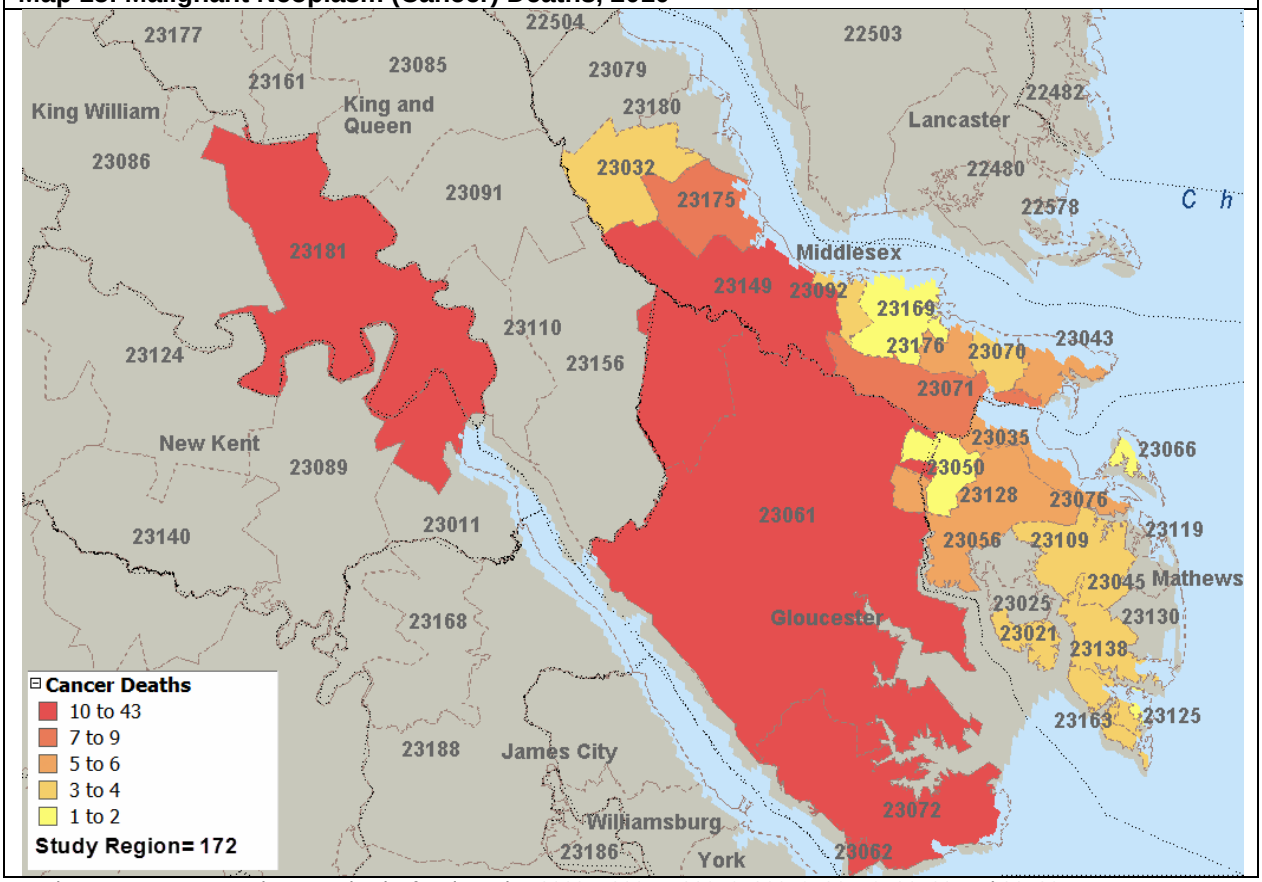


**Red indicates an area of higher risk on these maps.*

Map 14: Total Deaths, 2010

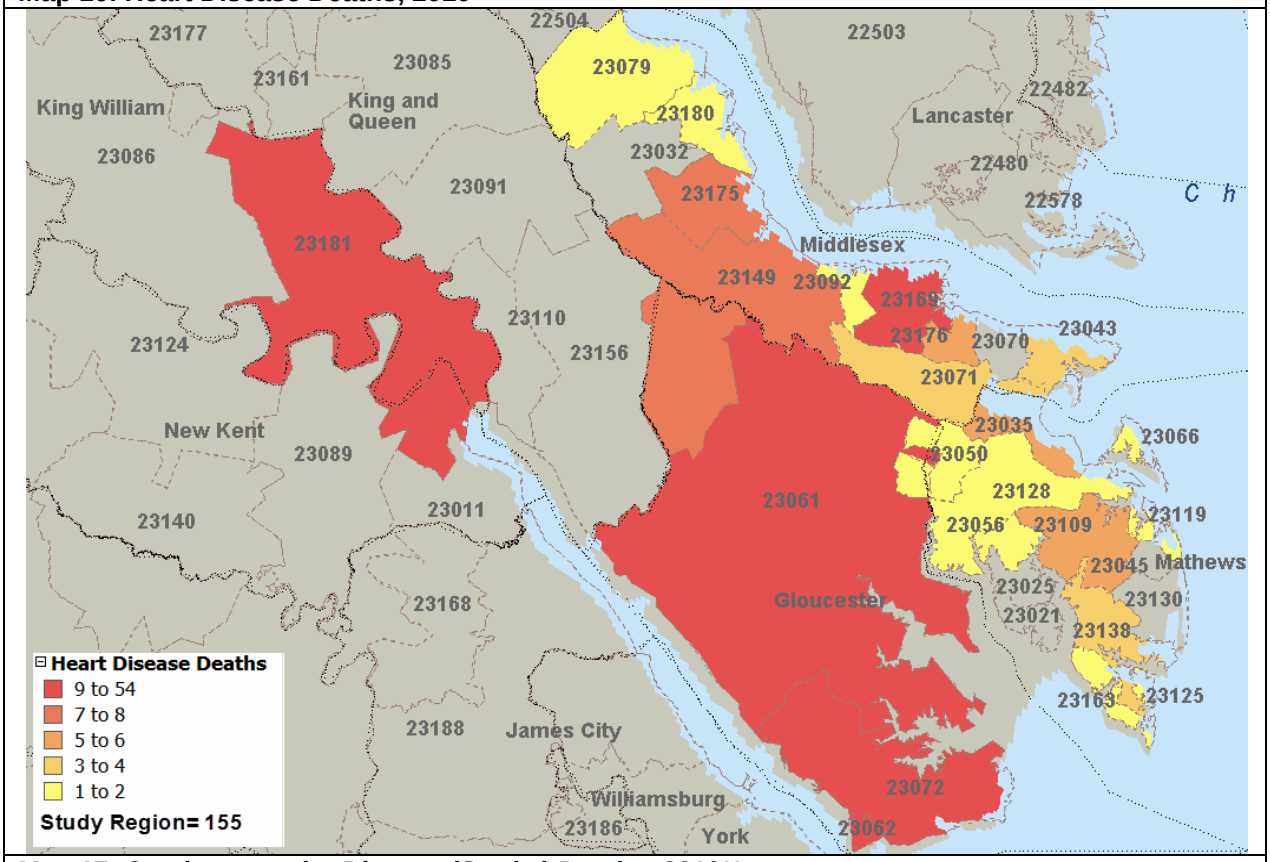


Map 15: Malignant Neoplasm (Cancer) Deaths, 2010*

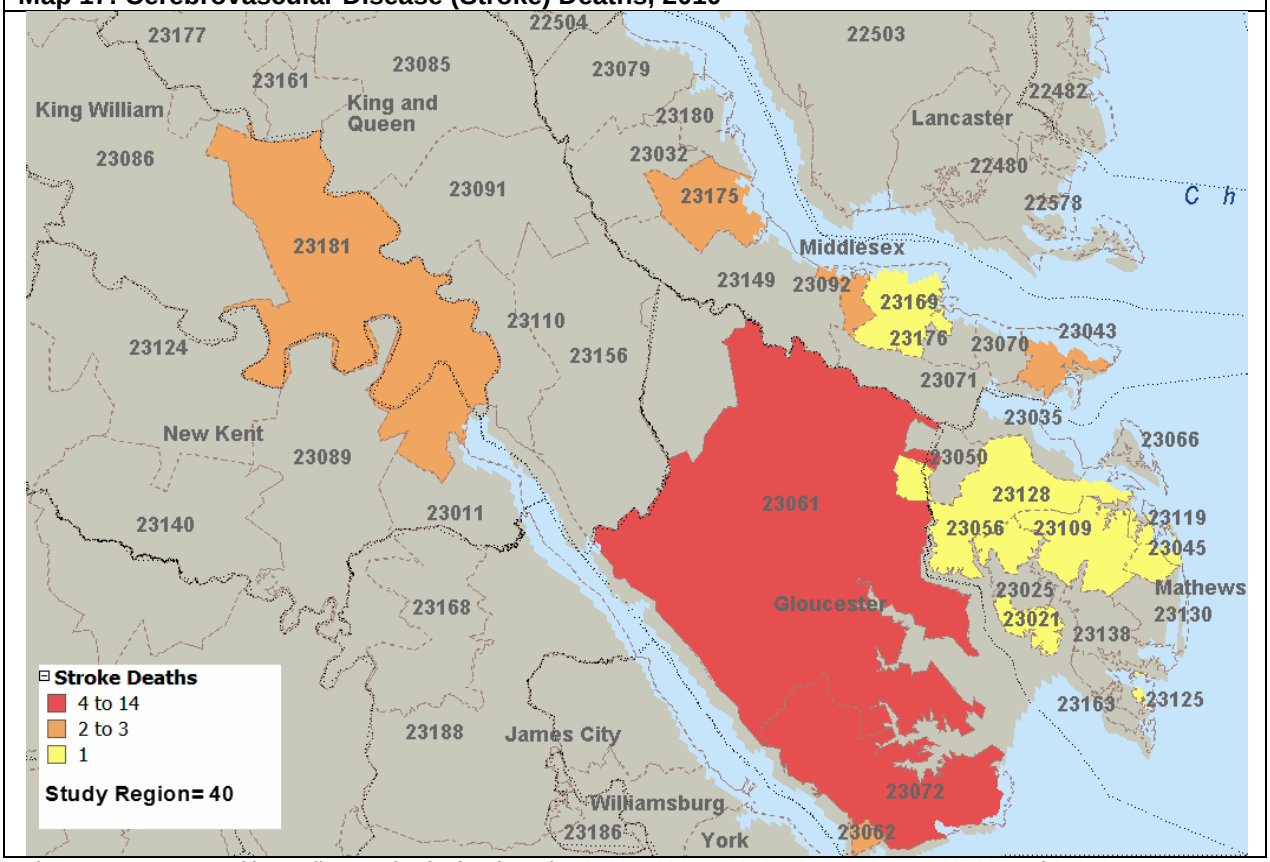


** There were no reported cancer deaths for zip codes 23025, 23045, 23056, 23079, 23119, 23130 and 23180.