

COMMONWEALTH OF VIRGINIA

Virginia Department of Health
Eastern Shore of Virginia
Community Health Assessment Synthesis



Developed by the Virginia Department of Health, June 2017

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Introduction

The following synthesis combines information from resources assessing the health of Virginia's Eastern Shore Health District, a peninsula inhabited by an estimated 45,086 residents of Accomack and Northampton Counties. Four resources were utilized for this report:

- Eastern Shore Healthy Communities' Eastern Shore of Virginia Plan for Well-Being, 2017-2020 (2017)
- Riverside Shore Memorial Hospital's Community Health Needs Assessment and Implementation Plan (2016)
- The Planning Council's Youth Substance Abuse Needs Assessment (2016)
- Eastern Virginia Medical School/Eastern Shore Healthy Communities' Community Needs Assessment: Virginia's Eastern Shore Health District (2015)

The included resources utilized both quantitative and qualitative data. A brief description of each resource is provided below.

Eastern Shore of Virginia Plan for Well-Being (2017)

Eastern Shore Healthy Communities (ESHC) developed this plan by adjusting Virginia's Plan for Well-Being to the population of the Eastern Shore Health District (ESHD) and, thus, drew narrative and goals directly from Virginia's Plan. The ESHC plan is founded upon the notion that the residents of the Eastern Shore of Virginia (often "the Shore" below) can live healthy and prosperous lives by (1) factoring health into policy decisions related to education, employment, housing, transportation, land use, economic development, and public safety; (2) investing in the health, education, and development of the Shore's children; (3) promoting a culture of health through preventive actions; and (4) creating a connected system of health care. Defining itself as a "call to action," the plan highlighted specific goals upon which communities can focus, in order to make measureable health improvement by 2020. To inform these goals, ESHC cited data from the US Census Bureau, VDH, Virginia Department of Social Services, and other sources.

Community Needs Assessment and Implementation Plan (2016)

In 2016, as in previous years, the Riverside Shore Memorial Hospital ("Riverside") conducted a community health needs assessment (CHNA) in order to "see the community as a broader population, and better understand the unique needs, concerns, and priorities of the community it serves." Data collection took place between February 17, 2016, and August 1, 2016, and utilized a four-phase collection process: data collection (quantitative), community input (qualitative), analysis, and prioritization.

Quantitative data originated from the Youth Risk Behavior Surveillance System (YRBSS), US

Census data, Behavioral Risk Factor Surveillance System (BRFSS), hospital discharge data, and Virginia Department of Health (VDH) mortality and birth data. Riverside additionally surveyed faith communities; chambers of commerce representatives; public health experts; county and local government representatives; healthcare organizations; and local businesses, schools, and other community organizations.

The Riverside analysis was focused upon a set of indicators that provided broad insight into community health, and for which there were readily available data sources. Consequently, not every possible indicator of community health could be included. Due to the limitation of resources, the relative importance of the issue, and the capacity of the existing organizations to affect the problem, the following issues were not identified as priorities:

- Chronic Respiratory Conditions
- Stroke
- Aging Services
- Infant Mortality

Furthermore, issues that did not rank as top health indicator problems in the quantitative analysis or were not noted as perceived community health issues in the survey were not included.

Example areas included:

- Neurological Problems
- Arthritis
- Renal Disease
- Orthopedic Problems
- Physical Disabilities
- Environmental Health
- HIV/AIDS
- Sexually Transmitted Diseases
- Drowning/Water Safety
- Violence
- Reproductive Health
- Infant Mortality
- Dental/Oral Care
- Bullying

Youth Substance Abuse Needs Assessment (2016)

To understand how the Eastern Shore's readiness to address issues related to youth (ages 16-24) and substance abuse, The Planning Council conducted interviews and focus groups with representatives of social services, public schools (including both teachers and students), medicine, higher education, the faith community, job corps, health departments, community services, business, law, etc. The assessment was conducted as a Community Readiness Model and was intended to measure the region's attitudes, knowledge, efforts/activities, and resources.

Community Needs Assessment (2015)

Compiled in August 2015 by Patti G. Kiger of the Eastern Virginia Medical School/ESHC, this report included data related to the socioeconomic, nutritional, and maternal-health needs of Eastern Shore residents—predominantly those who qualify for SNAP and WIC. Data sources included the USDA, US Department of Health and Human Services, US Department of Agriculture, US Census Bureau, VDH, Virginia Department of Social Services, and BRFSS.

Demographics

In 2016, the Eastern Shore Health District included an estimated 45,086 residents, comprising 32,947 in Accomack County and 12,139 in Northampton County. When compared to Virginia as a whole, and per estimates produced in 2014, the Eastern Shore Health District tends to be older, more rural, have proportionally more Black/African American residents, and have lower levels of educational attainment among adults. For detailed demographic maps, please see [Appendix A](#).

The total population for the region has been projected to remain relatively stable, which is attributed to growth in the population ages 65+ offsetting declines in younger age groups. Finally, significant growth has been projected for the Asian, Other or Multi-Race, and Hispanic populations. See Tables 1 and 2 for more information.

Table 1. Health Demographic Trend for Eastern Shore Health District, 2010-2019

Indicator	2010 Census	2014 Estimate	2019 Projection	% Change 2010-2019
Total Population	45,553	45,375	45,429	0%
Population Density (per Square Mile)	68.1	67.8	67.9	0%
Total Households	20,899	19,126	19,255	-8%
Population by Age				
Children Ages 0-17	9,387	9,462	9,402	0%
Adults Ages 18-29	5,822	5,758	5,727	-2%
Adults Ages 30-44	7,246	7,107	6,949	-4%
Adults Ages 45-64	13,981	13,643	12,835	-8%
Seniors Ages 65+	9,117	9,405	10,516	15%
Population by Race/Ethnicity				
Asian	266	289	304	14%
Black/African American	13,831	13,736	13,906	1%
White	28,830	28,554	28,131	-2%
Other or Multi-Race	2,626	2,796	3,088	18%
Hispanic Ethnicity	3,724	4,061	4,451	20%

Source. Community Health Solutions analysis of estimates from Alteryx, Inc. as included in the Riverside 2016 CHNA

Table 2. Health Demographic Profile, 2014

Indicator		Accomack County	Northampton County	Eastern Shore Total	Virginia Total
Population Counts (%)					
Total Population		33,296	12,079	45,375	8,282,921
Age	Children Ages 0-17	7,082 (21%)	2,380 (20%)	9,462 (21%)	1,889,338 (23%)
	Adults Ages 18-29	4,257 (13%)	1,501 (12%)	5,758 (13%)	1,417,141 (17%)
	Adults Ages 30-44	5,374 (16%)	1,733 (14%)	7,107 (16%)	1,678,713 (20%)
	Adults Ages 45-64	9,970 (30%)	3,673 (30%)	13,643 (30%)	2,241,450 (27%)
	Seniors Ages 65+	6,613 (20%)	2,792 (23%)	9,405 (21%)	1,056,279 (13%)
Sex	Female	17,058 (51%)	6,298 (52%)	23,356 (51%)	4,214,922 (51%)
	Male	16,238 (49%)	5,781 (48%)	22,019 (49%)	4,067,999 (49%)
Race	Asian	184 (1%)	105 (1%)	289 (1%)	486,905 (6%)
	Black/African American	9,317 (28%)	4,419 (37%)	13,736 (30%)	1,602,827 (19%)
	White	21,672 (65%)	6,882 (57%)	28,554 (63%)	5,616,313 (68%)
	Other or Multi-Race	2,123 (6%)	673 (6%)	2,796 (6%)	576,876 (7%)
Ethnicity	Hispanic Ethnicity	3,080 (9%)	981 (8%)	4,061 (9%)	705,701 (9%)
Income	Low Income Households (with Income <\$25,000)	4,695 (34%)	1,904 (37%)	6,599 (35%)	594,210 (19%)
Education	Population Age 25+ Without a High School Diploma	4,740 (20%)	1,586 (18%)	6,326 (19%)	662,369 (12%)
Population Rates					
Total Population	Population Density	72.6	57.3	67.8	206.1

Note. Population Density: population per square mile.

Source. Community Health Solutions analysis of estimates from Alteryx, Inc. as cited in Riverside 2016 CHNA.

Strategies and Implications

As nearly one out of every five Eastern Shore residents is 65 years or older, and per Virginia's Plan for Well-Being Aim 3, Preventive Actions; Goal 3.5, Residents Have Life-Long Wellness; preventive actions and support systems should result in people living in their own home and community safely, independently, and comfortably regardless of age, income, or ability level. Additional strategies and key community partners are described in Figure 1 below.

Figure 1. Demographic Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Encourage construction of safe, congregate and retirement housing for the aging population • Increase access to internet usage for aging residents • Increase the number of fitness programs that promote senior fitness • Develop a senior falls prevention program • Implement community-wide value-neutral programs to support planning in advance for future healthcare choices 	Academic Partners Adult Daycare Providers Businesses Eastern Shore Area Agency on Aging Eastern Shore Rural Health System, Inc. Faith-based Communities Families Nursing Homes Eastern Shore Public Health Senior Centers Riverside Shore Memorial Hospital & Allied Physicians

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Mortality

Out of 113 Virginia counties and cities, the 2015 County Health Rankings placed Accomack County #110 and Northampton County #93 for overall health outcomes, with premature death rankings similarly—and respectively—at #110 and #93.

In 2013, the collective Eastern Shore region had 627 total deaths. The leading causes of mortality by a large margin were malignant neoplasms (i.e., cancer) and heart disease, followed by chronic lower respiratory diseases, cerebrovascular diseases, and diabetes. Age-adjusted death rates were higher than the statewide rate for all combined deaths, and for eight of the 14 leading causes of death. The 2013 mortality profile (see Table 3) generally mirrors that of the 2010 mortality profile as reported in Riverside's 2012/2013 CHNA, albeit with the order shifted for some conditions. For instance, cancer and heart disease were the two leading causes of death in 2010 and 2013; however, the two were transposed in 2010, with heart disease being the number one cause of death, and cancer number two. See [Appendix B](#) for mortality maps.

Table 3. Mortality Profile, 2013 (Age-Adjusted Rate per 100,000 Population)

Indicator	Accomack County	Northampton County	Eastern Shore	Virginia
Total Deaths By All Causes	431 (910.4)	196 (979.3)	627 (928.6)	62,309 (720.1)
Malignant Neoplasms	118 (241.9)	50 (249.2)	168 (244.7)	14,348 (161.3)
Heart Disease	99 (200.7)	44 (192.4)	143 (198.7)	13,543 (155.9)
Chronic Lower Respiratory Diseases	26 (52.5)	15 (72.2)	41 (58.5)	3,168 (37.2)
Cerebrovascular Diseases	11 (27.7)	13 (58.8)	24 (37.8)	3,278 (38.5)
Diabetes Mellitus	15 (29.1)	6 (24.5)	21 (28.4)	1,618 (18.3)
Unintentional Injury	11 (31.5)	7 (56.7)	18 (37.9)	2,794 (33.0)
Alzheimer's Disease	7 (13.5)	8 (36.0)	15 (20.5)	1,634 (19.6)
Nephritis and Nephrosis	9 (17.5)	4 (15.8)	13 (16.8)	1,547 (18.0)
Septicemia	9 (27.2)	3 (24.7)	12 (26.5)	1,464 (17.7)
Parkinson's Disease	5 (9.7)	3 (13.6)	8 (10.8)	549 (6.7)
Influenza and Pneumonia	6 (14.1)	1 (3.7)	7 (11.3)	1,430 (16.8)
Chronic Liver Disease	4 (10.7)	1 (4.2)	5 (8.9)	836 (8.9)
Suicide	4 (11.7)	1 (14.3)	5 (12.1)	1,047 (12.2)
Primary Hypertension and Renal Disease	1 (2.0)	2 (8.4)	3 (3.6)	629 (7.2)

Source. Community Health Solutions analysis of mortality data from the Virginia Department of Health, as included in the Riverside 2016 CHNA.

Cancer

Cancer consistently has been one of the top two causes of death for residents of the Eastern Shore. Health districts are ranked from favorable (1) to unfavorable (35) based upon cancer incidence, localized stage, and mortality. On average, and spanning the years for which there are data (2007-2011), Eastern Shore ranked approximately 25th for incidence and mortality. Lung cancer and melanoma were particularly problematic in this respect (see Table 4).

Table 4. Eastern Shore Cancer Incidence, Staging, and Mortality

Incidence (2007-2011)					Staging		Mortality (2008-2012)			
	Count	Age-Adjusted Rate per 100,000	95% CI	Rank	Percent Localized	Rank	Count	Age-Adjusted Rate per 100,000	95% CI	Rank
Breast	196	520.2	96.8-131.0	6	59.10%	26	50	26.5	19.2-33.8	29
Colorectal	139	40.9	34.3-48.7	21	34.50%	34	51	14	10.1-17.8	7
Lung	330	94.6	84.5-105.8	35	12.10	35	257	72.9	64.0-81.9	34
Melanoma	85	27.8	21.9-34.9	33	82.40%	5	DSU	DSU	-	-
Prostate	267	161.5	142.5 - 182.7	28	76.40%	28	41	26.7	18.6-34.9	28

Note. DSU: Data statistically unreliable; the number of cases (25 or less) is too small to calculate a reliable result.

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Strategies and Implications

Riverside offers a complete array of cancer services, ranging from diagnostics to treatment, through a program that has been certified by the Commission on Cancer since 2000. The Riverside Shore Cancer Center opened in January 2017 and prides itself on offering the latest radiation therapy technologies. Additionally, Riverside supports and works with community partners, such as the American Cancer Society and Eastern Shore Rural Health, to promote cancer prevention and early diagnosis. The hospital is currently working toward increasing awareness of its services throughout the region.

With tobacco use so high on the Eastern Shore, continued focus on smoking cessation and prevention in the schools is important. Similarly, with much of the area driven by the water, sunscreen utilization needs to be continuously emphasized for skin cancer prevention. Per Virginia's Plan for Well-Being Aim 3, Preventive Actions; Goal 3.4, Cancers Are Prevented or

Diagnosed at the Earliest Stage Possible; the percent of adults ages 50 to 75 years who receive colorectal cancer screenings is also to increase from 54.4% to 66.9% by 2020. Additional strategies and key community partners are listed below in Figure 2.

Figure 2. Cancer Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Increase tobacco prevention and cessation programs • Increase the number of providers, lay health advisors, and volunteers trained in health literacy to provide one-on-one education in medical, community, worksite, and household settings to support people in seeking recommended cancer screenings • Implement evidence-based strategies to reduce structural barriers to cancer screenings • Implement provider assessment and feedback interventions to increase cancer screenings • Raise awareness of Riverside's services 	<p>Community Organizations</p> <p>Employers</p> <p>Families</p> <p>Eastern Shore Rural Health System, Inc.</p> <p>Health Care Providers</p> <p>Health Insurers</p> <p>Riverside Shore Memorial Hospital</p> <p>Lay Health Workers</p> <p>Medical Societies</p> <p>Eastern Shore Public Health</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Chronic Disease

Eastern Shore's residents struggle with obesity and obesity-related conditions, such as hypertension and diabetes. Tobacco use is also prevalent in the region, contributing to avoidable health problems such as chronic respiratory disease.

In 2013, the percentage of Eastern Shore residents who were overweight and obesity was estimated to be 73.4%, or 25th out of 29 unique Virginia scores. This number was significantly greater than the state's 64.0% average adult overweight and obesity rate for the same year. Self-reported adult high blood pressure prevalence (80.8%) was slightly higher than the statewide reference rate (79.6%), but adult stroke prevalence (2.4%) was slightly better than the statewide rate (2.5%). See Tables 5 and 6 below for more information.

Table 5. Adult Health Risk Factor Profile—Estimates (%), 2014

Indicator		Accomack County	Northampton County	Eastern Shore Total
Estimated Adults Ages 18+		26,214	9,699	35,193
Chronic Conditions	High Cholesterol*	9,175 (35%)	3,298 (34%)	12,473 (35%)
	High Blood Pressure*	8,388 (32%)	3,201 (33%)	11,589 (32%)
	Arthritis*	7,078 (27%)	2,522 (26%)	9,600 (27%)
	Diabetes*	2,621 (10%)	1,164 (12%)	3,785 (11%)
General Health Status	Limited in Any Activities Due to Physical, Mental, or Emotional Problems	5,505 (21%)	2,231 (23%)	7,736 (21%)
	Fair or Poor Health Status	4,194 (16%)	1,358 (14%)	5,552 (15%)

Note. *Told by a doctor or other health professional.

Source. Estimates produced by Community Health Solutions using Virginia Behavioral Risk Factor Surveillance System data and local demographic estimates from Alteryx, Inc., as included in the Riverside 2016 CHNA.

Table 6. Adult Overweight/Obesity, High Blood Pressure, High Cholesterol, and Stroke

	Adult Overweight and Obese Prevalence (2013)	Adult High Blood Pressure Prevalence (2011-2013)	Adult High Cholesterol Prevalence (2013)	Adult Stroke Prevalence (2011, 2012-2013)
Virginia	64.0%	79.6%	61.4%	2.5%
Healthiest (Health District)	52.8% (Arlington)	73.1% (Virginia Beach)	45.0% (Pittsylvania/Danville)	1.1% (Fairfax)
Least Healthiest (Health District)	75.7% (Crater)	91.0% (Western Tidewater)	72.9% (Hampton)	5.7% (Crater)
Eastern Shore (Rank/Quartile)	73.4% (<i>n</i> = 169) 25 th of 29 unique scores (lower quartile)	80.8% (<i>n</i> = 158) 10 th of 23 unique scores (median)	Not Measured	2.4% (<i>n</i> = 466) 4 th out of 22 unique scores (upper quartile)

Notes. 1) Overweight and obese is determined by self-reported height and weight calculated to BMI. 2) High blood pressure prevalence is based upon answers to the question “Are you currently taking medicine for your high blood pressure?” 3) High cholesterol is based upon the question “Have you ever been told by a professional that your blood cholesterol was high?” 4) Stroke prevalence based upon the question “Have you ever been told that you have had a stroke?”

Source. Virginia Department of Health, as included in the 2015 Eastern Shore Community Needs Assessment 2017- 2020.

PQIs

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. In 2013, residents of the Eastern Shore Health District had 603 PQI hospital discharges. The leading diagnoses for these discharges were congestive heart failure, chronic obstructive pulmonary disease (COPD) or asthma in older adults, diabetes, dehydration, and bacterial pneumonia. The age-adjusted PQI discharge rates for the region were higher than the statewide rates for PQI discharges overall—particularly for diabetes and dehydration. The leading causes of PQI hospitalization in 2013 (see Table 7) were generally the same as in the 2011 profile as reported in Riverside’s 2012/2013 CHNA.

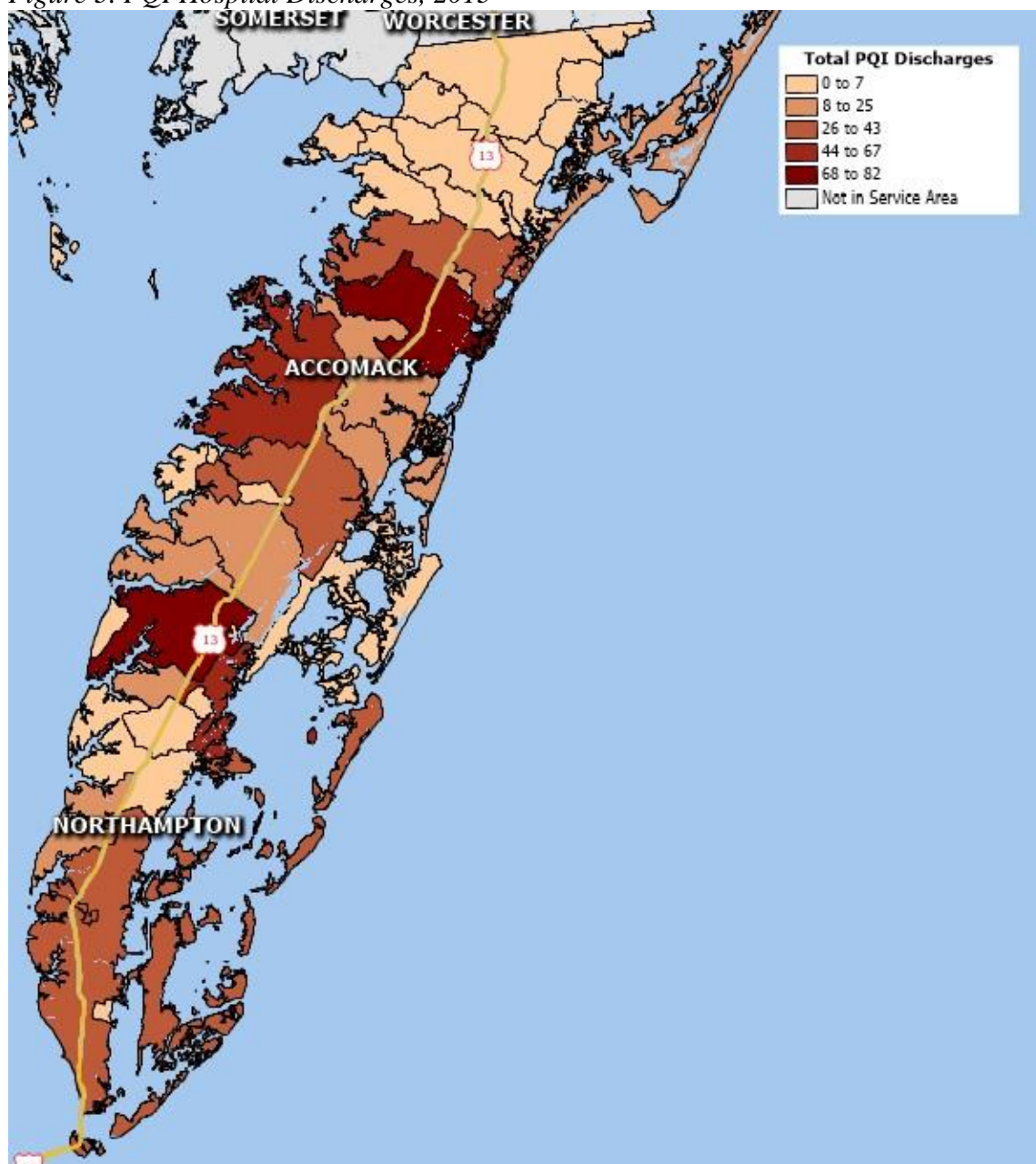
Table 7. PQI Hospital Discharge Profile, 2013 (Age-Adjusted Rate per 100,000 Population)

Indicator	Accomack County	Northampton County	Eastern Shore	Virginia
Total PQI Discharges	352 (847.1)	251 (1,488.0)	603 (1,021.8)	76,860 (897.9)
Congestive Heart Failure	96 (203.4)	53 (247.8)	149 (216.6)	16,026 (221.2)
COPD or Asthma In Older Adults	77 (153.6)	58 (303.8)	135 (195.1)	18,239 (194.3)
Diabetes	59 (186.6)	41 (320.3)	100 (222.9)	11,867 (134.6)
Dehydration	40 (87.0)	32 (165.4)	72 (108.8)	7,743 (93.9)
Bacterial Pneumonia	33 (87.2)	36 (215.3)	69 (122.2)	9,938 (143.9)
Urinary Tract Infection	25	14	39 (63.7)	8,452 (102.5)
Hypertension	11	4	15	2,768 (33.6)
Asthma in Younger Adults	8	6	14	444 (5.4)
Angina	1	6	7	941 (11.4)
Perforated Appendix	6	1	7	1,189 (14.4)

Note. Rates were not calculated where $n < 30$.

Source. Community Health Solutions analysis of hospital discharge data from Virginia Health Information, Inc. and local demographic estimates from Alteryx, Inc., as included in the Riverside 2016 CHNA.

Figure 3. PQI Hospital Discharges, 2013



Source. Riverside 2016 CHNA.

Strategies and Implications

Riverside’s 2016 CHNA cited a great need for diabetic care across the Eastern Shore. At the time of publication, there was no endocrinologist in the region, with relevant care being managed through primary care and some patients with unmanaged diabetes seeking care in the emergency department. Consequently, Riverside Shore Memorial Hospital and Eastern Shore Rural Health have reportedly teamed up to work through a “Taking Aim” grant funded by the Virginia Health Care Foundation in order to focus on the care of patients with diabetes. The program identifies

at-risk patients or those with uncontrolled diabetes and connects them with a “care manager,” who works with patients to help them stay healthy and avoid a visit to the emergency department for a diabetic crisis. Care managers are intended to help their patients with tracking hemoglobin A1c, managing physician office visits, arranging appointments with diabetes educators, etc. The grant funds one year of the program, and the initial goal is to care for 100 patients, with each graduating after one year of healthy management. There is also a plan to identify resources to fund the program after the one-year grant expires.

Additionally, per Virginia’s Plan for Well-Being Aim 3, Preventive Actions; Goal 3.5, Residents Have Life-Long Wellness; by 2020 the average years of disability-free life expectancy for Eastern Shore residents is to increase from 66.56 years (66.47 in Northampton and 66.58 in Accomack) to 67.7 years. Disability-free life expectancy, also known as healthy life expectancy, is life expectancy adjusted for disability as defined by six Census questions related to:

- Hearing difficulty
- Vision difficulty
- Cognitive difficulty
- Ambulatory difficulty
- Self-care difficulty
- Independent living difficulty

Per Aim 4, System of Health Care; Goal 4.1, Eastern Shore Has a Strong Primary Care System Linked to Behavioral Health Care, Oral Health Care, and Community Support Systems; by 2020 the rate of avoidable hospital stays for ambulatory care sensitive conditions is to decrease in Accomack County from 717.14 to 609.57 per 100,000 persons, and in Northampton County from 1,140.32 to 969.27 per 100,000 persons. The rate of avoidable deaths from heart disease, stroke, or hypertensive disease is also to decrease, and the percent of adults who report having one or more days of poor health that kept them from doing their usual activities is to decrease from 26.7% to 24.6%.

Finally, ESHC is working to address the foundational issues impacting healthy lifestyle adoption of the region. Riverside plans to continue to participate with the ESHC group and similar groups in an effort to take a broader, population health focus to promoting better health on the Eastern Shore. Additional strategies and key community partners are described in Figure 4 below.

Figure 4. Chronic Disease Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Create an Accountable Care Community on the Eastern Shore of Virginia that includes groups of health-care providers and community partners who voluntarily coordinate high quality care to ensure patients get the right care at the right time; avoid duplication of services; and prevent medical errors • Improve access to comprehensive primary care in patient-centered medical homes • For patients with complex conditions, integrate primary care with specialty care, behavioral health care, substance abuse services, and oral health care • Expand telemedicine services • Increase care coordination across providers and settings • Develop patient-centered health communications that have a positive impact on health, health care, and health equity • Educate Eastern Shore of Virginia Residents about how to avoid wasteful or unnecessary medical tests, treatments and procedures 	<p>Businesses</p> <p>Community Organizations</p> <p>Faith-Based Communities</p> <p>Eastern Shore Rural Health Services, Inc.</p> <p>Eastern Shore Community Services Board</p> <p>Riverside Shore Memorial Hospital and Allied Providers</p> <p>Eastern Shore Public Health</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Communicable Disease

Strategies and Implications

Per Aim 4, System of Health Care; Goal 4.3, Health Care-Associated Infections are Prevented and Controlled in Virginia; by 2020 Riverside is to meet the state goal for prevention of hospital-onset *Clostridium difficile* infections. Per Aim 3, Preventive Actions; Goal 3.3, Residents Are Protected Against Vaccine-Preventable Diseases; by 2020 the percent of Eastern Shore adults who receive an annual influenza vaccine is to increase from 51.7% to 75.0%. Additionally, the percent of girls ages 13-17 who receive three doses of HPV vaccine is to increase from 17.8% to 80.0%, and the percent of the boys ages 13-17 who receive three doses of HPV vaccine is to increase from 15.7% to 39.7%. Additional strategies and key community partners are described in Figure 5 below.

Figure 5. Communicable Disease Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Use patient registries to identify patients due for vaccination and send them reminders • Evaluate data from the Vaccines for Children program and target outreach to providers who have the opportunity to improve vaccination rates • Evaluate data from the Virginia Immunization Information System to assess immunization coverage and develop targeted interventions to address gaps • Educate residents about the effectiveness of HPV vaccination in preventing HPV-associated cancers • Establish policies to ensure health-care providers receive annual influenza vaccine • Use antibiotics wisely to prevent bacteria from developing resistance to the drugs that are used to treat them • Implement standard precautions in the care of all patients in all health care settings all of the time • Use evidence-based methods to clean medical equipment and the health care environment • Collect, analyze, and use data to engage healthcare providers in quality improvement activities • Increase knowledge and practice of key prevention strategies for the various HAIs across and within healthcare settings 	<p>Families</p> <p>Eastern Shore Rural Health System, Inc.</p> <p>Health-Care Providers</p> <p>Riverside Shore Memorial Hospital</p> <p>Health Insurers</p> <p>Medical Societies</p> <p>Eastern Shore Public Health</p> <p>Businesses</p> <p>Eastern Virginia Medical School</p> <p>Eastern Shore Community College</p> <p>Riverside Shore Memorial Hospital and Allied Physicians</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Health Behavior

Unhealthy lifestyles and resulting medical issues were identified as a key problem for the Eastern Shore Health District. Estimates reported in Riverside's 2016 CHNA indicated that substantial numbers of adults (ages 18+) in the Eastern Shore district have health risks related to nutrition, weight, physical inactivity, tobacco, and alcohol (see Table 8 and [Appendix C](#)). This health risk profile is generally comparable to the 2011 profile reported in Riverside's 2012/2013 CHNA, but available data are not sufficient to support a more detailed comparative analysis.

Table 8. Adult Health Risk Factor Profile Estimates (Percentages), 2014

Indicator		Accomack County	Northampton County	Eastern Shore Total
Estimated Adults Ages 18+		26,214	9,699	35,193
Risk Factors	Not Meeting Guidelines for Fruit and Vegetable Intake	21,758 (83%)	8,438 (87%)	30,196 (84%)
	Overweight or Obese	17,301 (66%)	6,304 (65%)	23,606 (66%)
	Not Meeting Recommendations for Physical Activity in Past 30 Days	12,583 (48%)	4,656 (48%)	17,238 (48%)
	Smoker	3,408 (13%)	1,067 (11%)	4,475 (12%)
	At-Risk for Binge Drinking (males having five or more drinks on one occasion, females having four or more drinks on one occasion)	5,243 (20%)	2,037 (21%)	7,280 (20%)
General Health Status	Limited in Any Activities because of Physical, Mental, or Emotional Problems	5,505 (21%)	2,231 (23%)	7,736 (21%)
	Fair or Poor Health Status	4,194 (16%)	1,358 (14%)	5,552 (15%)

Source. Estimates produced by Community Health Solutions using Virginia Behavioral Risk Factor Surveillance System data and local demographic estimates from Alteryx, Inc., as cited in the Riverside 2016 CHNA.

Behavioral Health

As reported in the Riverside 2016 CHNA, in 2013 the Eastern Shore region had 188 hospital

discharges from community hospitals for behavioral health conditions. These rates were lower than the statewide rates for all diagnoses (where a rate was calculable). The most prevalent diagnoses for discharges were “affective psychoses, schizophrenic disorders, and alcoholic psychoses” (see Table 9). These were also the leading diagnoses in 2011 as reported in Riverside’s 2012/2013 CHNA. Behavioral health services—including mental health services, substance abuse services, and services for individuals with intellectual/developmental disabilities—were also the most commonly mentioned community service gaps in Riverside’s 2016 and 2012/2013 CHNAs.