*

Map 16: Heart Disease Deaths, 2010*



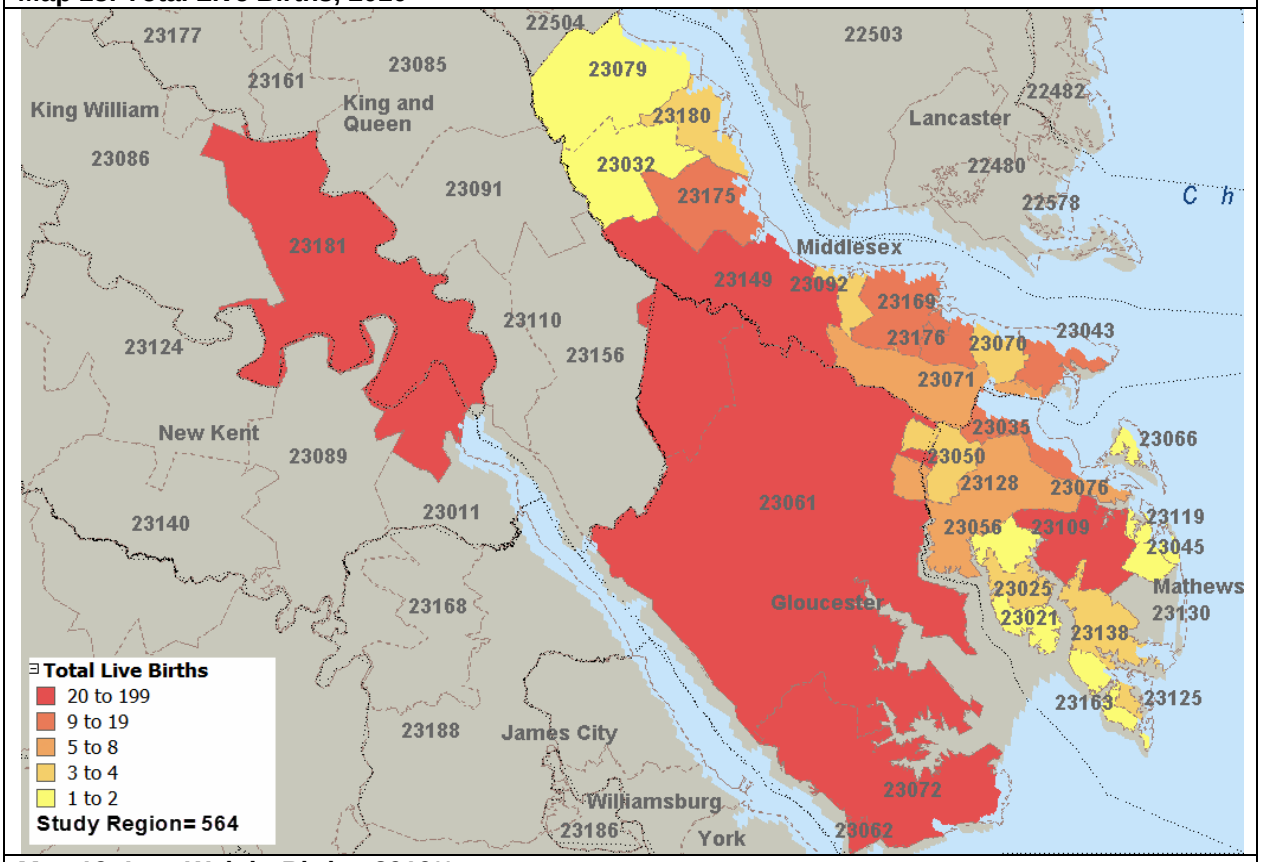
Map 17: Cerebrovascular Disease (Stroke) Deaths, 2010**



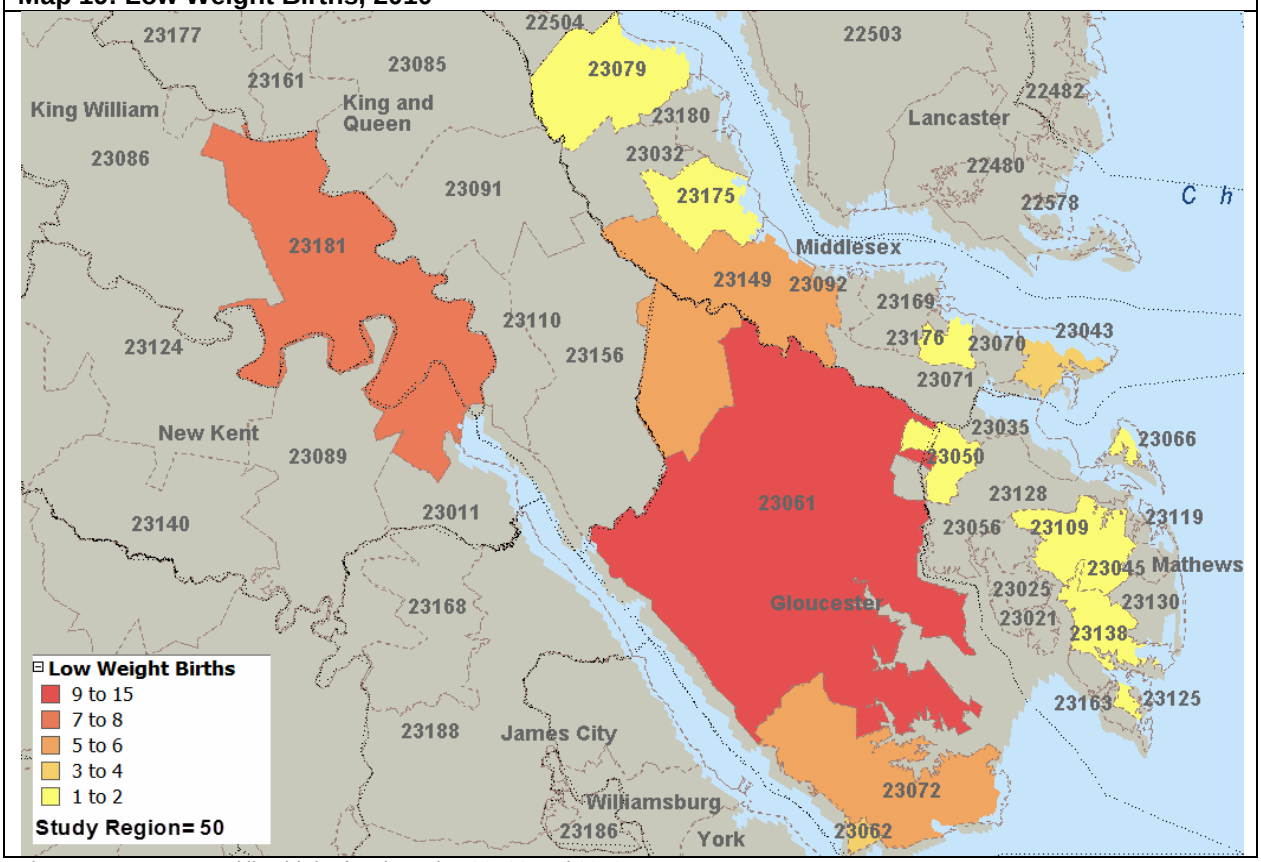
** There were no reported heart disease deaths for zip codes 23025, 23045, 23130, 23076, 23021, 23032, and 23070.*