Table 9. Behavioral Health Hospital Discharge Profile, 2013

Indicator	Accomack County	Northampton County	Study Region	Virginia
Total BH Discharges by All Diagnoses	130	58	188	60,600
BH Discharges by Diagnosis				
Affective Psychoses	39	19	58	26,709
Schizophrenic Disorders	22	11	33	8,136
Alcoholic Psychoses Discharges	17	8	25	4,037
Senility Without Mention of Psychosis	10	8	18	1,688
Alcohol Dependence Syndrome	8	0	8	2,391
Depressive Disorder, Not Elsewhere Classified	5	1	6	3,503
Symptoms Involving Head or Neck	4	2	6	933
Other Nonorganic Psychoses	5	0	5	2,133
Neurotic Disorders	3	2	5	1,207
Adjustment Reaction	4	1	5	2,271
Drug Psychoses	3	2	5	2,121
Drug Dependence	2	0	2	816
Other Organic Psychotic Conditions- Chronic	0	1	1	795
Altered Mental Status	1	0	1	1,000
Non-Dependent Abuse of Drugs	1	0	1	600

Note. Rates are not calculated where n<30.

Source. Community Health Solutions analysis of hospital discharge data from Virginia Health Information and demographic data from Alteryx, Inc., as included in the Riverside 2016 CHNA.

Nutrition

According to the 2014 Virginia Behavioral Risk Factor Surveillance Survey, Virginia's Eastern Shore falls into the median range of health districts for fruits and vegetable consumption (see Table 10). Additionally, the district's fast food restaurant industry has not experienced significant growth from 2007 to 2012: in 2007, Accomack County had 22 fast-food restaurants compared to 21 in 2012. Northampton County similarly gained one restaurant in the same time period, increasing from 11 restaurants in 2007 to 12 in 2012 (see Table 11).

Table 10. Eastern Shore Fruit/Vegetable Consumption, 2013

	Vegetable Servings Per Day	5 Servings Fruits Vegetables Per Day
Virginia	1.9	17.8%
Low	1.6 (Hampton)	10.3% (Lenowisco)
High	2.3 (Loudoun)	24.7% (Richmond City)
Eastern Shore	2	17.1% (<i>n</i> = 155)
Rank/Quartile	5 th of 8 unique scores	17 th of 30 unique scores

Note. On some items, not all 35 health district scores were reported (because the sample number was less than 20 or the 95% confidence interval was larger than 10), and where two or three health districts had the same scores on items, the Eastern Shore ranking is listed among unique scores.

Source. Virginia Department of Health, 2014 Virginia Behavioral Risk Factor Surveillance Survey, as included in the 2015 Eastern Shore Community Needs Assessment.

Table 11. Eastern Shore Fast Food Restaurant Access, 2007-12

County	Fast-Food Restaurants (2007)	Fast-Food Restaurants (2012)	% Change (2007-12)	Fast-Food Restaurants/ 100,000 pop (2007)	Fast-Food Restaurants/ 100,000 pop (2012)	% Change (2007-12)
Accomack	22	21	-4.55	0.57	0.63	10.10
Northampton	11	12	9.09	0.82	0.98	19.69

Note. Fast-food/Limited-service restaurants (defined by North American Industry Classification system (NAICS)

code 722211) include establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to the customer's location. Some establishments in this industry may provide these food services in combination with alcoholic beverage sales.

Source. United States Department of Agriculture, Food Environment Atlas, 2015, as included in the 2015 Eastern Shore Community Needs Assessment.

Routine Checkups and Primary Care

Estimates of adult self-report routine medical check-ups declined from 2011 to 2013, from 89% in the former year to 85% in the latter (see Table 12). Cost was cited as a factor in not seeing a

doctor when needed by an estimated 14.2% of Eastern Shore residents in 2013, compared to 15.3% statewide. The Virginia Department of Social Services reported that, in 2014, approximately 28% of the Eastern Shore population (8,834 in Accomack County and 3,874 in Northampton County) were enrolled in Medicaid. This represents a 10% increase in the region's Medicaid enrollment from 2010 (11,535) to 2014 (12,708). Still, the data indicate that Eastern Shore residents continue to neglect receiving needed, and often life-saving, preventive care in part due to a lack of resources.

Table 12. Routine Check-Ups in the Past Year

	2011				2013			
Health District	Sample Size	Weighted Counts	Weighted Percent	CI	Sample Size	Weighted Counts	Weighted Percent	CI
Eastern Shore	141	34,376	89.0%	84.2 - 93.9	148	43,647	85.0%	77.1-92.9
Virginia	5,086	4,469,498	73.7%	72.0 - 75.4	6,388	4,601,126	72.5%	71.1-73.8

Source. 2011 and 2013 Virginia Behavioral Risk Factor Surveillance Survey (“Have you had a routine checkup within the past year?”), as included in the 2015 Eastern Shore Community Needs Assessment.

➤ Medically Underserved Areas and Medically Underserved Populations

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+. Both Accomack County and Northampton County are designated as Medically Underserved Areas, as reported in Riverside’s 2012/2013 and 2016 CHNAs.

➤ Health Professional Shortage Areas

Health Professional Shortage Areas (HPSAs) are designated by the US Health Resources and Services Administration (HRSA) as having shortages of primary medical care, dental, or mental health providers. HPSAs may refer to an entire geographic area (a county or service area), a demographic group within a geographic area (low income population), or an institution (comprehensive health center, federally qualified health center, or other public facility). HPSAs are designated using several criteria, depending on the type of designation. For example, a HPSA may be designated on the basis that medical professionals in contiguous areas are over-utilized, excessively distant, or inaccessible to the population under consideration. HPSAs are also designated based on population-to-clinician ratios (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). All Federally Qualified Health Centers (FQHC) and Rural Health (RH) Clinics that provide access to care, regardless of patient ability to pay, receive automatic facility HPSA designation. The Eastern Shore has one hospital (Riverside) and five FQHCs within the Eastern Shore Rural Health System, Inc., which is the primary outpatient health services organization on Virginia’s Eastern Shore—and which has HPSA designation. See Table 13 for additional region-specific data.

Table 13. Ratio of Patients to Primary Care Providers, 2012

County	Primary Care Physicians	Dentists	Mental Health Providers
Accomack County	2,223:1	3,683:1	1,326:1
Northampton County	719:1	1,010:1	1,102:1
Virginia	1,344:1	1,611:1	724:1
Top U.S. Performers	1,045:1	1,377:1	1,611:1

Source. 2015 County Health Rankings, as included in the 2015 Eastern Shore Community Needs Assessment.

Uninsured Residents

Per the Riverside 2016 CHNA, in 2014, an estimated 7,467 nonelderly Eastern Shore residents (approximately 979 children and 6,488 adults) were uninsured. The estimated uninsured rates in 2014 were 10% for children ages 0-18, 25% for adults ages 19-64, and 21% for the District as a whole (see Table 14). These rates were similar to those reported by Riverside for 2011. Medicaid enrollment, on the other hand, increased from 2010-2014 (see Table 15).

Table 14. Eastern Shore Uninsured Profile (Estimates), 2014

Indicator	Accomack County	Northampton County	Eastern Shore Total
Estimated Uninsured Counts			
Nonelderly Ages <65	5,544	1,923	7,467
Children Ages 0-18	751	228	979
Children Ages 0-18 (<=138% FPL)	296	105	402
Children Ages 0-18 (<=200% FPL)	409	145	553
Children Ages 0-18 (<=250% FPL)	463	169	631
Children Ages 0-18 (<=400% FPL)	574	204	778
Children Ages 0-18 (138-400% FPL)	277	98	376
Adults Ages 19-64	4,793	1,695	6,488
Adults Ages 19-64 (<=138% FPL)	2,263	783	3,046
Adults Ages 19-64 (<=200% FPL)	3,082	1,096	4,178
Adults Ages 19-64 (<=250% FPL)	3,607	1,281	4,888
Adults Ages 19-64 (<=400% FPL)	4,341	1,526	5,867
Adults Ages 19-64 (138-400% FPL)	2,078	743	2,821
Estimated Uninsured Percent			
Children Ages 0-18	10%	9%	10%
Adults Ages 19-64	25%	25%	25%
Population Ages <65	21%	21%	21%

Note. Federal poverty level (FPL) categories are cumulative.

Source. Estimates produced by Community Health Solutions using U.S. Census Bureau Small Area Health Insurance Estimates (2014) and local demographic estimates from Alteryx, Inc., as included in the Riverside 2016 CHNA.

Table 15. Eastern Shore Medicaid Enrollees, 2010-14

County	2010	2011	2012	2013	2014
Accomack	7,933	8,275	8,453	8,723	8,834
Northampton	3,602	3,685	3,771	3,905	3,874

Source. Virginia Department of Social Services, as included in the 2015 Eastern Shore Community Needs Assessment.

Strategies and Implications

Per Virginia's Plan for Well-Being Aim 3, Preventive Actions; Goal 3.1, Residents Follow a Healthy Diet and Live Actively; by 2020 the percent of Eastern Shore adults who did not participate in any physical activity during the past 30 days is to decrease from 38.4% to 32.6%. Similarly, the percent of adults who are overweight or obese is to decrease from 76.1% to 74.1%. Per Aim 3's Goal 3.2, Virginia Prevents Nicotine Dependency; by 2020 the percent of adults ages 18 years and older who report using tobacco is to decrease from 25.7% to 14.1%.

Per Aim 4, System of Health Care; Goal 4.1, Virginia Has a Strong Primary Care System Linked to Behavioral Health Care, Oral Health Care, and Community Support Systems; by 2020 the percent of adults who have a regular health care provider should increase from 73.3% to 89.9%, and the rate of adult mental health and substance use disorder hospitalizations is to decrease from 203.8 to 193.6 (per 100,000 adults). Additional strategies and key community partners are described in Figure 6 below.

Figure 6. Health Behavior Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Integrate health planning into local and regional comprehensive planning • Adopt community designs that support active living, including concentrated mixed use development and bicycle- and pedestrian-friendly communities • Expand opportunities during and after school for children to get healthy meals and the recommended amount of daily physical activity • Create parks, recreation facilities or open space in all neighborhoods • Increase access to healthy and affordable foods in all neighborhoods • Implement organizational and programmatic nutrition standards and policies • Expand programs and services to eliminate childhood hunger • Help people recognize and make healthy food and beverage choices • Increase the number of evidence-based employee wellness programs • Establish smoke-free policies and social norms • Promote tobacco cessation and support tobacco users in quitting • Prevent initiation of tobacco use • For patients with complex conditions, integrate primary care with specialty care, behavioral health care, substance abuse services, and oral health care • Increase the availability of community behavioral health services • In primary care and other settings increase use of the Screening, Brief Intervention, Referral and Treatment tool (an evidence-based practice used to identify, reduce, and prevent problematic use, abuse, and dependence on alcohol and illicit drugs) 	<p>Academic Partners</p> <p>Businesses</p> <p>Childcare Providers</p> <p>Community Organizations</p> <p>Community Planners</p> <p>Economic Development Agencies</p> <p>Educators</p> <p>Farmers</p> <p>Families</p> <p>Health-Care Providers</p> <p>Health Insurers</p> <p>Eastern Shore Public Health</p> <p>Elected Officials</p> <p>Faith-based Communities</p> <p>School Districts</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

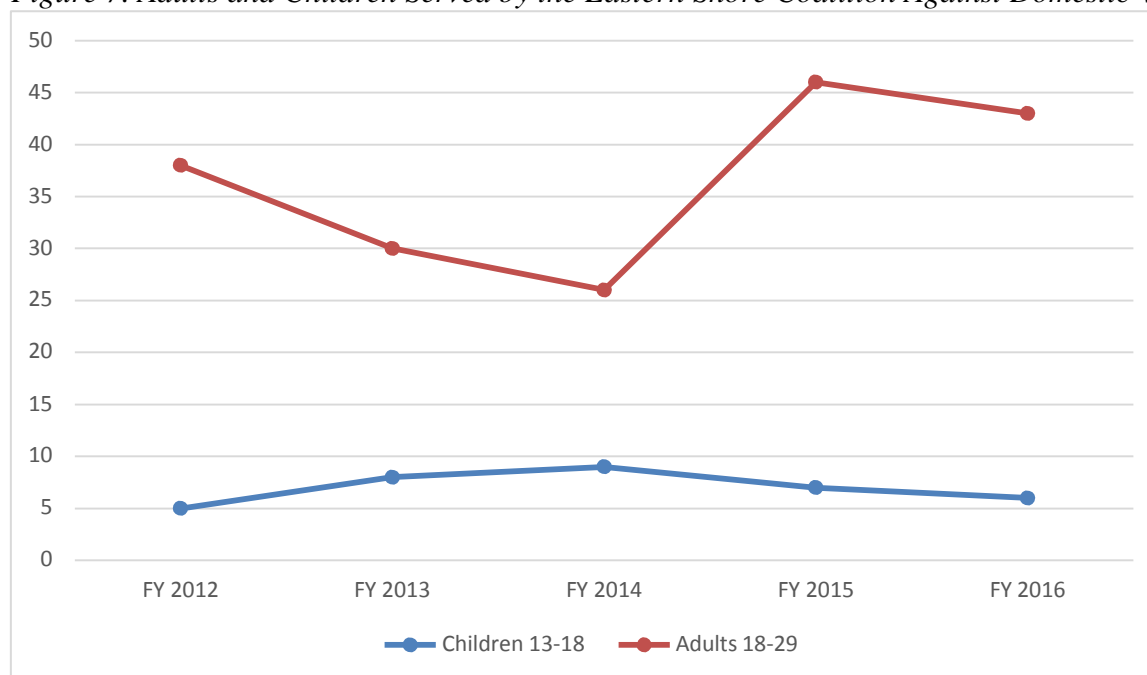
Injury and Violence

Between 2010 and 2015, there were 240 alcohol-related crashes in the Eastern Shore Health District, with nine fatalities. The number of crashes was lower, however, in 2015 (~60) than in 2010 (~90) and 2013 (~90).

In 2013, there were 1,047 suicides in Virginia and five total suicides in the Eastern Shore Health District (with four in Accomack County and one in Northampton). The age-adjusted rate per 100,000 for the study region was 12.1, compared to 12.2 statewide. This was a slight decrease from 2010-2012, when there were 18 total suicides in Eastern Shore at a rate of 13.2. For those same three years, the statewide rate was a comparatively lower 12.5.

The number of adults and children served by the Eastern Shore Coalition Against Domestic Violence was higher in 2015 and 2016 than in 2012-2014 (see Figure 7).

Figure 7. Adults and Children Served by the Eastern Shore Coalition Against Domestic Violence



Note. Data points are approximate reproductions from a table reported in the Youth Substance Abuse Needs Assessment 2016 presentation.

Maternal and Child Health

In 2013, the Eastern Shore had 626 pregnancies, 512 total live births, and five infant deaths. Compared to statewide rates, the health district experienced higher rates of low weight births, births without early prenatal care, non-marital births, teenage pregnancies, and infant mortality. The 2013 percentage (9.4%) of low birth weight for live births on the Eastern Shore exceeded the statewide reference rate (6.6%) by nearly a third, with the estimate of very low birth weight babies (2.1%) similarly exceeding the Virginia reference rate (1.6%).

Northampton County's estimated 2013 infant mortality rate per 1,000 live births (20.7) significantly exceeded the state's reference rate (6.2 per 1,000 births); Accomack County had fewer infant deaths (5.4 per 1,000 live births) than the average for the same year. These patterns were similarly seen in the 2010 profile (as reported in the 2012/2013 Riverside CHNA). Notable differences between the 2010 and 2013 profiles, however, include a significant decline in teen pregnancy and an increase in the five-year infant mortality rate. The former decreased from 39.2 per 1,000 teenage female population in 2010 to 20.8 in 2013. The latter increased from a rate of 7.1 per 1,000 live births in 2010 to 10.7 in 2013. For more information on Eastern Shore births, see Tables 16-20 and Figures 8-9 below.