** *There were no reported stroke deaths for zip codes 23025, 23130, 23076, 23032, 23070, 23079, 23180, 23066, 23163, 23050, 23138, 23071, 23035, 23176, and 23149.*

Map 18: Total Live Births, 2010*



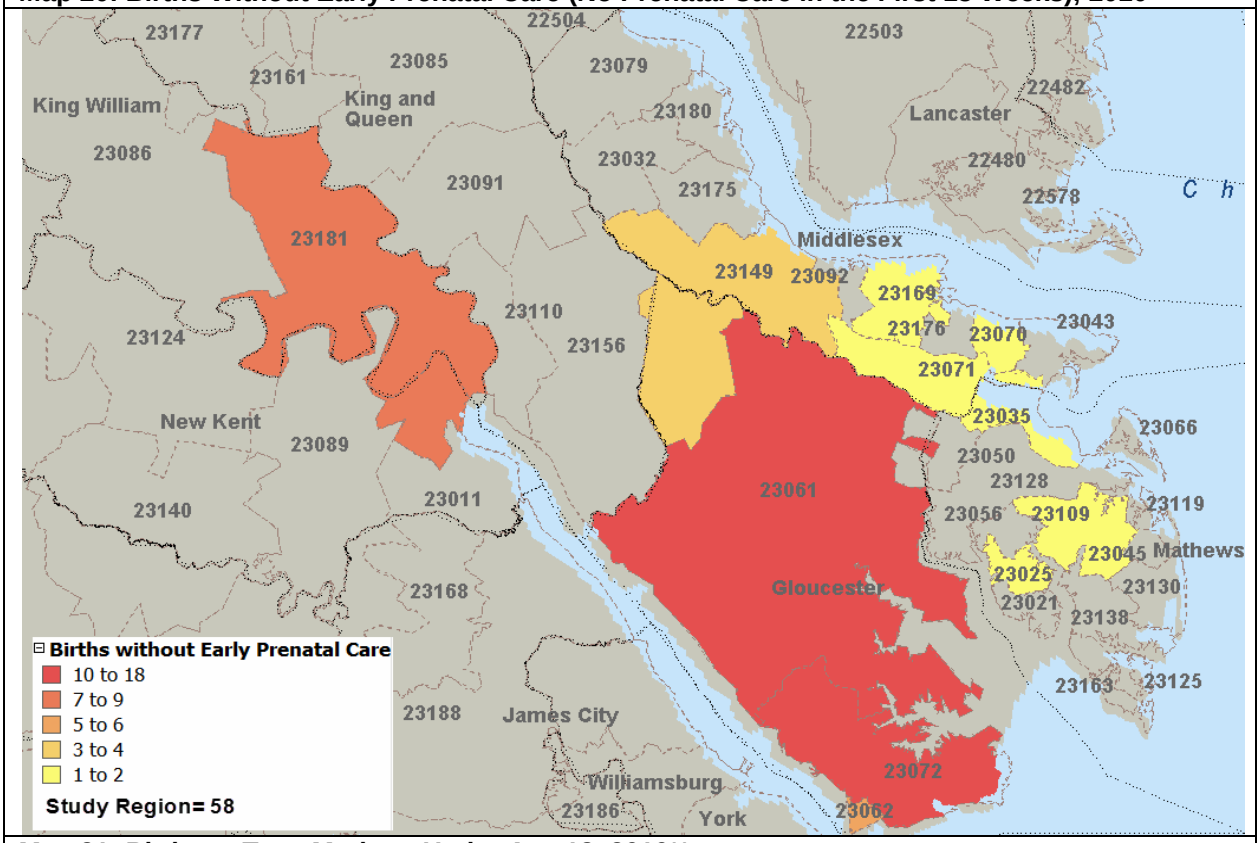
Map 19: Low Weight Births, 2010**



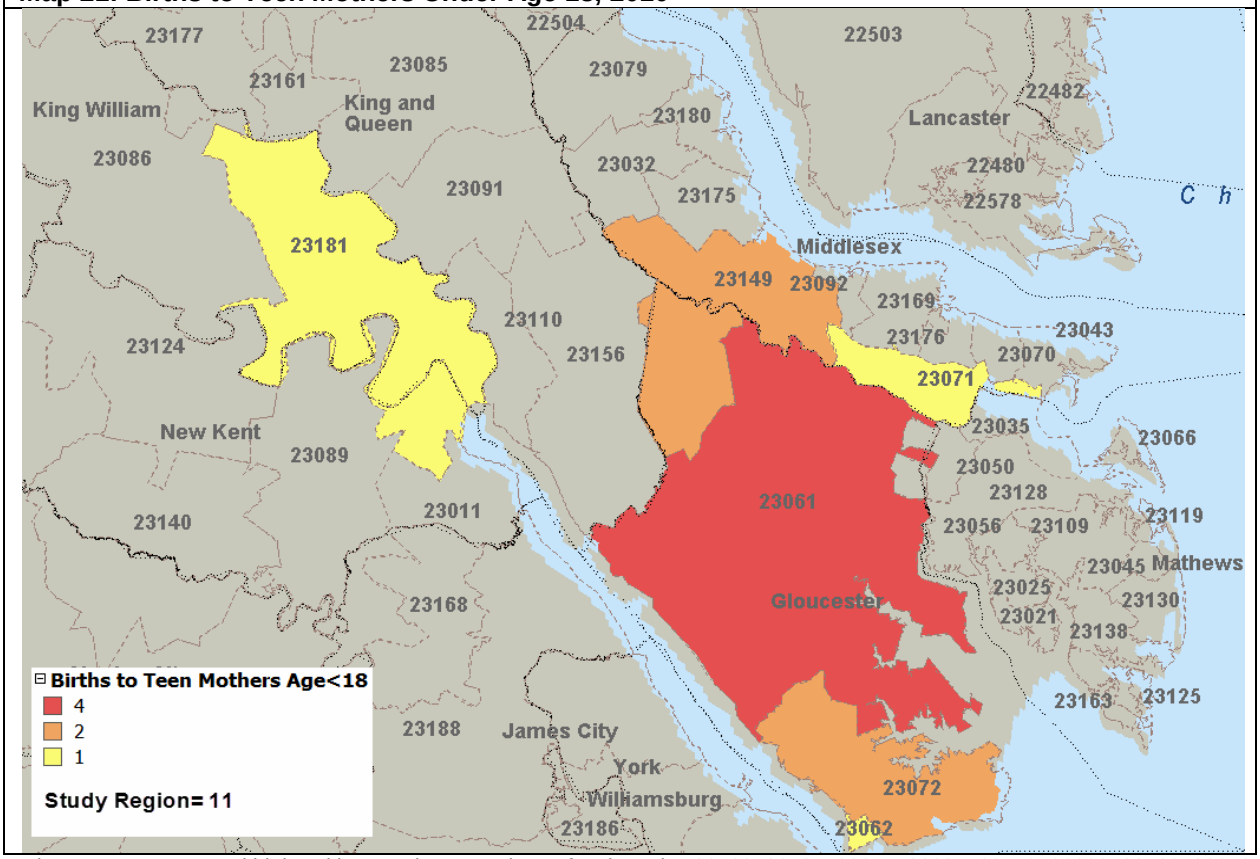
**There were no reported live births for zip codes 23130 and 23125.*

** *There were no reported low weight births for zip codes 23130, 23125, 23045, 23021, 23119, 23032, 23163, 23056, 23025, 23180, 23092, 23070, 23076, 23071, 23128, 23169, and 23035.*

Map 20: Births Without Early Prenatal Care (No Prenatal Care in the First 13 Weeks), 2010*