Table 16. Maternal and Infant Health Profile, 2013

Indicator	Accomack County	Northampton County	Study Region	Virginia
Counts				
Total Pregnancies	448	178	626	126,655
Induced Terminations of Pregnancy	49	22	71	19,724
Natural Fetal Deaths	32	11	43	4,954
Total Live Births	367	145	512	101,977
Low Weight Births (under 2,500 grams / 5 lb. 8 oz.)	36	12	48	8,178
Births Without Early Prenatal Care (No Prenatal Care in First 13 Weeks)	91	22	113	13,435
Non-Marital Births	223	84	307	35,289
Total Teenage (age 10-19) Pregnancies	34	14	48	7,447
Live Births to Teens Age 10-19	23	13	36	5,316
Live Births to Teens Age 18-19	20	11	31	4,073
Live Births to Teens Age 15-17	3	2	5	1,208
Live Births to Teens Age <15	0	0	0	35
Total Infant Deaths	2	3	5	632
Rates				
Live Birth Rate per 1,000 Population	11.1	12.0	11.3	12.3
Low Weight Births % of Total Live Births	10%	8%	9%	8%
Births Without Early Prenatal Care (No Prenatal Care in First 13 Weeks) % of Total Live Births	25%	15%	22%	13%
Non-Marital Births % of Total Live Births	61%	58%	60%	35%

Source. Community Health Solutions analysis of data from the Virginia Department of Health, as included in the Riverside 2016 CHNA.

Table 17. Infant Mortality by Race and Place of Residence, 2010

	Number of Infant Deaths				Rates Per 1,000 Live Births			
	Total	White	Black	Other	Total	White	Black	Other
Virginia	632	335	264	33	6.2	5.2	12.2	2.2
Eastern Shore	5	3	2		9.8	10.0	10.4	
Accomack	2	1	1		5.4	4.7	7.1	
Northampton	3	2	1		20.7	22.7	19.2	

Note. Infant deaths are deaths of children under one year of age, some of whom may have been born in the previous year.

Source. Virginia Department of Health. Division of Health Statistics (2013), as included in the 2015 Eastern Shore Community Needs Assessment.

Table 18. Eastern Shore Low Birth Weight Live Births by Race, 2010

	Number of Infant Deaths				Rates Per 1,000 Live Births			
	Total	White	Black	Other	Total	White	Black	Other
Virginia	8,178	4,286	2,677	1,214	8.0	6.6	12.4	7.9
Eastern Shore	48	22	23	3	9.4	7.3	11.9	16.7

Note. Under 2,500 grams.

Source. Virginia Department of Health. Division of Health Statistics (2013), as included in the 2015 Eastern Shore Community Needs Assessment.

Table 19. Eastern Shore Very Low Birth Weight Live Births by Race, 2010

	Number of Infant Deaths				Rates Per 1,000 Live Births			
	Total	White	Black	Other	Total	White	Black	Other
Virginia	1,586	728	636	222	1.6	1.1	2.9	1.4
Eastern Shore	11	6	4	1	2.1	2.0	2.1	5.6

Note. Under 1,500 grams.

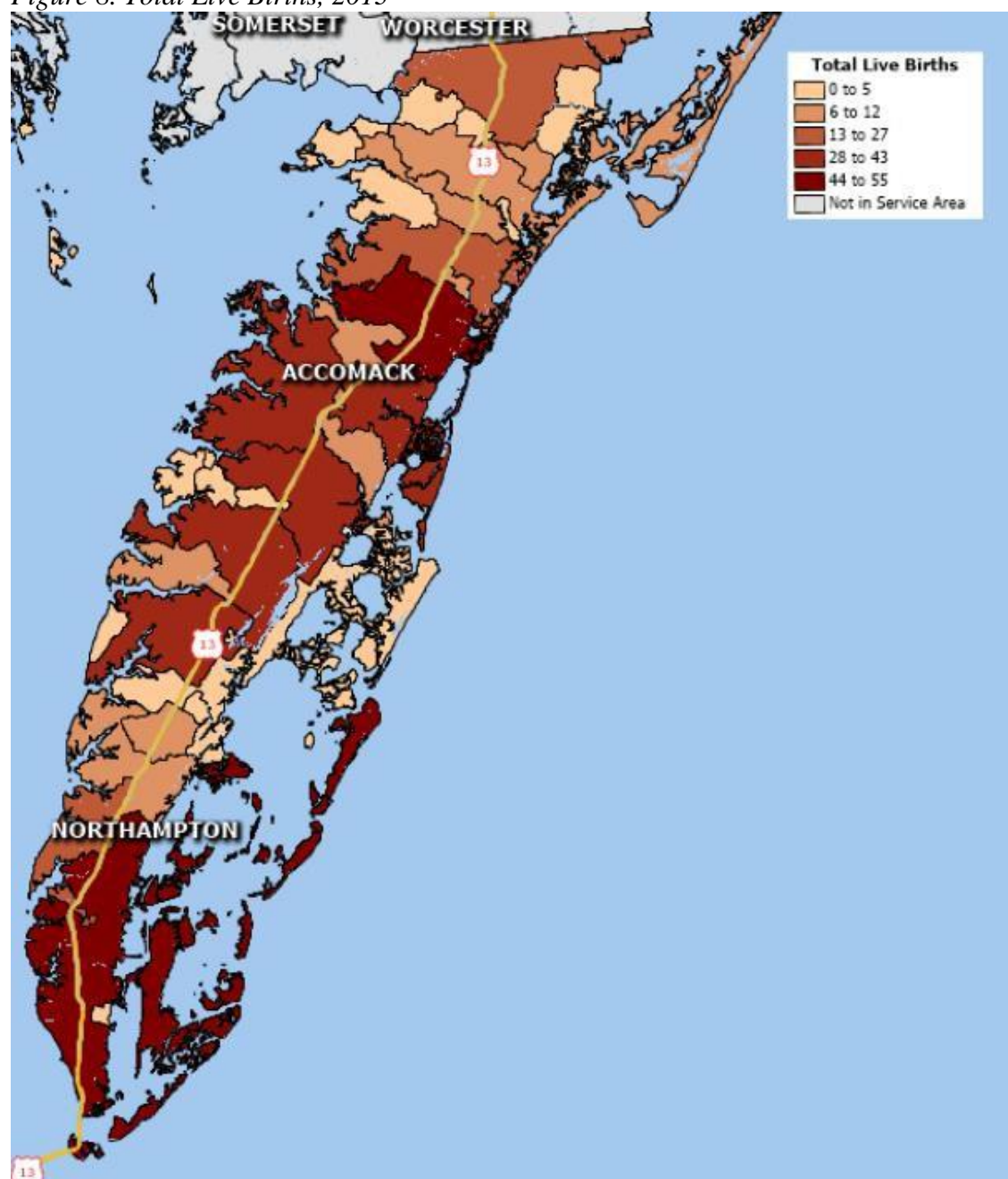
Source. Virginia Department of Health. Division of Health Statistics (2013), as included in the 2015 Eastern Shore Community Needs Assessment.

Table 20. Eastern Shore Total Live Births by Trimester Prenatal Care Began, 2010

County	Trimester Care Began						Percent Beginning Care In			
	Resident Total Births	First 13 Weeks	Second 14 Weeks	Third 13 Weeks	No Care	Care Unknown	First 13 Weeks	Second 14 Weeks	Third 13 Weeks	No Care
Eastern Shore	592	394	120	26	5	47 (8%)	66.6%	20.3%	4.4%	0.8%
Accomack County	433	267	95	21	3	47	61.7%	21.9%	4.8%	0.7%
Northampton County	159	127	25	5	2	--	79.9%	15.7%	3.1%	1.3%
Virginia	102,934	84,268	10,947	3,048	955	3,716	81.9	10.6%	3.0%	0.9%

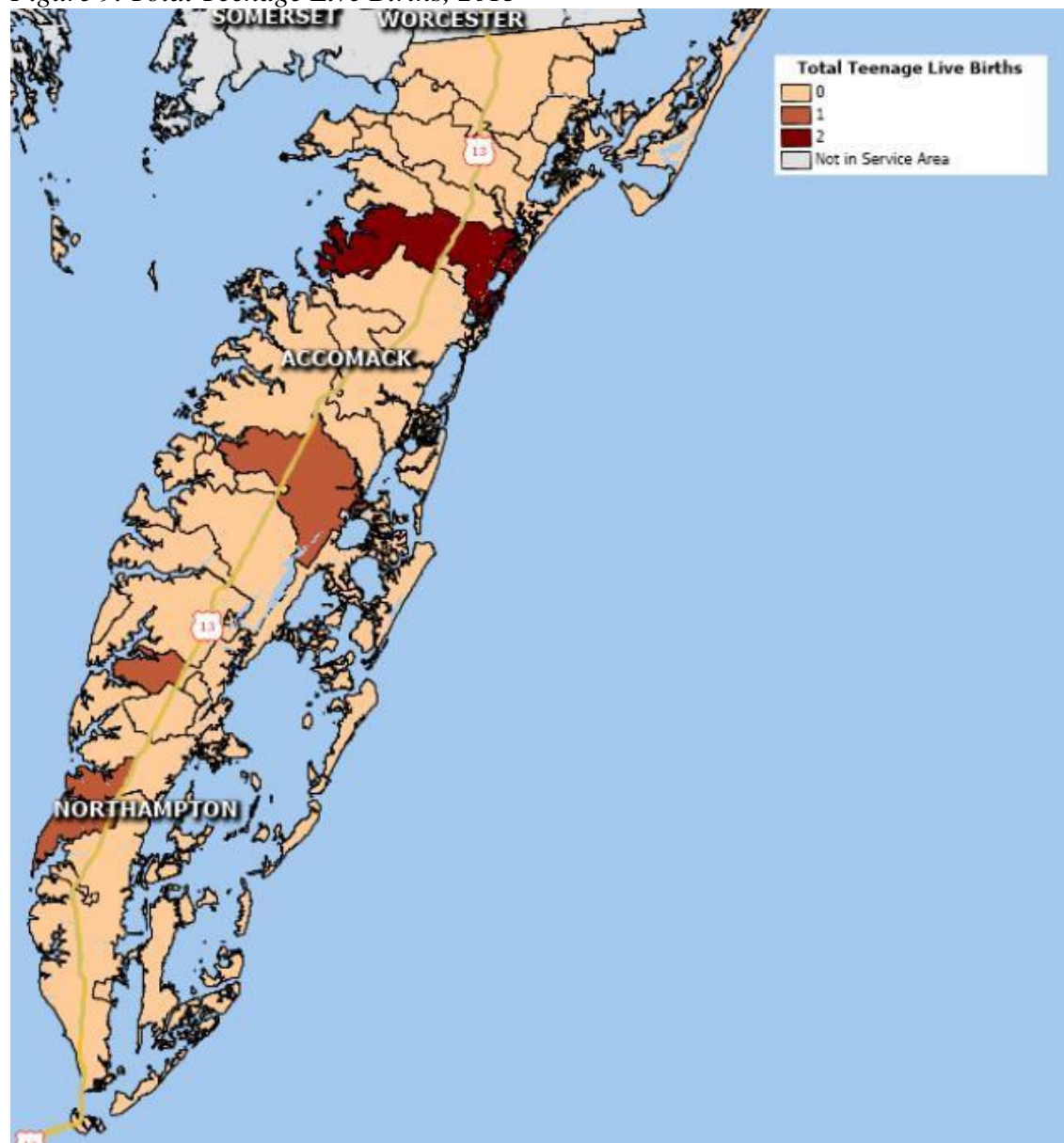
Source. Virginia Department of Health. Division of Health Statistics (2013), as included in the 2015 Eastern Shore Community Needs Assessment.

Figure 8. Total Live Births, 2013



Source. Riverside 2016 CHNA.

Figure 9. Total Teenage Live Births, 2013



Source. Riverside 2016 CHNA.

Women, Infants, and Children (WIC)

In the first four months of 2015, the Eastern Shore Health District served a total of 1,292 WIC clients: including 303 women (195 in Accomack; 108 in Northampton), 330 infants (217 in Accomack; 113 in Northampton), and 659 children (480 in Accomack; 179 in Northampton). See Table 21 for more information on enrollment by classification. These numbers are fewer than in the 2014 calendar year, when VDH recorded that the Eastern Shore Health District enrolled 1,512 clients in the WIC benefits program (see Table 22). It is similarly fewer than in

the 2014 fiscal year (October 2013-September 2014), when 2,706 WIC clients were enrolled: including 776 infants, 1,135 children, 515 pregnant women, 70 breastfeeding mothers, and 210 post-partum women. This decrease may be indicative of a potentially large unserved population if the need has otherwise maintained.

Table 21. Eastern Shore WIC Participation 2015 (January-April)

County/Health District	Women				Infants			Total
	Pregnant	Fully Breast-Feeding	Partially Breast-Feeding	Post-Partum	Fully Breast-Fed	Partially Breast-Fed	Formula-Fed	
Accomack	75	12	18	90	12	22	184	892
Northampton	37	11	8	52	10	11	92	400
Eastern Shore	112	23	26	142	22	33	275	1,292

Source. Virginia Department of Health. Division of Community Nutrition. Participation by Local Agency, as included in the 2015 Eastern Shore Community Needs Assessment.

Table 22. Eastern Shore Potential WIC-Eligible Participants, 2014

County/Health District	Infants			Children			Pregnant		
	Potl	Enroll	Unserved	Potl	Enroll	Unserved	Potl	Enroll	Unserved
Accomack	253	241	5%	965	574	41%	180	122	32%
Northampton	85	124	0%	361	220	39%	61	59	3%
Eastern Shore	337	365	0%	1,326	794	40%	241	181	25%
Virginia	35,660	39,633	0%	127,874	79,658	38%	25,471	17,624	31%
County/Health District	Breastfeeding			Postpartum			Totals		
	Potl	Enroll	Unserved	Potl	Enroll	Unserved	Potl	Enroll	Unserved
Accomack	116	46	60%	76	70	8%	1,589	1,053	34%
Northampton	39	23	41%	25	33	0%	571	459	20%
Eastern Shore	155	69	55%	101	103	0%	2,161	1,512	30%
Virginia	16,382	13,491	18%	10,698	10,472	2%	216,085	160,878	26%

Note. Potl = potential.

Source. Virginia Department of Health, Division of Health Statistics, Based on September 2014 Crossroads Enrollment and as included in the 2015 Eastern Shore Community Needs Assessment.

In the twelve months spanning 2014-2015, an average of 88% of cash-value vouchers/benefits given to Eastern Shore participants were redeemed in the eight WIC-authorized grocery markets throughout Virginia's Eastern Shore as well as in Maryland (see Table 23). This percentage is equal to the statewide percentage for that same time period.

Table 23. Predominant WIC-Authorized Stores Used by WIC Participants (2015)

Store Name	Location
Pocomoke Walmart Supercenter	2132 Old Snow Hill Road, Pocomoke City, MD 21851
Island Foods, LLC	62277 Cleveland Street, Chincoteague, VA 23336
Food Lion	7013 Lankford Highway, Oak Hall, VA 23416
Matthews Market (IGA)	14141 Lankford Highway, Mappsville, VA 23407
Food Lion	25102 Lankford Highway, Onley, VA 23418
Onley Walmart Supercenter	26036 Lankford Highway, Onley, VA 23418
Food Lion	4092 Lankford Highway, Exmore, VA 23360
Food Lion	22485 Lankford Highway, Cape Charles, VA 23310

Source. Virginia Department of Health. Eastern Shore Health District, as included in the 2015 Eastern Shore Community Needs Assessment.

Strategies and Implications

Per Virginia’s Plan for Well-Being Aim 2, Strong Start for Children; Goal 2.1, Residents Plan Their Pregnancies; by 2020 Accomack County’s teen pregnancy rate is to decrease from 19.6% to 17.6%. Northampton County’s teen pregnancy rate is to similarly decrease from 24.3% to 21.9%. Per Goal 2.3, the Racial Disparity on Low Weight Live Birth Rate Is Eliminated, by 2020 the region’s “Black Low Weight Live Birth” rate should equal the “White Low Weight Live Birth” rate. This requires the former to be reduced 73%: from 26 to 15. Additional strategies and key community partners are included in Figure 10 below.

Figure 10. Maternal and Child Health Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Increase access to quality family planning services for all women of child-bearing age • Expand evidence-based programs that promote healthy relationships • Educate women and men about the effectiveness of contraceptive methods and increase access to the most effective methods • Expand access to and use of preconception health services • Eliminate early elective deliveries • Expand outreach to pregnant women and increase the number of group prenatal care classes • Expand home visiting and family support programs • Form neighborhood collaboratives to develop plans addressing the causes of health inequity 	<p>Community Organizations</p> <p>Eastern Shore Rural Health System, Inc.</p> <p>Faith-based Communities</p> <p>Families</p> <p>Health Insurers</p> <p>Health-Care Providers</p> <p>Eastern Shore Public Health</p> <p>Schools</p> <p>Social Services</p> <p>Eastern Shore Community Services Board</p> <p>Educators</p> <p>Elected Officials</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Opioid Overdose

In the Planning Council's 2016 Youth Substance Abuse Needs Assessment, representatives from the Community Services Board and peer recovery groups reported seeing more heroin use and higher demand for their services now than in the past. They noted that there were no specific detox or treatment locations in the Eastern Shore Health District in 2016, despite there being 490 youth receiving substance abuse/mental health services at the Community Services Board from 2015-2016: an increase from 2012-2014.

The number of general prescription opioid and heroin drug cases also increased in the region in years 2013-2015, and there were 36 (predominantly opioid-related) drug overdose deaths from 2012-2016. Finally, the rate of residents per 100k (spanning ages) using services for mental health or substance abuse in 2015 was 89.7, and only 74.3 for the entire state. One of the given reasons that opioids have been such a problem for the region is because it serves as a drug trade route between New England and Florida, so heroin is consequently cheaper and more readily available than in other parts of the state.

Strategies and Implications

Per Virginia's Plan for Well-Being Aim 4, System of Health Care; Goal 4.1, Eastern Shore has a Strong Primary Care System Linked to Behavioral Health Care, Oral Health Care, and Community Support Systems; by 2020 the rate of substance use disorder and adult mental health hospitalizations is to decrease from 203.8 to 193.6 per 100,000 adults.

The Planning Council also cited in its report a need to start more openly communicating the issue of opioid addiction to the community. As one interviewee stated, "Shore life is 20 years behind the times. There is no public communication about these issues. Even if people know about drug use, there is denial." Other indicated plans for improvement were to promote drug-prescribing protocols in health care settings to reduce opioid prescription abuse, and to provide law officers training opportunities related to how to intervene during an overdose (e.g., using naloxone).

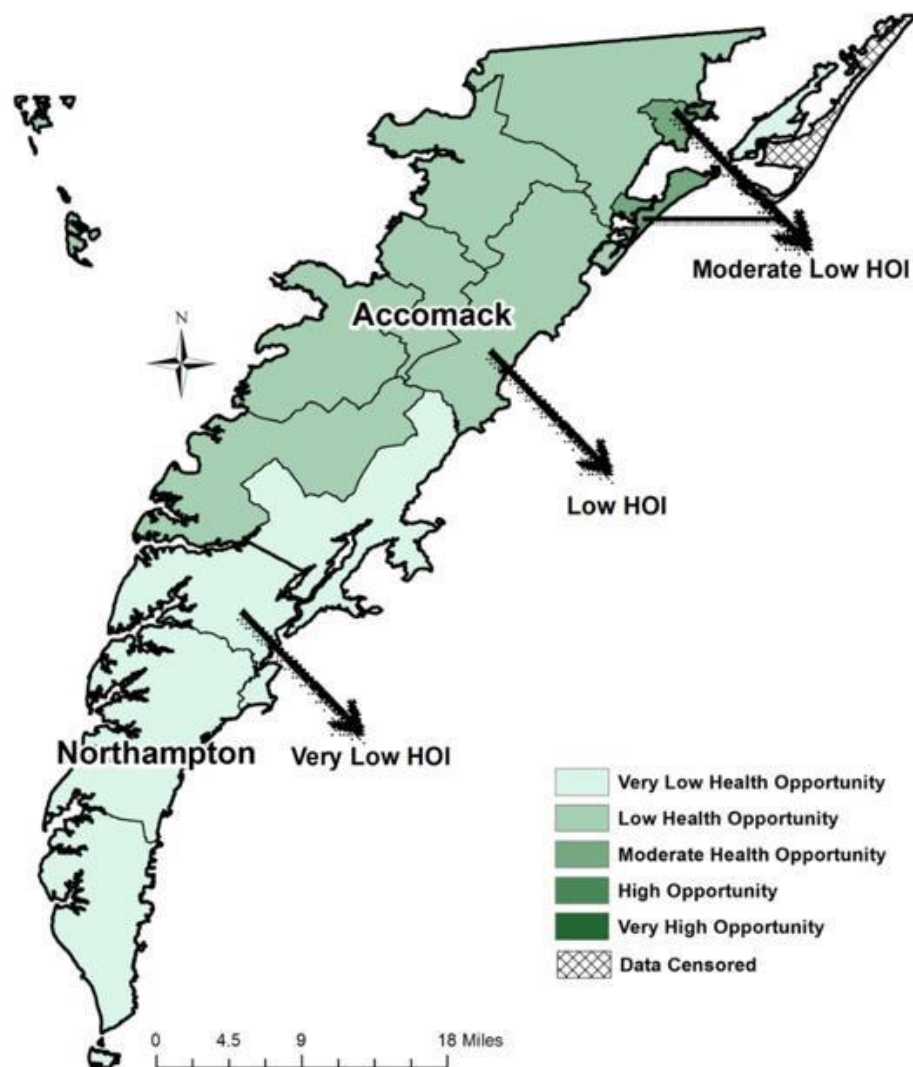
Social Determinants of Health

The Virginia Department of Health has developed a Health Opportunity Index (HOI) to help communities understand the factors that lead to health so they can work to improve health outcomes for everyone. The HOI is a composite measure of the “social determinants of health,” factors that relate to a community’s well-being and the health status of its population. It is comprised of 13 indices in four categories:

- Environment
 - Air quality
 - Population density
 - Population churning
 - Walkability
- Consumer Opportunity Consumer Opportunity
 - Affordability
 - Education
 - Food accessibility
 - Material deprivation
- Economic Opportunity
 - Employment
 - Income inequality
 - Job participation
- Wellness
 - Segregation
 - Access to care

HOI has been calibrated with life expectancy, disability-adjusted life expectancy, and low birth weight measures, and is strongly predictive of key health outcomes. The index also provides communities with a tool to identify areas and populations that are most vulnerable, giving Eastern Shore of Virginia an opportunity to develop strategic, targeted approaches that improve health and well-being. On balance, the region currently has a low HOI (see Figure 11).

Figure 11. Eastern Shore HOI by Census Tract



Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Poverty

In 2014, the U.S. Census Bureau reported that nearly 20% of adults and over 30% of children in the Eastern Shore were living in poverty (see Tables 24 and 25 and related maps in [Appendix A](#)). Per the Planning Council's 2016 report, the child poverty rate has increased to 32%—more than double the statewide rate of 16%.

Table 24. Eastern Shore and Statewide Poverty, 2014 Estimates

Location	Percent of People (All Ages) Living in Poverty	Percent of Children (<18 years) Living in Poverty
Accomack County	19.4%	30.9%
Northampton County	21.5%	33.4%
Virginia	11.8%	15.9%

Source. US Census Bureau, Small Area Income and Poverty Estimates (SAIPE), as included in the 2015 Eastern Shore Community Needs Assessment.

Table 25. Per Capita Income and Percent below Federal Poverty Level (2009-2013)

Location	Per Capita Income	% below FPL
Accomack County	\$22,703	20.5%
Northampton County	\$23,473	24.3%
Virginia	\$33,493	11.3%

Note. Per Capita Income is in 2013 dollars.

Source. U.S. Census Bureau: State and County Quick Facts. Data derived from Economic Census, as included in the 2015 Eastern Shore Community Needs Assessment.

Food Access

Virginia's Eastern Shore is not a food desert as defined by the United States Department of Agriculture, Treasury, and Health and Human Services. Still, in 2014 the region's poverty rates were reflected in its estimated food insecurity rates, with approximately 15.7% of the population being deemed food insecure. This is a slight increase from 2013, when 15.6 % of the full population and 20.8% of Eastern Shore's children were food insecure (see Table 26).

Table 26. Eastern Shore and Statewide Food Insecurity, 2013

Location	Food Insecurity Rate (Full Population)	Population under 18 Years Old	Child Food Insecurity Rate	Estimated Number of Food Insecure Children	Food Insecure Children Likely Income-Eligible for Federal Nutrition Assistance (FNA)	Food Insecure Children Likely NOT Eligible for FNA
Accomack County	14.2%	6,994	20.7%	1,450	79%	21%
Northampton County	17.0%	2,436	21.0%	510	73%	27%
Virginia	11.9%	1,864,331	16.8%	311,410	65%	35%

Notes. Map the Meal Gap's child food insecurity rates are determined using data from the 2001-2011 Current Population Survey on children under 18 years old in food insecure households; data from the 2011 American Community Survey on median family incomes for households with children, child poverty rates, home ownership, and race and ethnic demographics among children; and 2011 data from the Bureau of Labor Statistics on unemployment rates. Numbers reflect percentage of food insecure children living in households with incomes above or below 185% of the federal poverty guideline for 2011. Eligibility for federal child nutrition programs is determined in part by income thresholds which can vary by state.

Source. Gunderson, C., Waxman, E., Englehard, E., Satoh, A., and Chawla, N. (2003). Map the Meal Gap 2013, as included in the 2015 Eastern Shore Community Needs Assessment.

A small population percentage of Eastern Shore residents have low access to grocery stores, yet a larger percentage of households have transportation limits to access (see Tables 27 and 28).

Table 27. Eastern Shore Populations with Low Food Access, 2010

County	Population with low access to stores	Low income and low access to stores	Children with low access to stores	Seniors with low access to stores	Households with no car and low access to stores
Accomack	4.60%	1.69%	0.72%	1.17%	7.71%
Northampton	0.31%	0.09%	0.07%	0.06%	8.20%

Source. United States Department of Agriculture, *Food Access Research Atlas*, as included in the 2015 Eastern Shore Community Needs Assessment.

Table 28. VA Eastern Shore Grocery Store Access, 2007-12

County	Grocery Stores (2007)	Grocery Stores (2012)	Grocery Stores % change (2007 – 12)	Grocery Stores per 1,000 Pop (2007)	Grocery Stores per 1,000 pop (2012)	Grocery Stores per 1,000 pop % change (2007-12)
Accomack	9	10	11.11%	0.23	0.30	28.15%
Northampton	5	3	-40.00%	0.37	0.25	-34.17%

Source. United States Department of Agriculture, *Food Environment Atlas*, as included in the 2015 Eastern Shore Community Needs Assessment.

➤ Supplemental Nutrition Assistance Program (SNAP)

Approximately 20% of the population received Supplemental Nutrition Assistance Program (SNAP) benefits in 2015, consistent with the district's poverty rate. Comparatively, 11.07% of Eastern Shore residents participated in SNAP in 2014, and 8.27% did so in 2009. Including convenience stores, SNAP-authorized stores abound within the region, with 39 in Accomack County and 19 in Northampton. In addition, five farmer's markets were estimated to exist in 2013, with half accepting SNAP benefits. See Tables 29-32 for more information.

Table 29. Eastern Shore Population Receiving SNAP Benefits, 2015

County	Total Households	Total Persons	Amount Issued	Average Per Household
Accomack	2,966	6,315	\$715,450	\$241
Northampton	1,442	2,724	\$298,762	\$207

Source. Virginia Department of Social Services. SNAP Participation Reports (2015), as included in the 2015 Eastern Shore Community Needs Assessment.

Table 30. Eastern Shore SNAP Eligibility and Participation Rates, 2008-10

County	SNAP Eligible (% Pop) (2008)	SNAP Eligible (% Pop) (2010)	SNAP Participants (% Pop) (2009)	SNAP Participants (% Pop) (2014)	SNAP Benefits per Capita (2008)	SNAP Benefits per Capita (2010)	SNAP Benefits per Capita (% Change) (2008-2010)
Accomack	65%	75%	8.27%	11.07%	\$10.60	\$21.82	105.87
Northampton	65%	75%	8.27%	11.04%	\$13.52	\$26.18	93.57

Source. United States Department of Agriculture. Food Environment Atlas, as included in the 2015 Eastern Shore Community Needs Assessment.

Table 31. Eastern Shore SNAP-Authorized Food Store Access, 2008-2012

County	SNAP-Authorized Stores (2008)	SNAP-Authorized Stores (2012)	SNAP-Authorized Stores % Change (2008-2012)	SNAP-Authorized Stores/1,000 Pop (2012)	SNAP-Authorized Stores/1,000 Pop (2012)	SNAP-Authorized Stores/1,000 Pop % Change (2008-12)
Accomack	35.33	39.75	12.5%	0.92	1.19	29.55%
Northampton	12.5	18.0	44.0%	0.93	1.47	58.50%

Source. United States Department of Agriculture. *Food Environment Atlas*, as included in the 2015 Eastern Shore Community Needs Assessment.

Table 32. Eastern Shore Farmers' Markets

County	Farmers' Markets Accept SNAP (2013)	Farmers' Markets Accept SNAP (%) (2013)	Farmers' Markets That Accept WIC (2013)	Farmers' Markets That Accept WIC (%) (2013)	Farmers' Markets That Accept WIC Cash (2013)	Farmers' Markets That Accept WIC Cash (%) (2013)
Accomack	1	50%	0	0	0	0%
Northampton	1	33%	1	33.33%	1	33.33%

Source. United States Department of Agriculture. Economic Research Service. Food Access Research Atlas, as included in the 2015 Eastern Shore Community Needs Assessment.

Strategies and Implications

Per Virginia's Plan for Well-Being Aim 1, Healthy, Connected Communities; Goal 1.1, Families Maintain Economic Stability; by 2020 the percent of cost-burdened Eastern Shore households (for whom more than 30% of monthly income is spent on housing costs) should decrease by from 28.9% to 26.0%. The specific percentage of Accomack County cost-burdened households is to reduce from 25% to 23.1%, with a respective decrease for Northampton County from 31.9% to 29.5%.

Per Aim 3, Preventive Actions; Goal 3.1, Residents Follow a Healthy Diet and Live Actively; by 2020 the percent of residents who are food insecure for some part of the year is to decrease from 15.7% to 13.2%. The Eastern Shore Consumer Opportunity Index (COI) score, a factor of HOI, is also to increase from 58 to 59.6 by 2020. Accomack County's specific COI is to increase from 60 to 61, and Northampton County's from 56 to 57. The Eastern Shore Economic Opportunity Index (EOI) score is similarly to increase from 125 to 128, with Accomack's from 108 to 112, and Northampton's from 133 to 138.

As education provides increased opportunity for employment—in turn improving access to stable housing, healthy food, transportation, and health care—strategic investments in the physical/social infrastructure and educational resources are important for sustained economic stability. Consequently, by 2020 the percent of Eastern Shore

high school graduation rate is to increase from 50.5% to 55%. Please see additional education-related strategies and key community partners related in Figure 12 below.

Figure 12. Social Determinants of Health Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Provide alternative pathways to graduation and post-secondary training for disconnected youth and those with special needs • Develop and use early warning systems to prevent failure and help at-risk students • Develop school policies to assess and address physical, social, and environmental health barriers that impede learning • Expand training and work-linked learning opportunities for youth • Support opportunities for mid-career retraining • Build affordable housing, and rehabilitate existing affordable housing to accommodate low-income families 	<p>Community Organizations</p> <p>Community Planners</p> <p>Economic Development Agencies</p> <p>Educators</p> <p>Elected Officials</p> <p>Employers</p> <p>Families</p> <p>Justice System</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

Youth Health

Table 33 below includes estimates indicating that substantial numbers of youth in the Eastern Shore Health District have health risks related to nutrition, weight, alcohol, mental health, tobacco, and physical activity. This profile, reported in the Riverside 2016 CHNA, generally reflects the same health risk patterns found by the hospital in 2011.