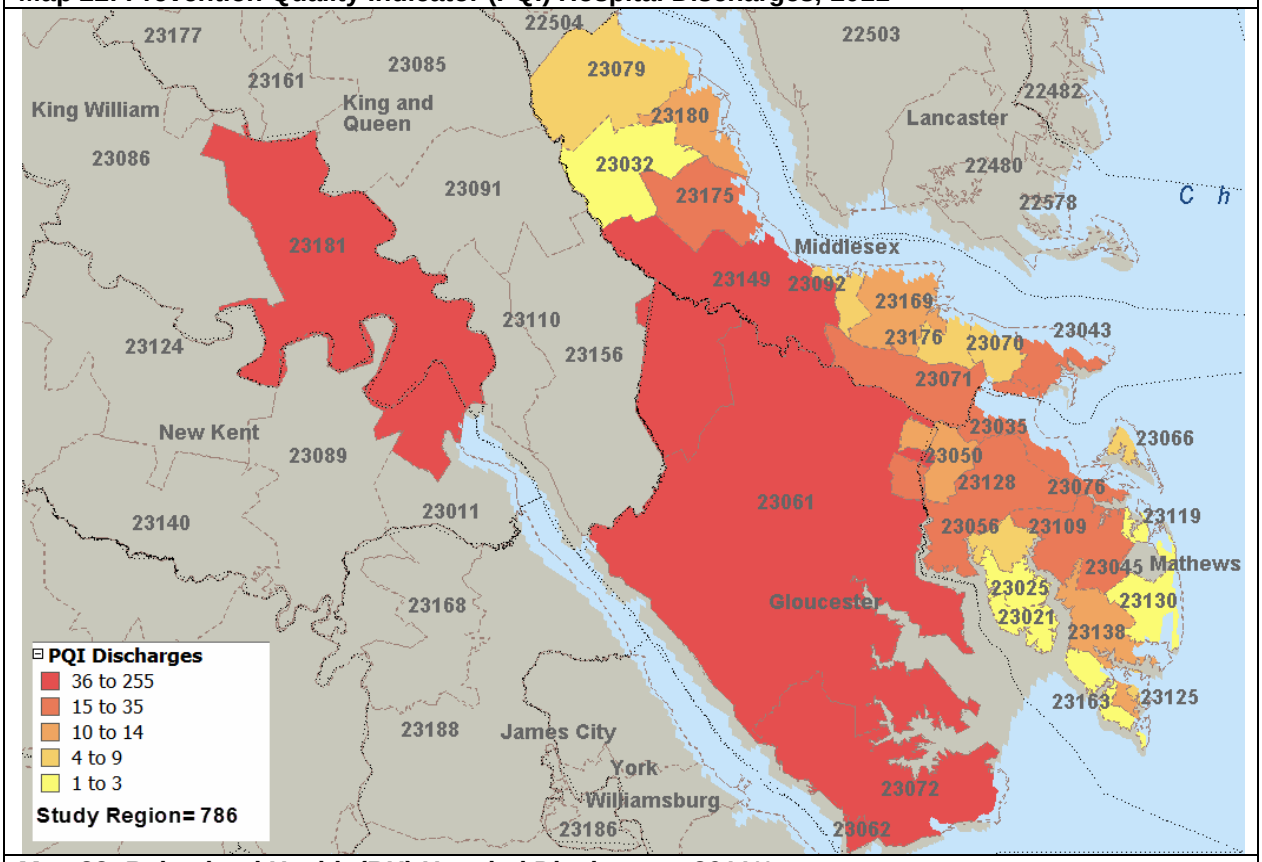
Map 21: Births to Teen Mothers Under Age 18, 2010**



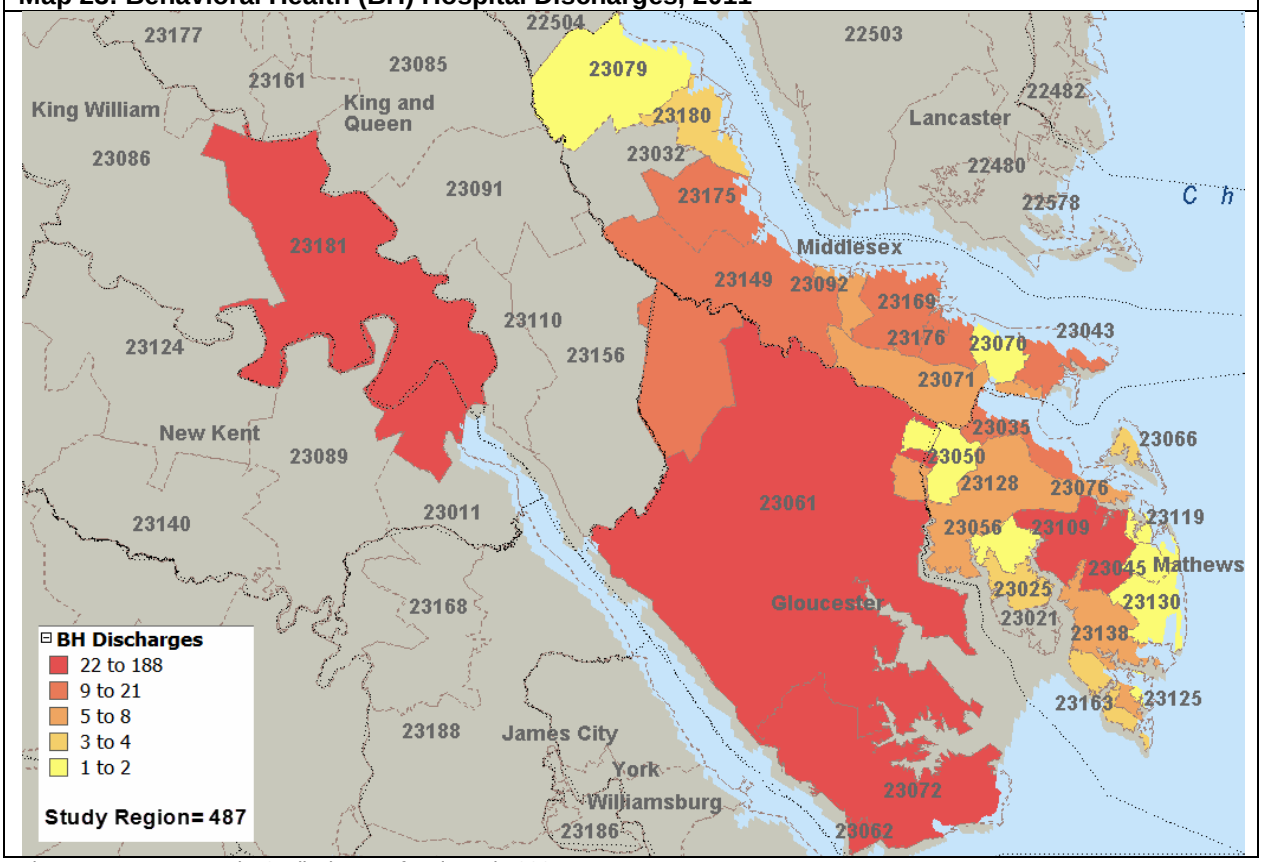
** There were no reported births without early prenatal care for zip codes 23130, 23125, 23045, 23021, 23119, 23032, 23163, 23056, 23180, 23092, 23076, 23128, 23066, 23079, 23138, 23050, 23176, 23175, and 23043.*

** *There were no reported births to teen mothers under age 18 for zip codes 23130, 23125, 23045, 23021, 23119, 23032, 23163, 23056, 23180, 23092, 23076, 23128, 23066, 23079, 23138, 23050, 23176, 23175, 23043, 23025, 23070, 23169, 23109, and 23035.*

Map 22: Prevention Quality Indicator (PQI) Hospital Discharges, 2011*



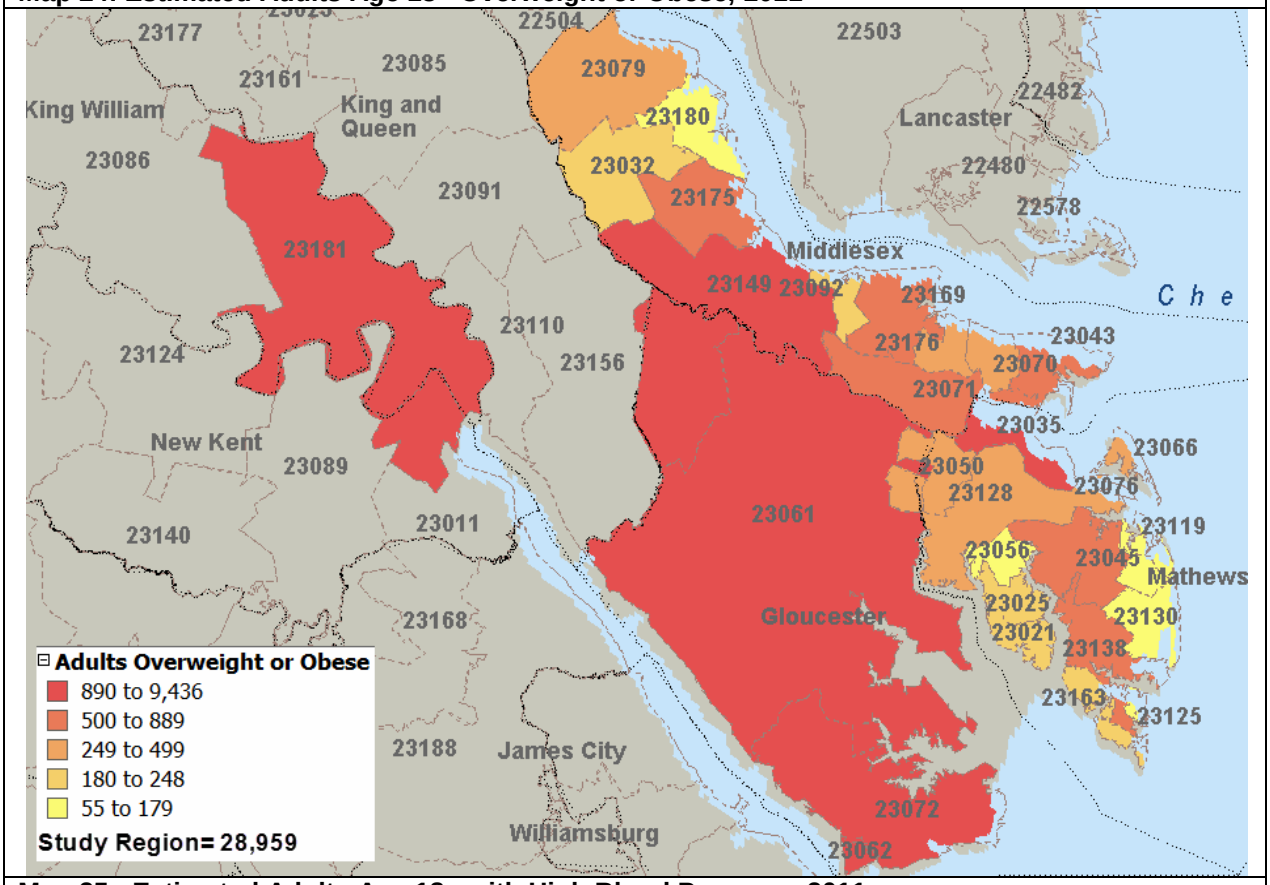
Map 23: Behavioral Health (BH) Hospital Discharges, 2011**