Table 33. Youth Health Risk Factor Profile Estimates, 2014

Indicator	Accomack County	Northampton County	Eastern Shore Total
Total Estimated High School Youth Age 14-19	2,175	735	2,910
Not Meeting Guidelines for Fruit and Vegetable Intake	2,001 (92%)	676 (92%)	2,677 (92%)
Overweight or Obese	630 (29%)	216 (29%)	846 (29%)
Not Meeting Recommendations for Physical Activity in the Past Week	1,222 (56%)	413 (56%)	1,635 (56%)
Used Tobacco in the Past 30 Days	404 (19%)	134 (15%)	538 (18%)
Had At Least One Drink of Alcohol At Least One Day in the Past 30 Days	589 (27%)	196 (27%)	785 (27%)
Felt Sad or Hopeless (Almost Every Day for Two or More Weeks in a Row So That They Stopped Doing Some Usual Activities)	542 (25%)	180 (24%)	180 (25%)

Source. Estimates produced by Community Health Solutions using Virginia Youth Risk Behavioral Surveillance System data and local demographic estimates from Alteryx, Inc., as included in the Riverside 2016 CHNA.

The 2016 Planning Council Report similarly addressed threats to the health of Eastern Shore's youth. When asked how concerned community participants were regarding substance misuse among residents ages 16-24, they provided a rating of 7.3/10. They cited as reason a high concern a lack of communication in the homes, schools, and community, as well as a very low level of understanding of substances' consequences and risks. During focus groups, all Planning Council respondents stated that they encountered someone ages 16-24 misusing substances. All types of substances were being misused, with respondents implicating boredom (only 44% of Eastern Shore youth were said to have access to exercise/recreation opportunities, compared to 81% for the state), escapism, over-prescribing, and a lack of monitoring of prescriptions in medicine cabinets at home as reason for the prevalence. One respondent additionally noted, "It's easy not to get caught. This is a rural are with lots of places to hide," implying that it's possible that misuse is even worse than indicated.

Finally, 495 Eastern Shore students (6.4%) identified as homeless in 2014-2015, compared to 458 (8.8%) for Petersburg and 487 (1.8%) for Norfolk (per Virginia Project HOPE). These children were said to be four times more likely to have delayed development and twice as likely to have poor health: including higher instances of asthma, ear infections, stomach problems, speech problems, depression, anxiety, and withdrawal. See Table 34 for more about the socioeconomic and

educational status of Eastern Shore youth.

Table 34. Youth Poverty and Dropout Rates

	Eastern Shore	Virginia
Child Poverty Rate	32%	16%
Free/Reduced-Price Lunches	70%	42%
Dropout Rate	7.0%	5.3%

Source. US Census Bureau, American Community Survey, as included in the Youth Substance Abuse Needs Assessment 2016 presentation.

Strategies and Implications

Per Aim 1 Healthy, Connected Communities; Goal 1.1, Families Maintain Economic Stability; by 2020 the percent of Eastern Shore high school graduates enrolled in an institute of higher education within 16 months after graduation is to increase in Accomack County from 45% to 47.6 %, and in Northampton County from 56 % to 59.2 %.

Per Aim 2, Strong Start for Children; Goal 2.2, Children Are Prepared to Succeed in Kindergarten; by 2020 the percent of Eastern Shore children who do not meet the PALS K benchmarks in the fall of kindergarten and who require literacy interventions is to decrease in Accomack County from 13.4% to 12.9%, and in Northampton County from 11.40% to 11.0%. Within the same Aim, by 2020 the percent of third graders who pass the Standards of Learning third grade reading assessment is to increase in Accomack from 63% to 73%, and in Northampton from 60.3% to 70.3%.

Planning Council respondents recommended that Eastern Shore youth be offered more afterschool activities in order to stay out of trouble. They further called for more community outreach and general communication with youth about health risks, including messages sent via the media. Finally, community service boards and law enforcement were said to need more resources and funding in order to continue leading efforts to address substance use. Additional strategies and key community partners are described in Figure 13 below.

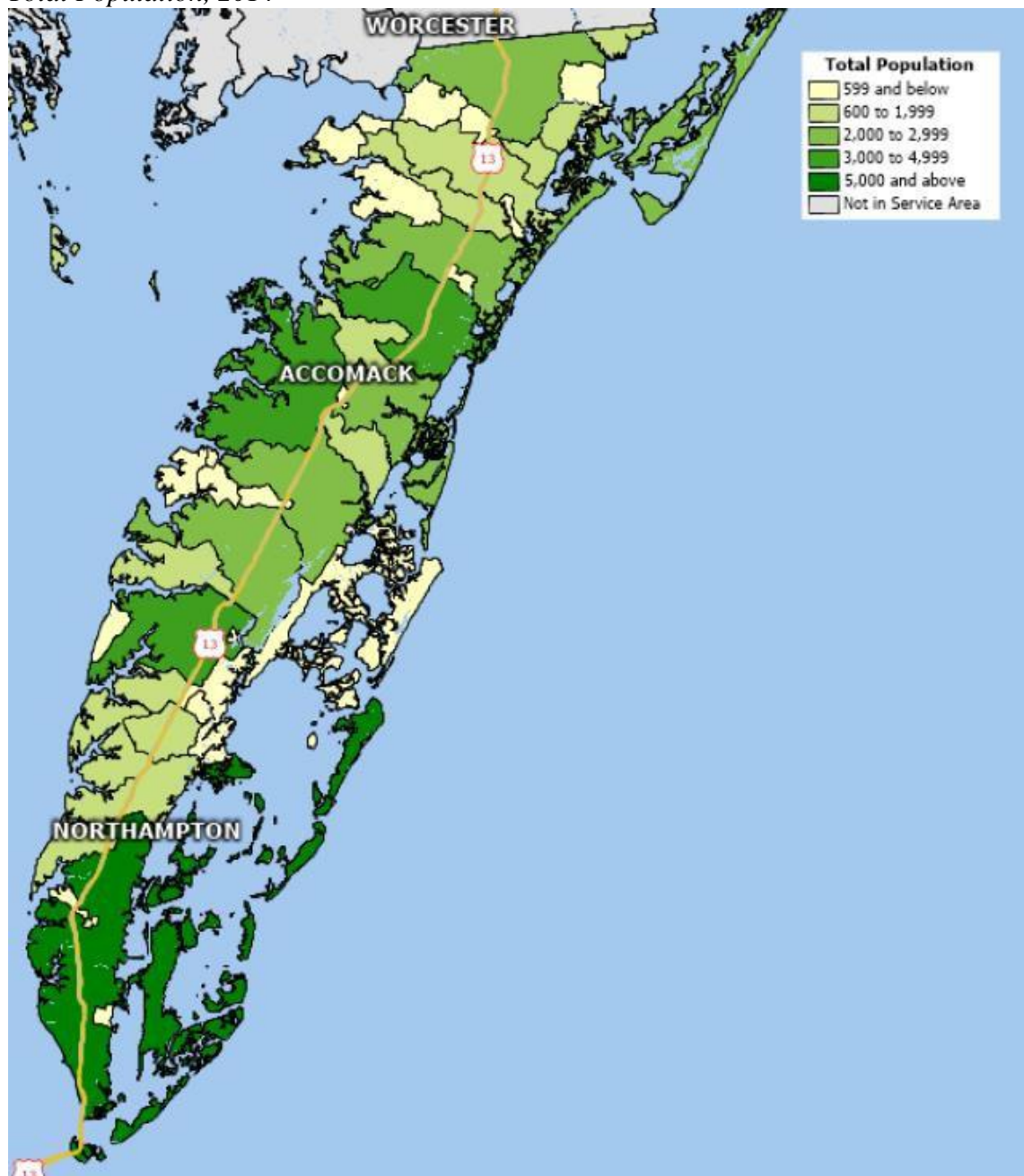
Figure 13. Youth Strategies and Key Community Partners

Strategies	Key Community Partners
<ul style="list-style-type: none"> • Increase developmental screening for childhood milestones and delays • Increase enrollment of three- to five-year-old children in early childhood education programs that include quality educational components that address literacy, numeracy, cognitive development, socio-emotional development, and motor skills • Increase the number of providers and educators who screen for adverse childhood events (ACEs) and are trained in using a trauma-informed approach to care • Expand programs that help families affected by ACEs, toxic stress, domestic violence, mental illness, and substance abuse. Create safe, stable, and nurturing environments • Expand programs that teach positive parenting and help parents fully engage with their children in productive ways • Increase opportunities for fathers to be engaged in programs and services for their children • Continue to assess ways to best communicate, including phones, social media, libraries, etc. • Advocate to school boards and educators to further assess and work with youth 	<p>Businesses</p> <p>Childcare Providers</p> <p>Community Organizations</p> <p>Educators</p> <p>Families</p> <p>Health-Care Providers</p> <p>Public Health</p> <p>Social Services</p>

Source. Eastern Shore of Virginia Plan for Well-Being 2017-2020.

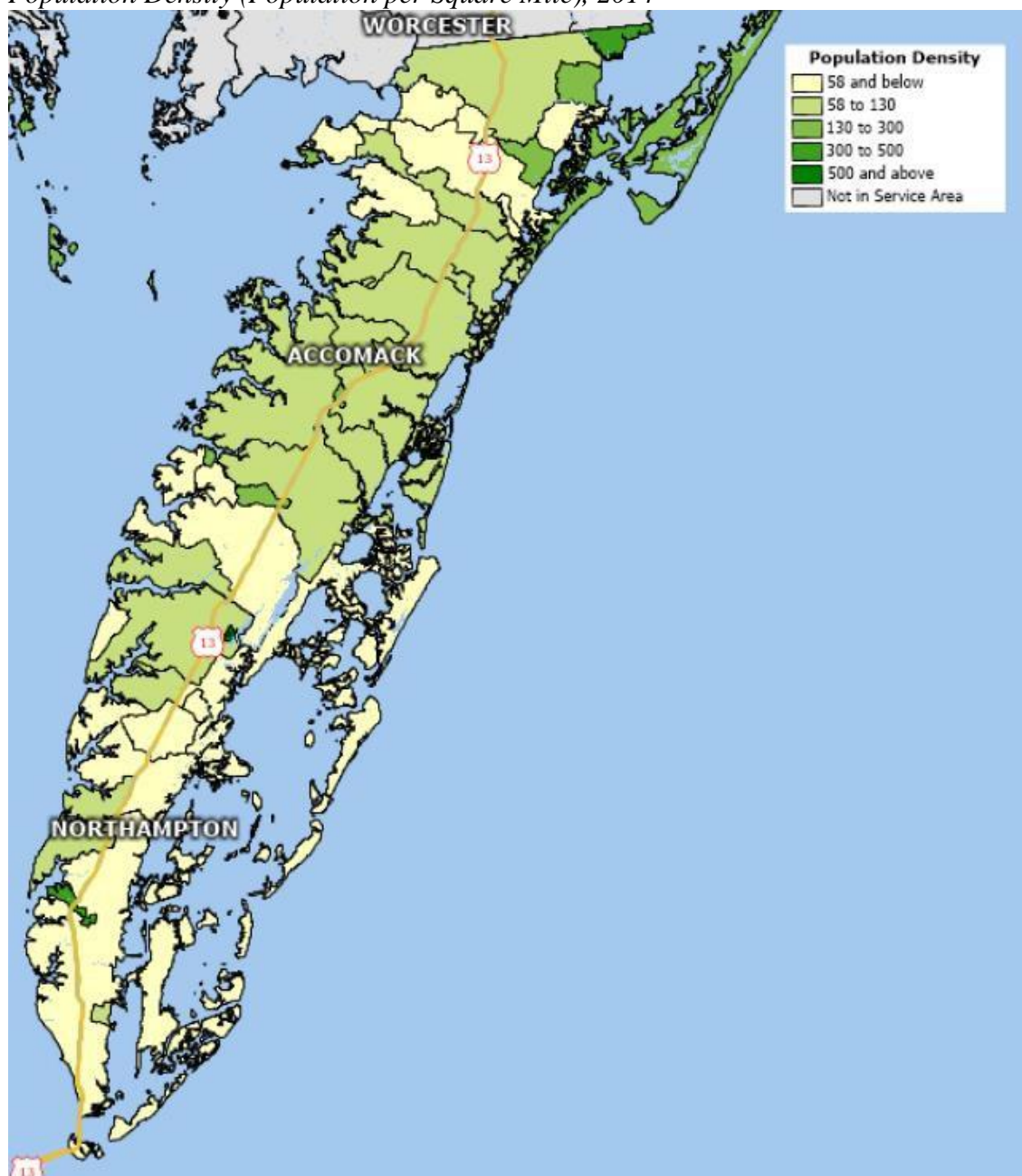
Appendix A: Demographic Maps

Total Population, 2014



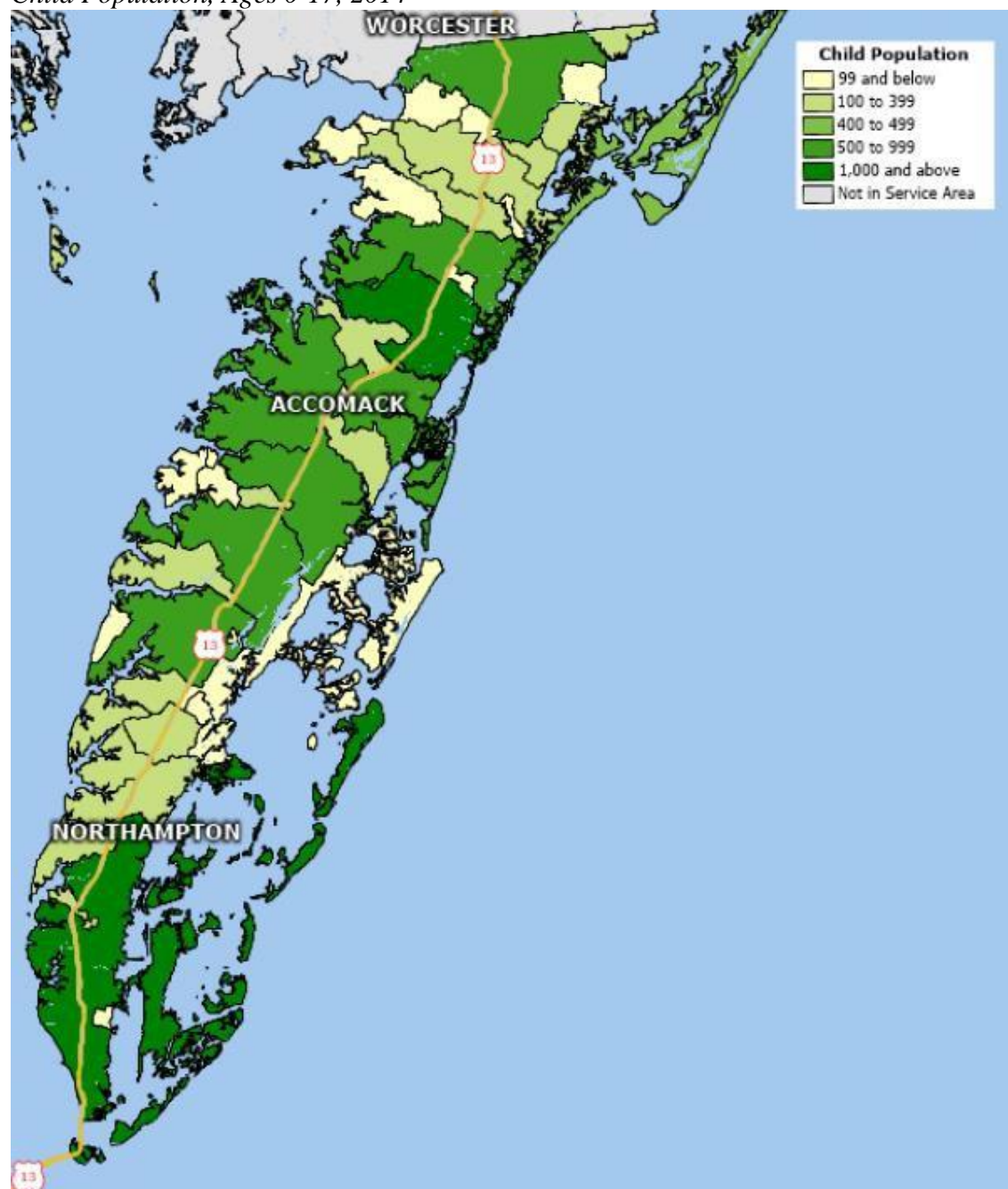
Source. Riverside 2016 CHNA.