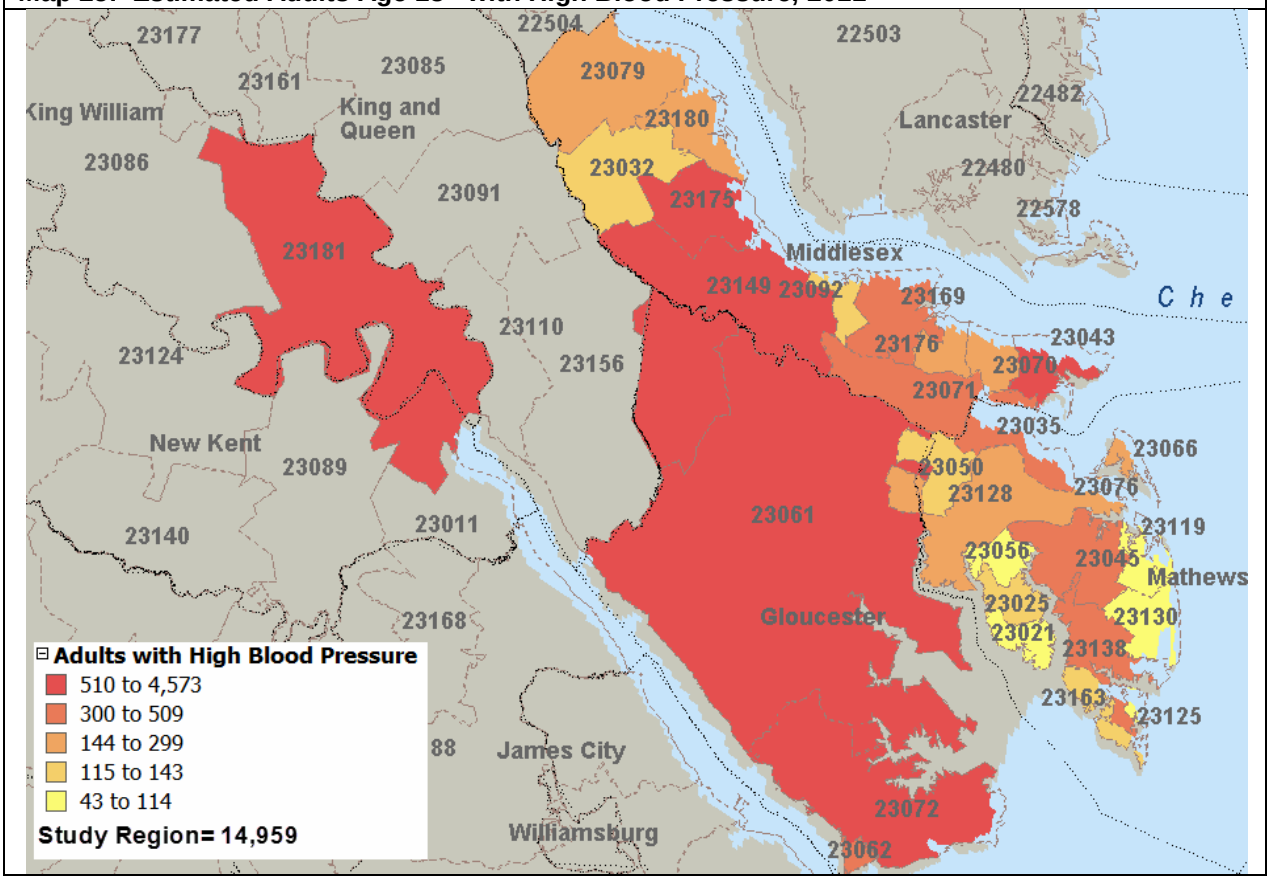
** There were no reported PQI discharges for zip code 23045.*

*** There were no reported BH discharges for zip codes 23032 and 23021.*

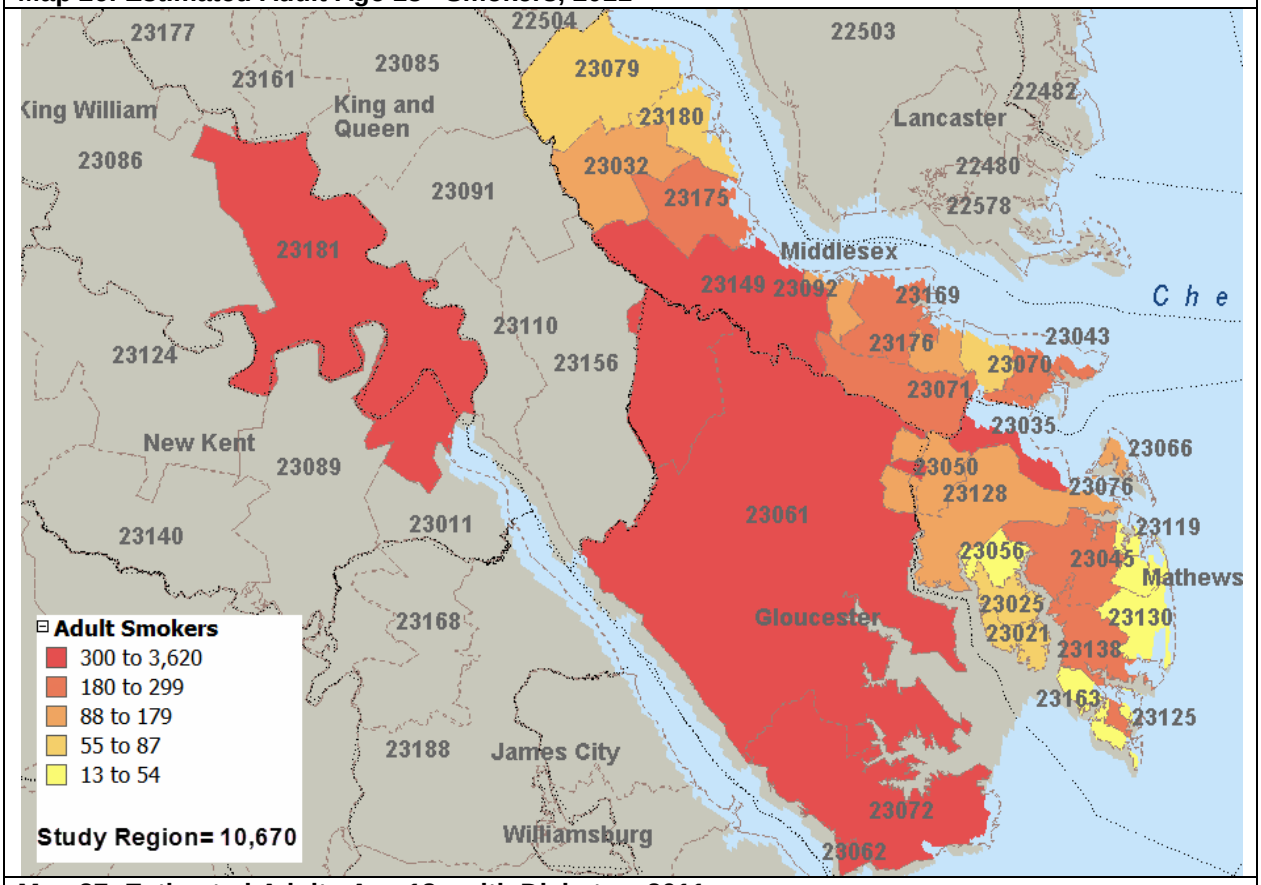
Map 24: Estimated Adults Age 18+ Overweight or Obese, 2011



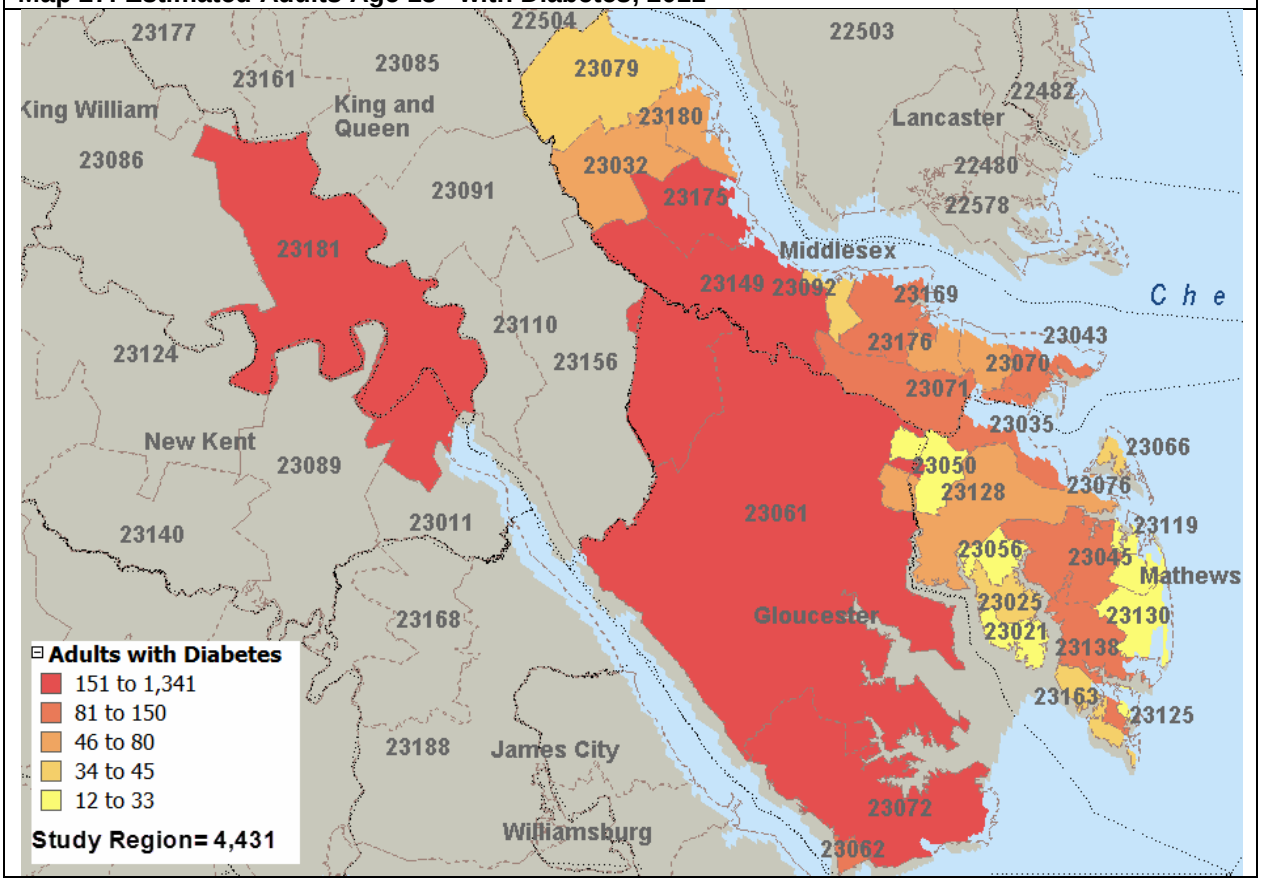
Map 25: Estimated Adults Age 18+ with High Blood Pressure, 2011



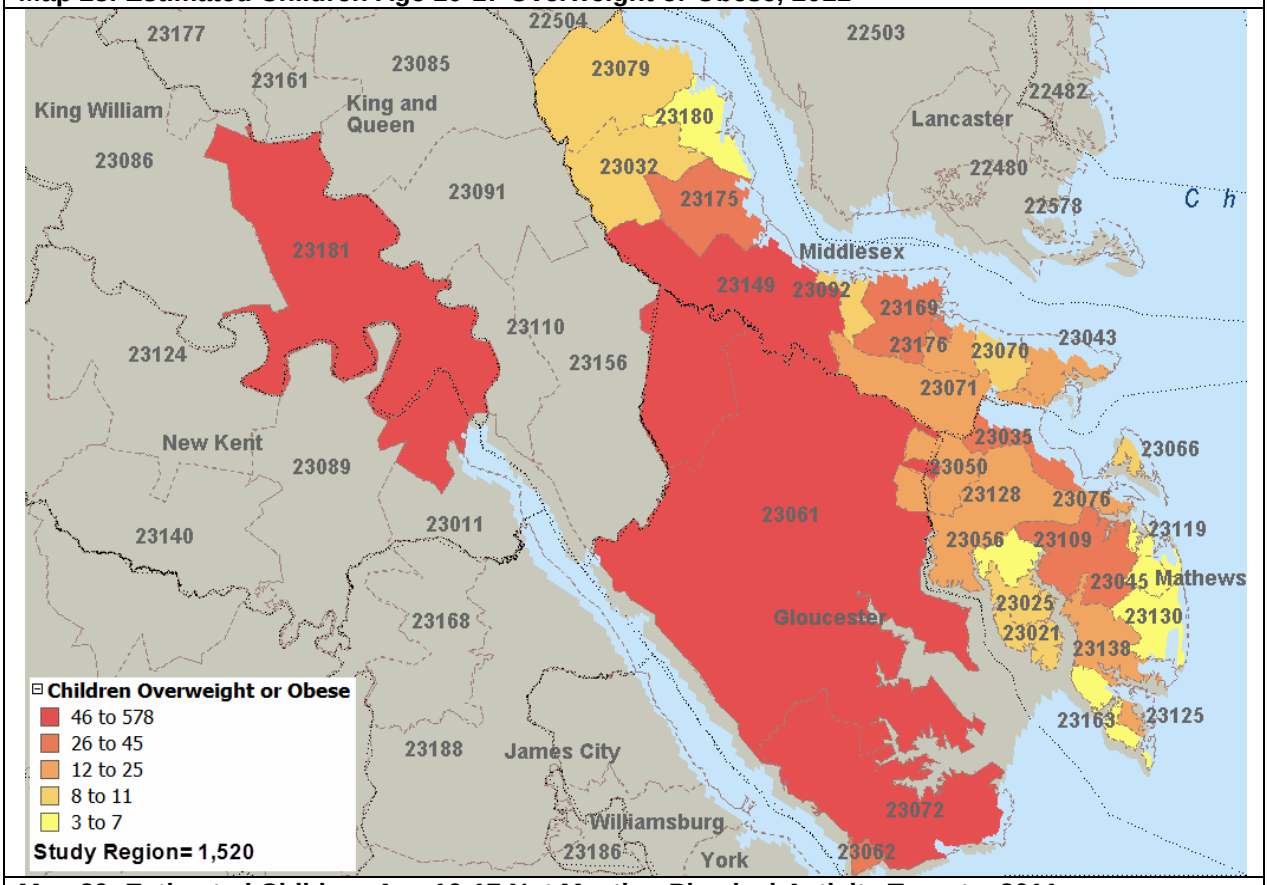
Map 26: Estimated Adult Age 18+ Smokers, 2011



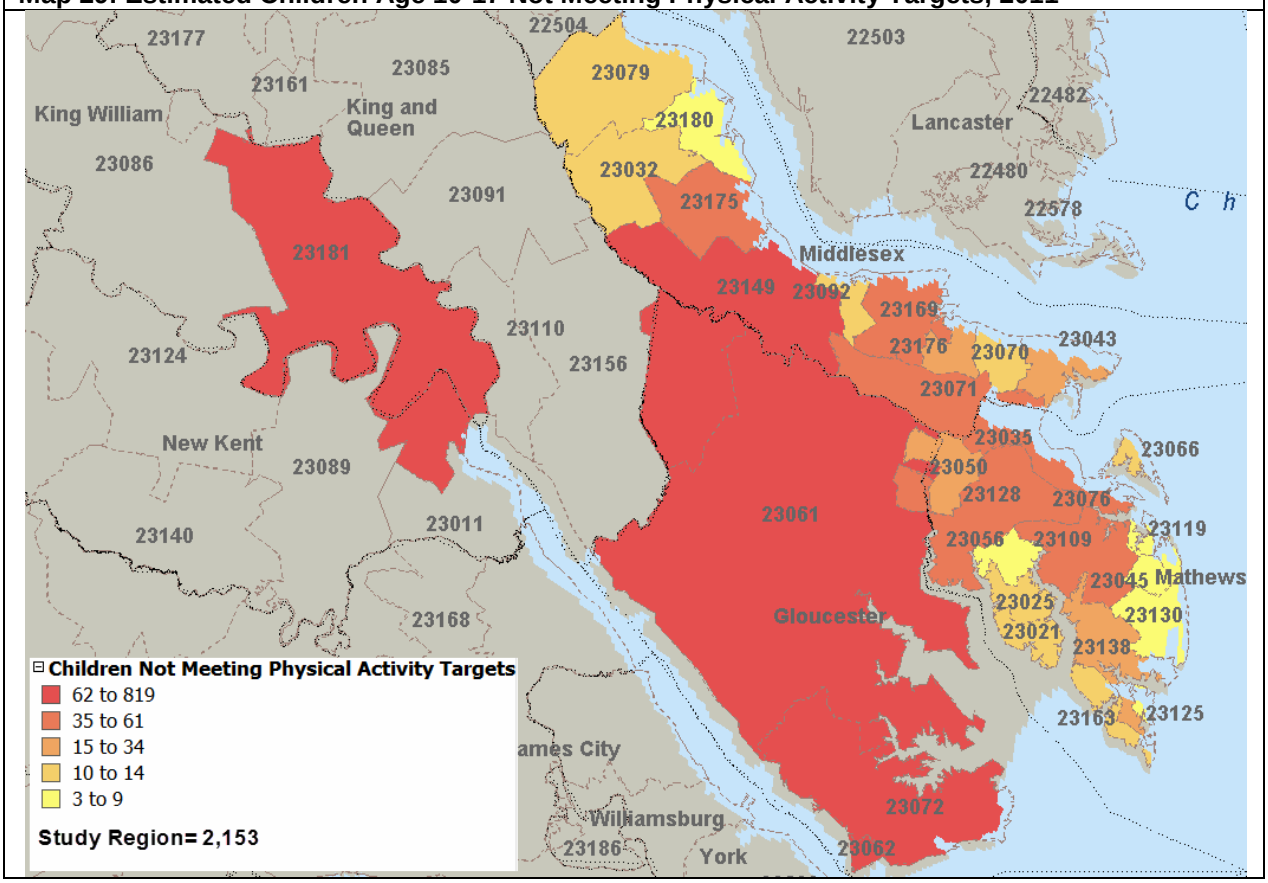
Map 27: Estimated Adults Age 18+ with Diabetes, 2011