Population Density (Population per Square Mile), 2014



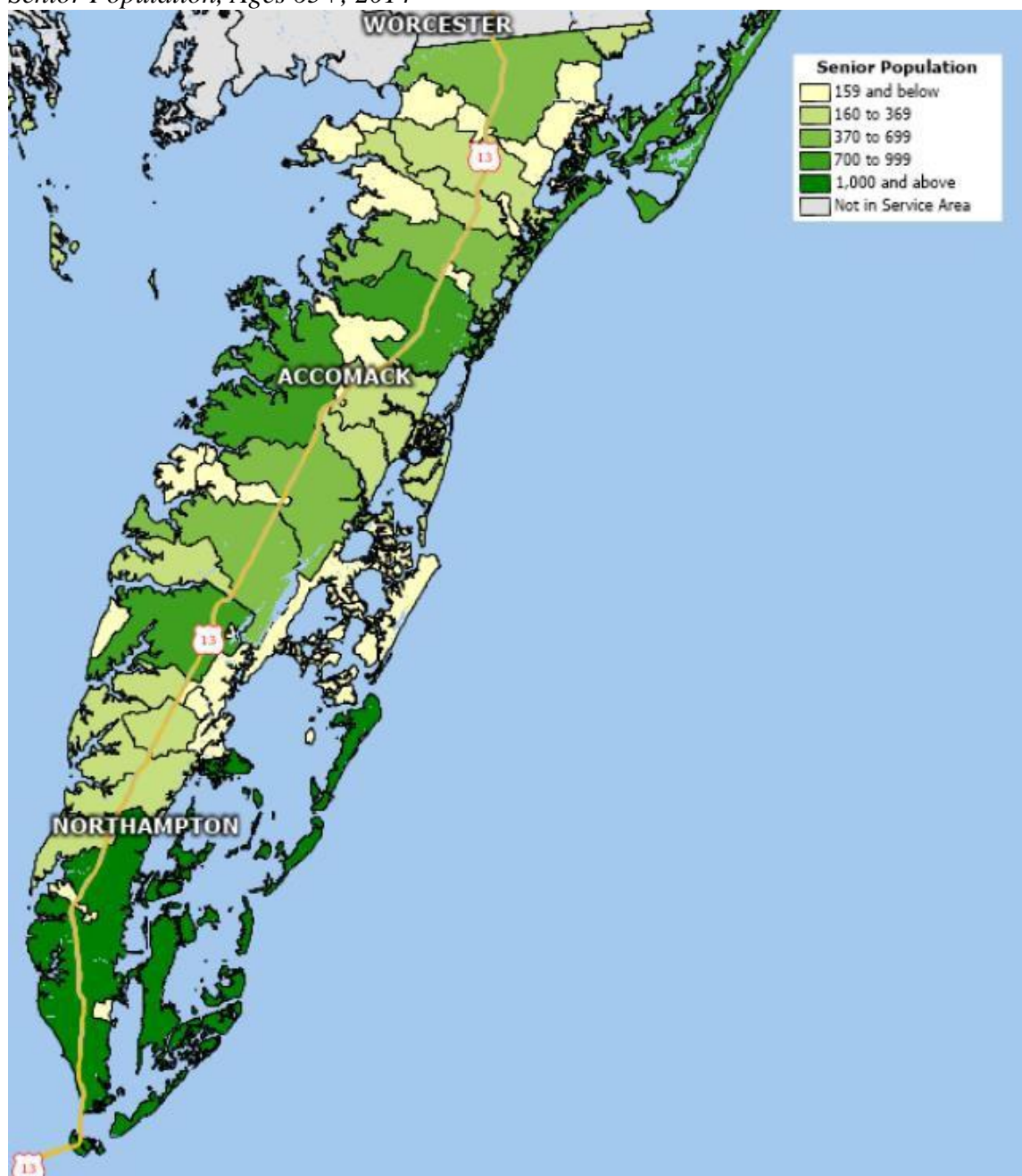
Source. Riverside 2016 CHNA.

Child Population, Ages 0-17, 2014

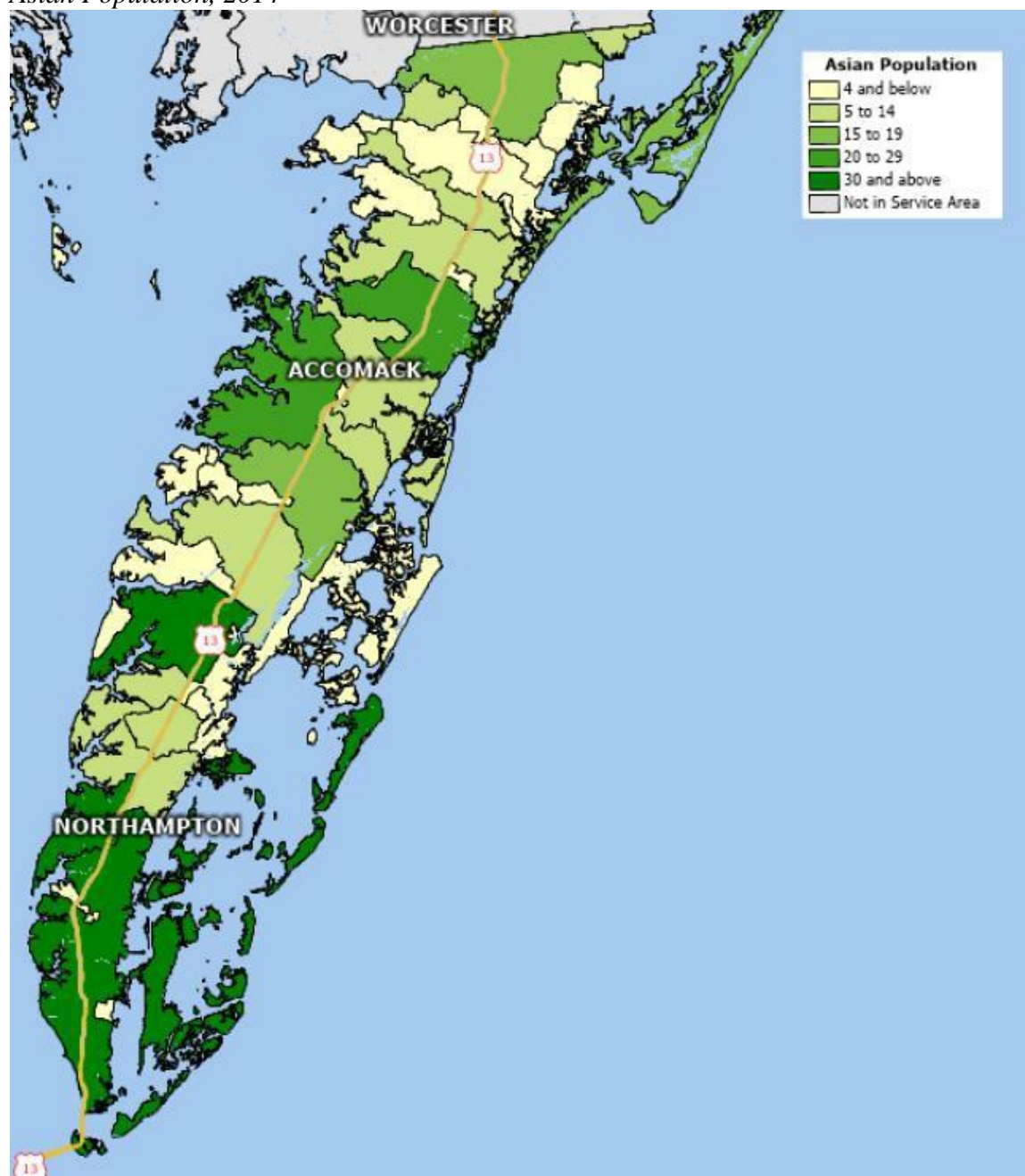


Source. Riverside 2016 CHNA.

Senior Population, Ages 65+, 2014

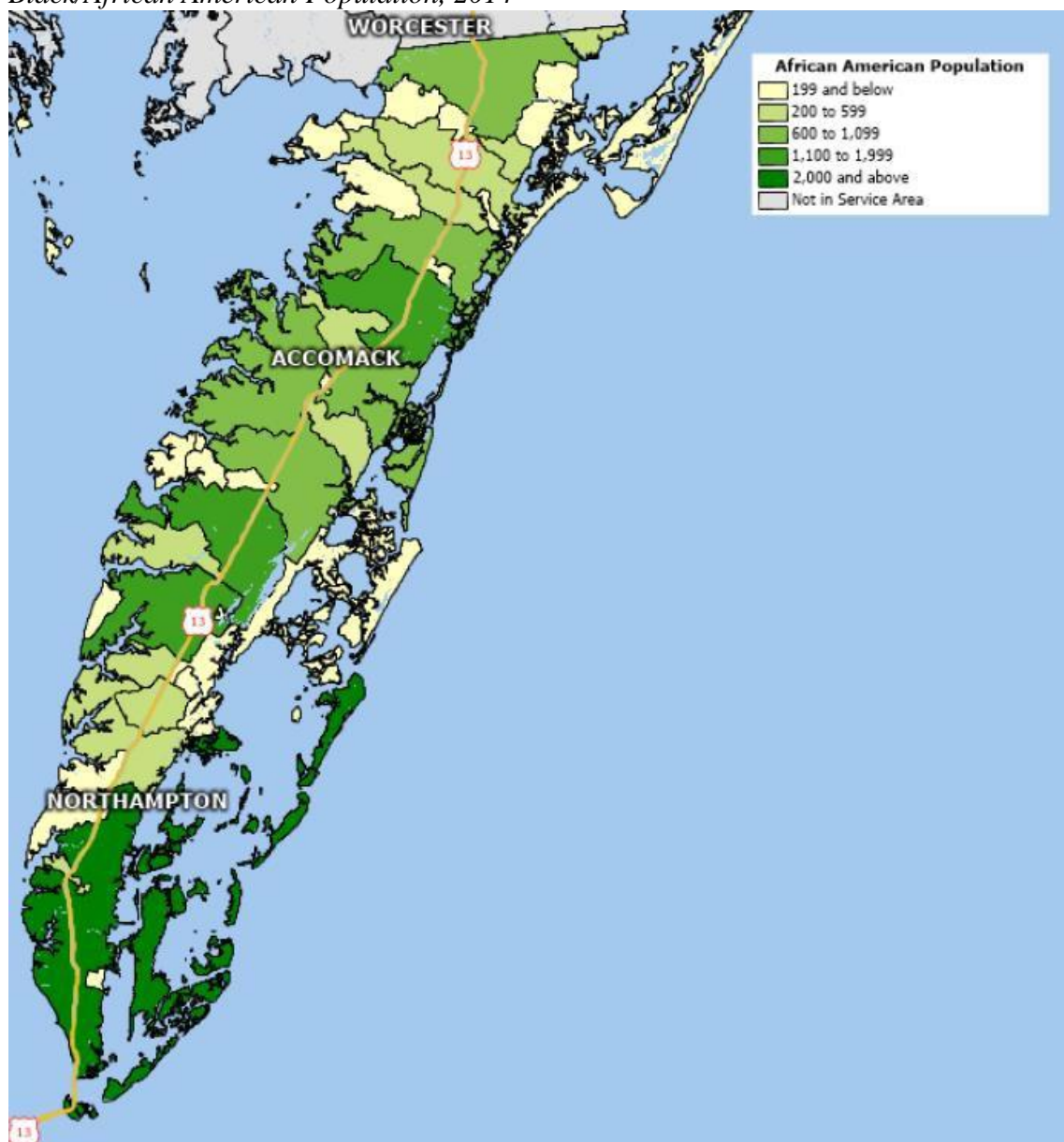


Source. Riverside 2016 CHNA.

Asian Population, 2014

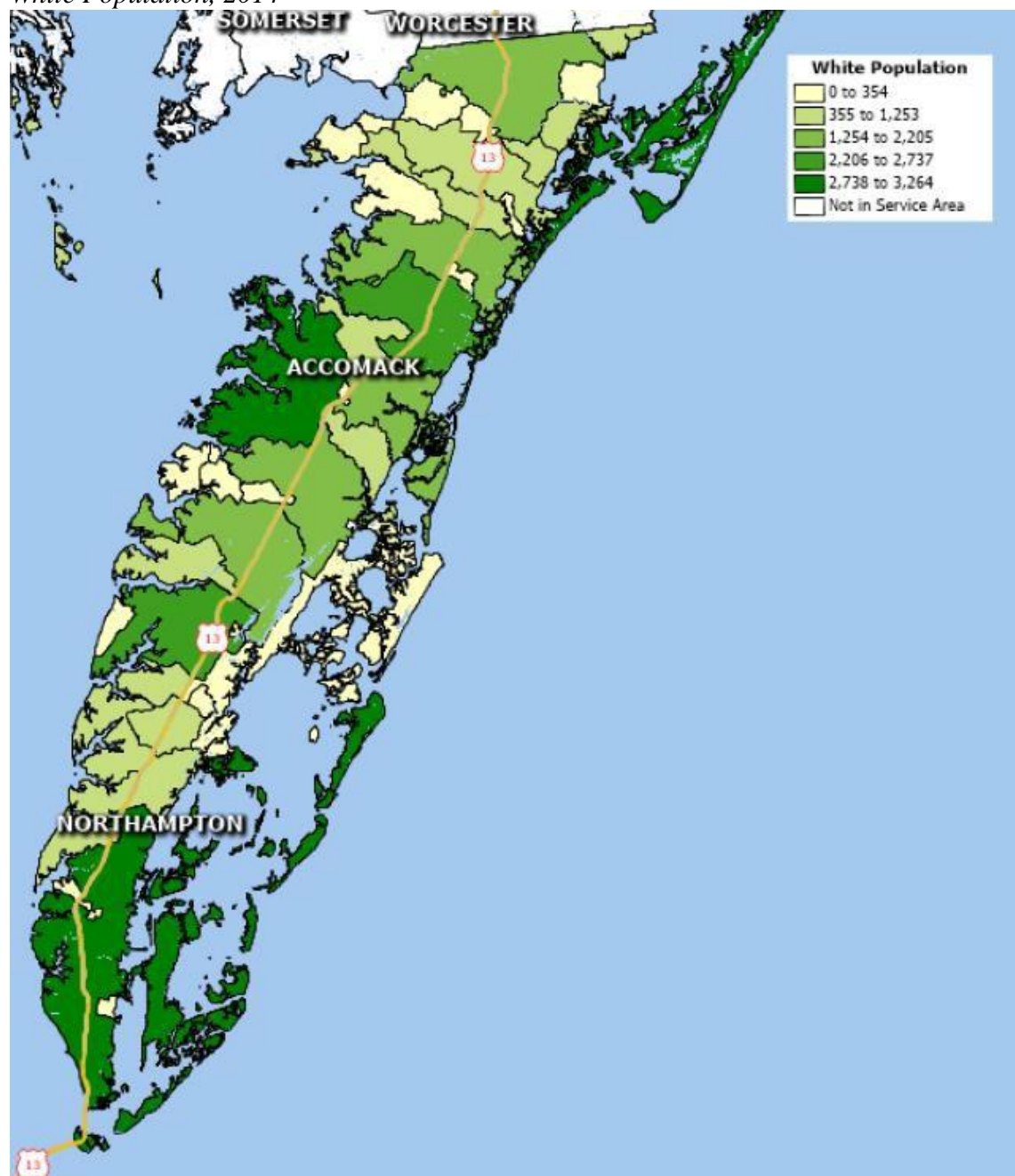
Source. Riverside 2016 CHNA.