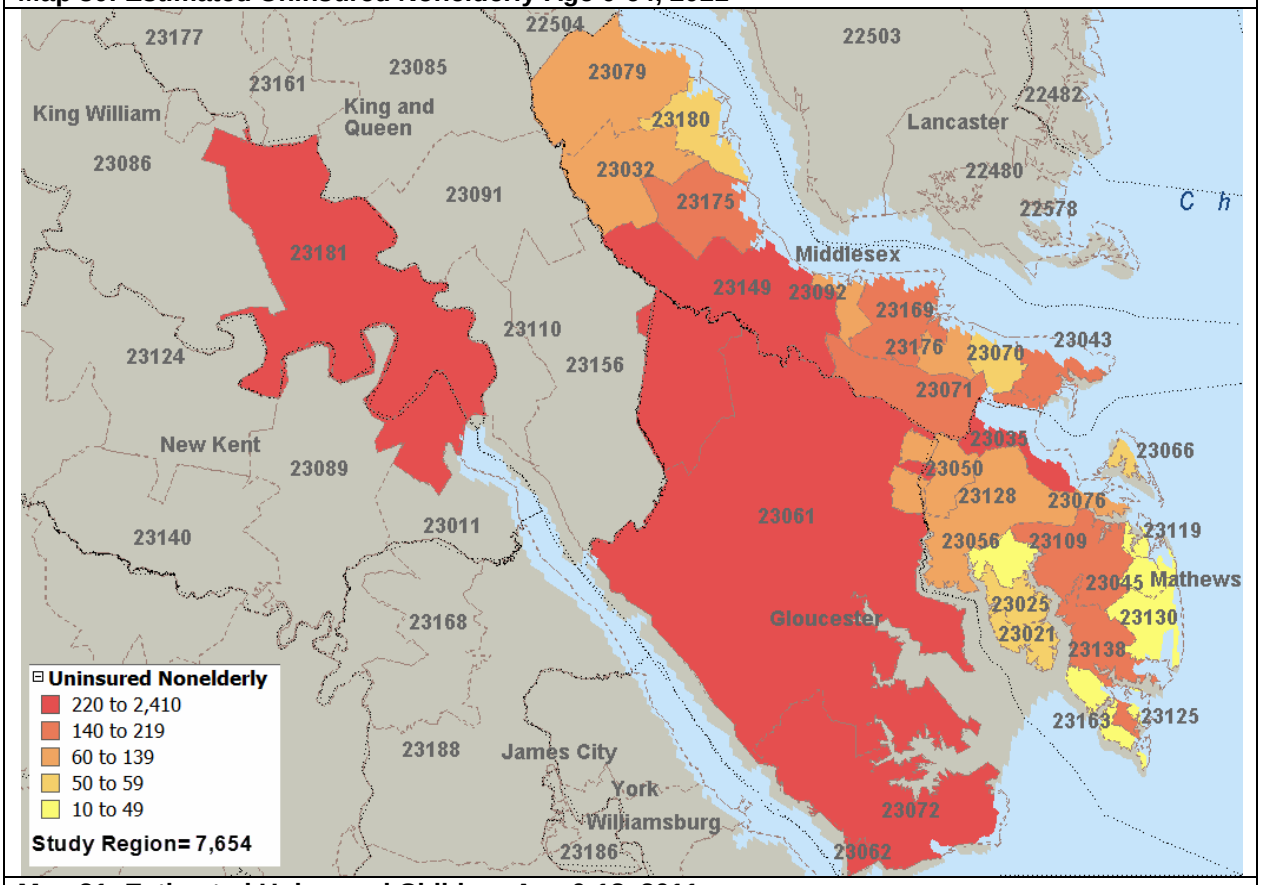
Map 28: Estimated Children Age 10-17 Overweight or Obese, 2011



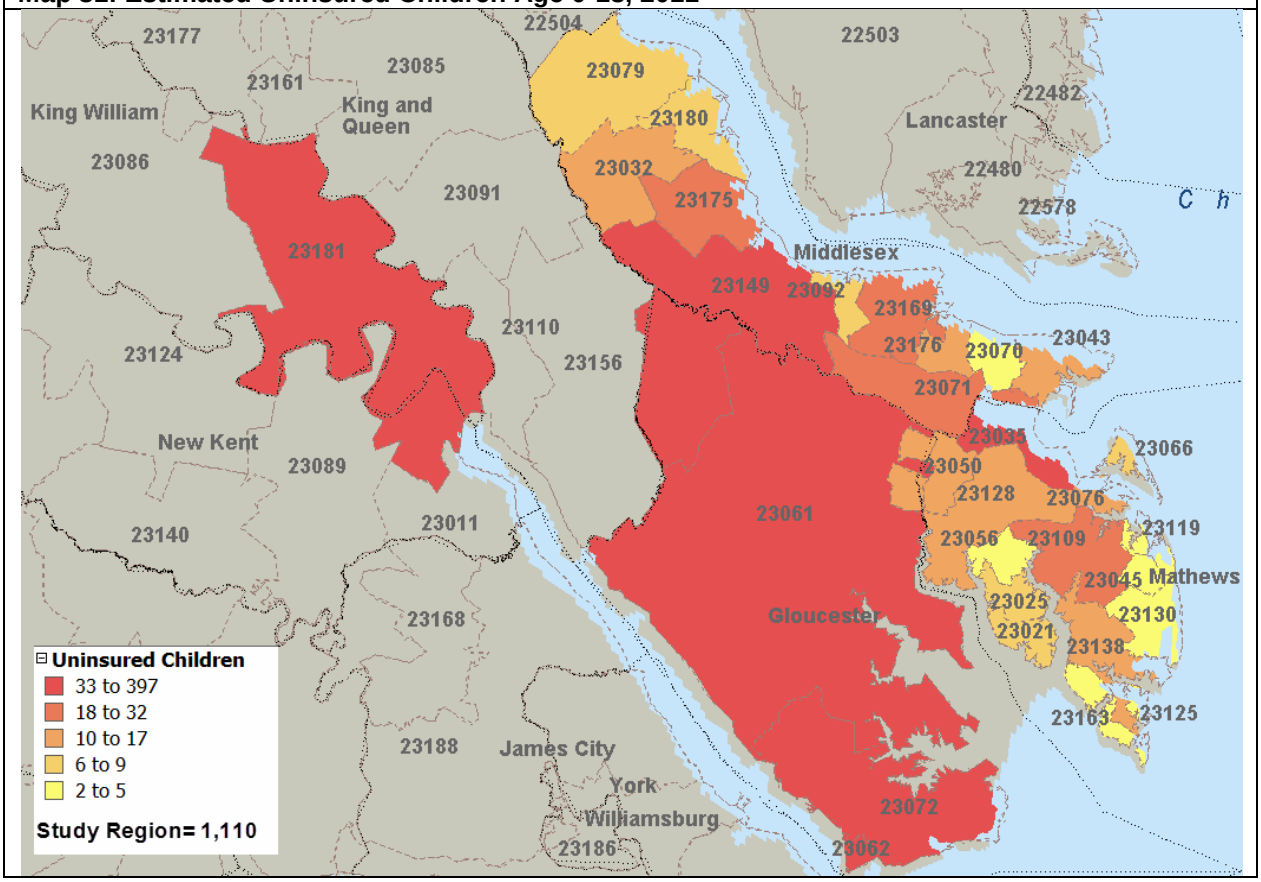
Map 29: Estimated Children Age 10-17 Not Meeting Physical Activity Targets, 2011



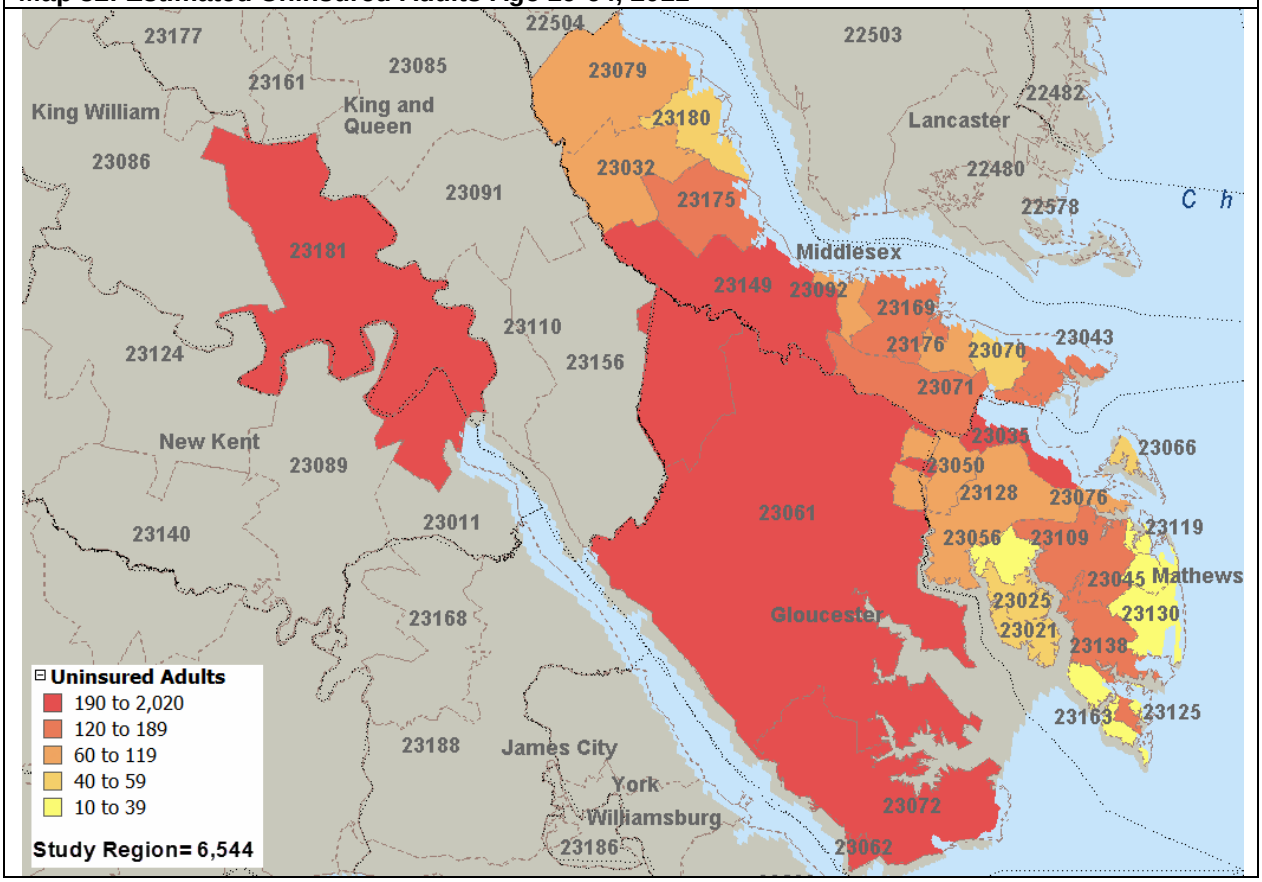
Map 30: Estimated Uninsured Nonelderly Age 0-64, 2011



Map 31: Estimated Uninsured Children Age 0-18, 2011



Map 32: Estimated Uninsured Adults Age 19-64, 2011



APPENDIX B**:** Community Insight Profile-
Additional Ideas and Suggestions for Improving Community Health

Respondents to the *Community Insight Survey* were invited to submit additional ideas and suggestions for improving community health. The open-ended responses are listed below.

Additional Ideas and Suggestions for Improving Community Health	
Response	
1	Develop community partnerships with governmental and non-governmental agencies designed to assist the citizens such as the American Red Cross. Riverside could be a valuable partner with ARC to assist with blood drives, and community volunteers to serve as Disaster Assistant Team (DAT) members. They could also work with the Gloucester Department of Emergency Services in the Medical Reserve Corps to help fill a gap with nurses in shelters.
2	Help develop transition services for those with brain disorders especially mental health concerns. Have services in place to transition mental health crisis patients from ER to community.
3	I am grateful that the hospital makes meeting space available for the Middle Peninsula brain injury support group each month. Support groups, particularly in this area, do a great deal to address the isolation and lack of knowledge of resources for the brain injured community. Support for more outreach to the community at large about the causes and effects of brain injury and the needs of brain injured survivors (including stroke victims) would be very helpful in building understanding and promoting prevention measures, since many brain injuries are very preventable. For example, March is Brain Injury Awareness Month, and public information sessions during the month (or ANY time) would be a very worthwhile activity to support the hospital's community outreach efforts.
4	I think RWRH has always given excellent care. I had a minor surgery there many years ago back when folks did not always speak so highly of RWRH's services; what I found was caring folks that treated me as well if not better than I had received at other area hospitals, and no they did not know I was a RHS employee. I think the services have only improved over the years. The new ICU looks to be state of the art.
5	I'd love to see the installation of a video phone or Skype capable laptop (more portable) in nursing home facilities which may or may not serve deaf people. The service is not hard to get (Google video relay). For deaf and hard of hearing people, the visual communications format is so much more effective, and can even help keep people aging with hearing loss more communication connected and more engaged. That's my fantasy!
6	1. Provide Social Workers/Discharge planners the necessary framework for follow up of those clients leaving the hospital that have been treated and need more support once discharged than transportation home. 2. Also, coordination with VDH for through investigations of CD and timely treating of Rabies, etc.
7	RBHC and RWRH are planning a meeting to discuss services and access.
8	Reduce emergency room visits and 911 calls for preventable health conditions by partnering with home and community based health care services.
9	We should care for each other as we would care for those we love, to enhance our own well-being to improve our own health as well as the health of our patients and communities we serve.

APPENDIX C: Community Health Needs Assessment Data Sources

Section	Source
Part I:Community Insight Profile	
1) Survey Respondents 2) Community Health Concerns 3) Community Service Gaps 4) APPENDIX B: Community Insight Profile-Additional Ideas and Suggestions for Improving Community Health	Community Health Solutions analysis of *Community Insight Survey* responses submitted by community stakeholders.
Part II: Community Indicator Profile	
1) Health Demographic Trend Profile 2) Health Demographic Snapshot	Community Health Solutions analysis of population estimates from Alteryx, Inc. (2011 and 2016). Alteryx, Inc., a commercial vendor of demographic data. Note that demographic estimates may vary from other sources of local demographic indicators.
3) Mortality Profile	Community Health Solutions analysis of Virginia Department of Health birth record data (2010).
4) Maternal and Infant Health Profile	Community Health Solutions analysis of Virginia Department of Health death record data (2010).
5) Preventable Hospitalization Profile 6) Behavioral Health Hospitalization Profile	Community Health Solutions analysis of hospital discharge data from the Virginia Health Information (VHI) dataset (January 1-December 31, 2011) and demographic data from Alteryx, Inc. (2011). Data include discharges for Virginia residents from Virginia community hospitals reporting to Virginia Health Information, Inc. These data do not include discharges from state behavioral health facilities or federal (military) facilities. Data reported are based on the patient's primary diagnosis. *NOTE: Virginia Health Information (VHI) requires the following statement to be included in all reports utilizing its data: VHI has provided non-confidential patient level information used in this report which was compiled in accordance with Virginia law. VHI has no authority to independently verify this data. By accepting this report the requester agrees to assume all risks that may be associated with or arise from the use of inaccurately submitted data. VHI edits data received and is responsible for the accuracy of assembling this information, but does not represent that the subsequent use of this data was appropriate or endorse or support any conclusions or inferences that may be drawn from the use of this data.*
7) Adult Health Risk Factor Profile	Estimates of chronic disease and risk behaviors for adults 18+ are based on Community Health Solutions analysis of: • Virginia Behavioral Risk Factor Surveillance System (BRFSS) (2006) • Demographic data from Alteryx, Inc. (2011) Estimates are used when there are no primary sources of data available at the local level. The statistical model to produce the estimates was developed by Community Health Solutions. Synthetic estimates are for planning purposes only and are not guaranteed for accuracy.
8) Child Health Risk Factor Profile	Estimates of risk behaviors for children age 10-17 are based on Community Health Solutions analysis of: • Market Decisions' Obesity Survey commissioned by Virginia Foundation for Healthy Youth (2010); and • Demographic data from Alteryx, Inc. (2011). Estimates are used when there are no primary sources of data available at the local level. The statistical model to produce the estimates was developed by Community Health Solutions. Synthetic estimates are for planning purposes only and are not guaranteed for accuracy.

9) Uninsured Profile	Estimates of uninsured nonelderly age 0-64 are based on Community Health Solutions analysis of: • *Profile of the Uninsured* report produced for Virginia Health Care Foundation by the Urban Institute (2011); and • Demographic data from Alteryx, Inc. (2011) Estimates are used when there are no primary sources of data available at the local level. The statistical model to produce the estimates was developed by Community Health Solutions. Synthetic estimates are for planning purposes only and are not guaranteed for accuracy.
10) Medically Underserved Profile	Community Health Solutions analysis of U.S. Health Resources and Services Administration data.