Black/African American Population, 2014



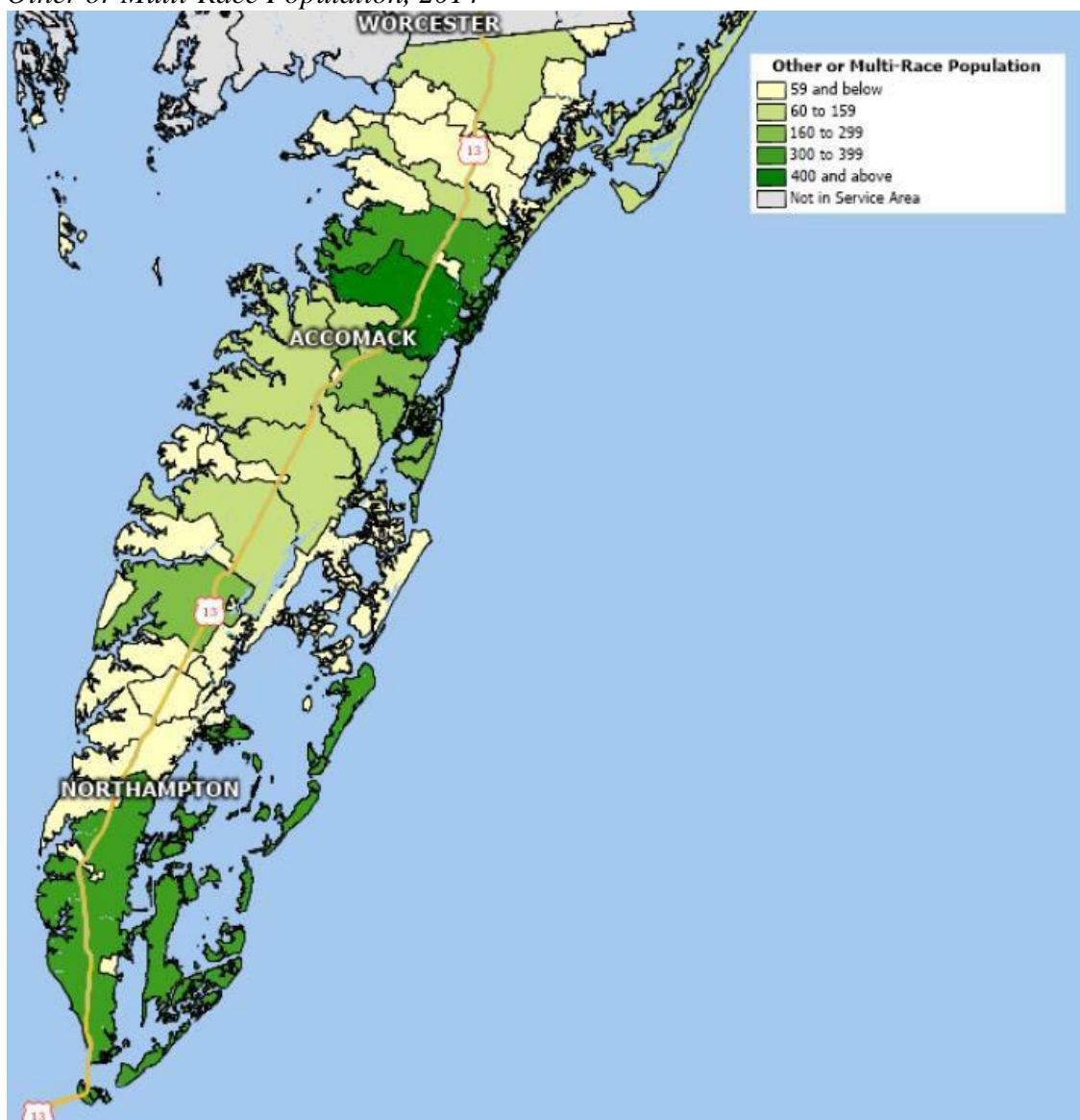
Source. Riverside 2016 CHNA.

White Population, 2014



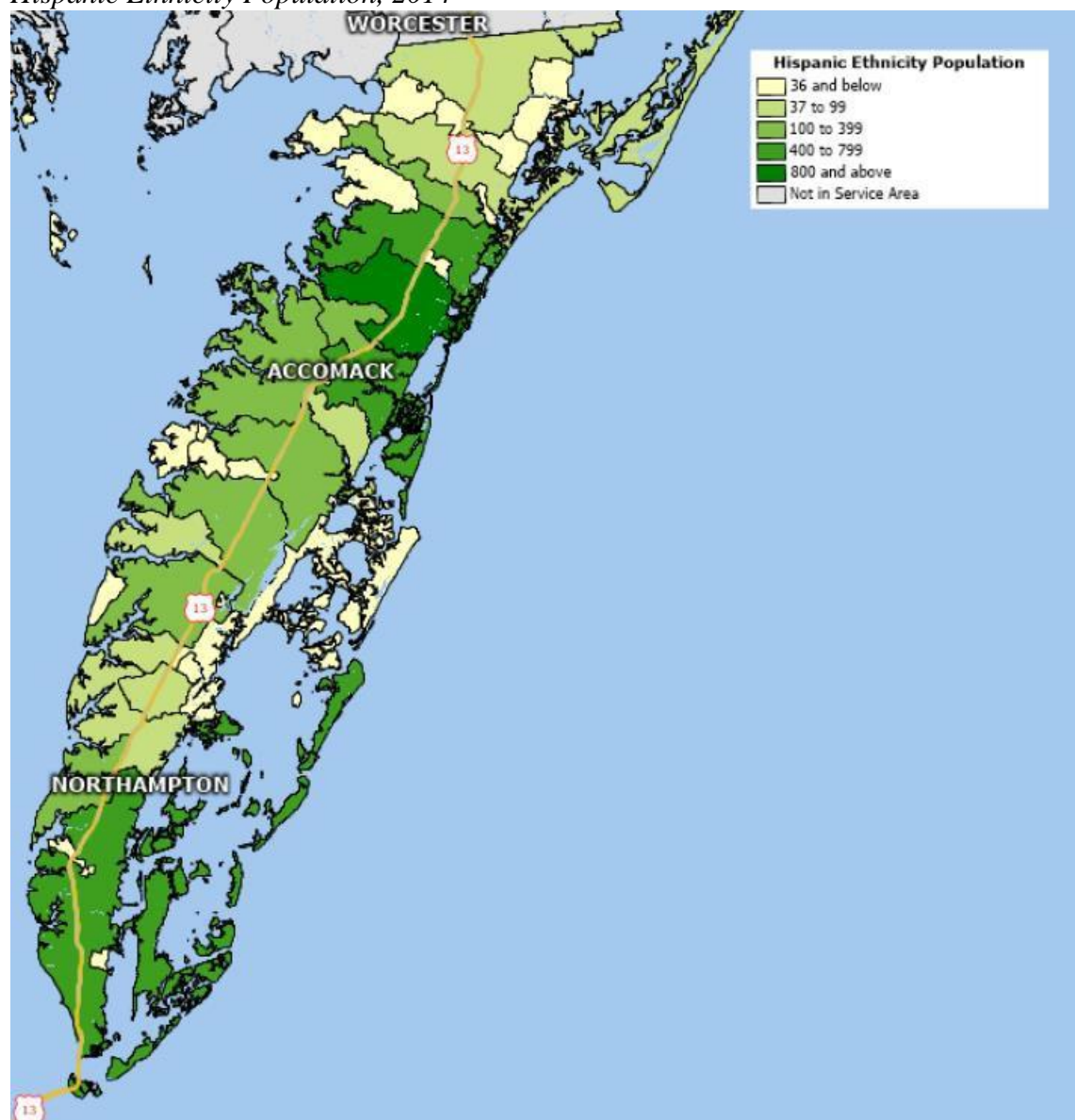
Source. Riverside 2016 CHNA.

Other or Multi-Race Population, 2014



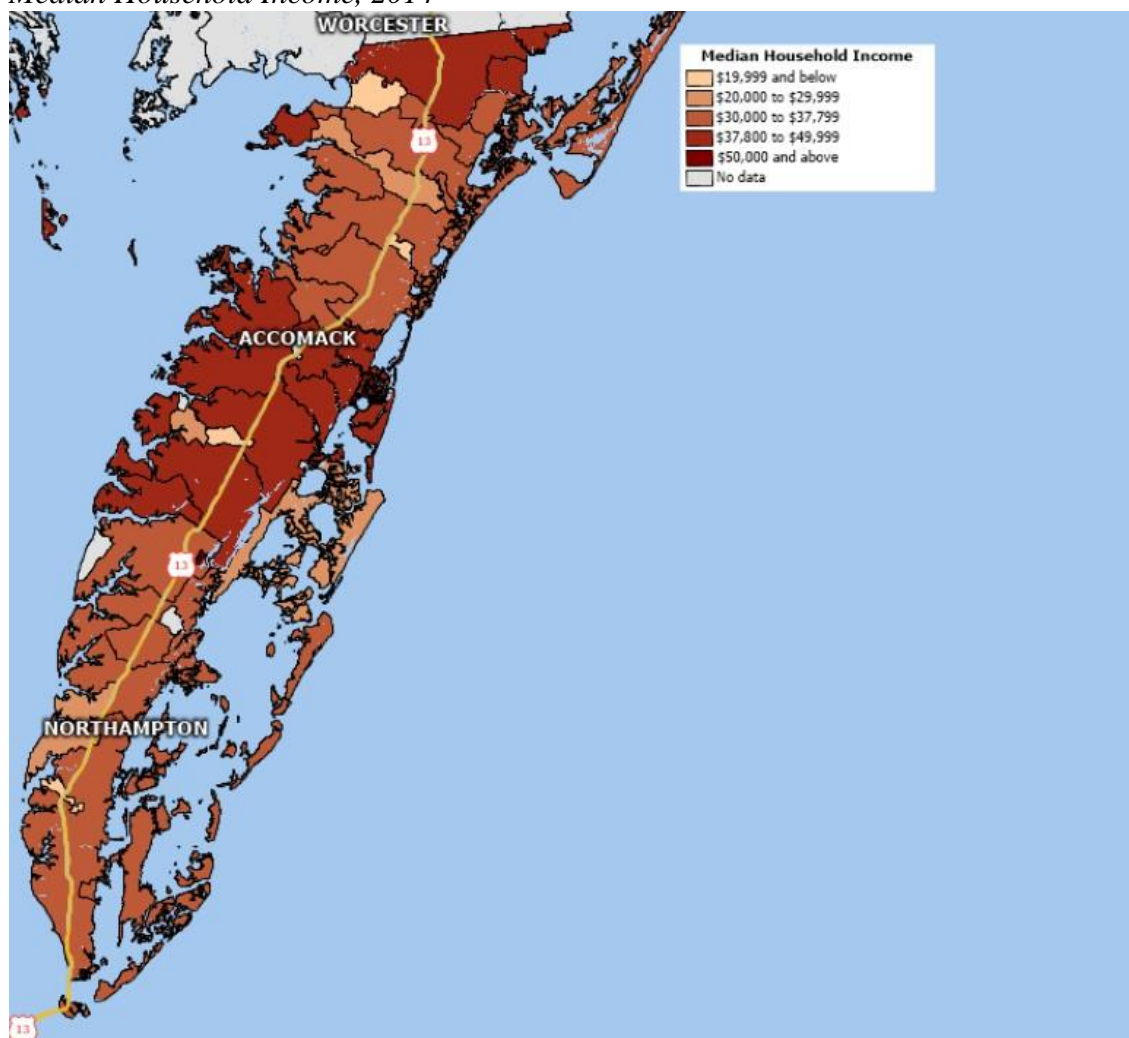
Source. Riverside 2016 CHNA.

Hispanic Ethnicity Population, 2014



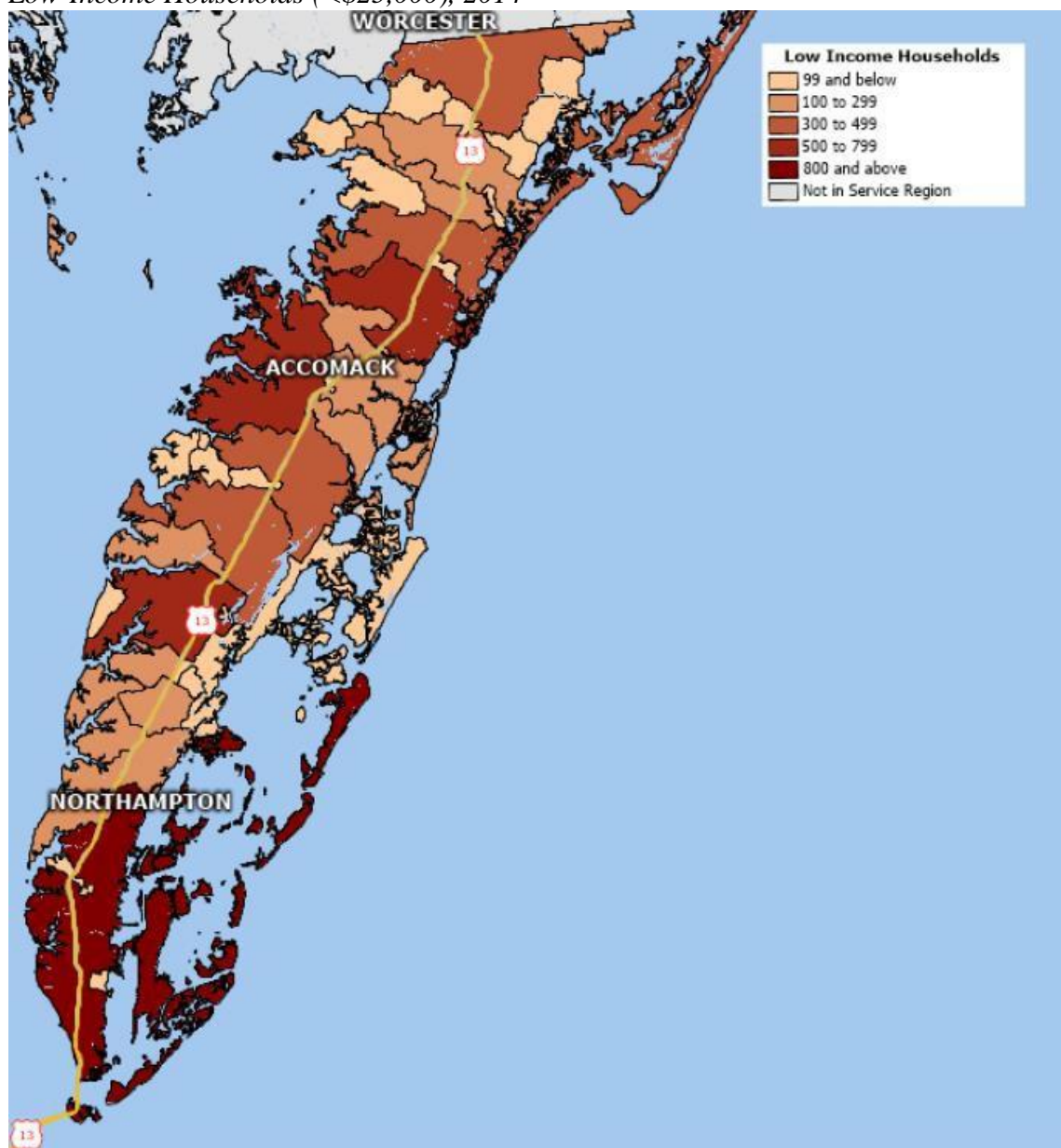
Source. Riverside 2016 CHNA.

Median Household Income, 2014



Source. Riverside 2016 CHNA.

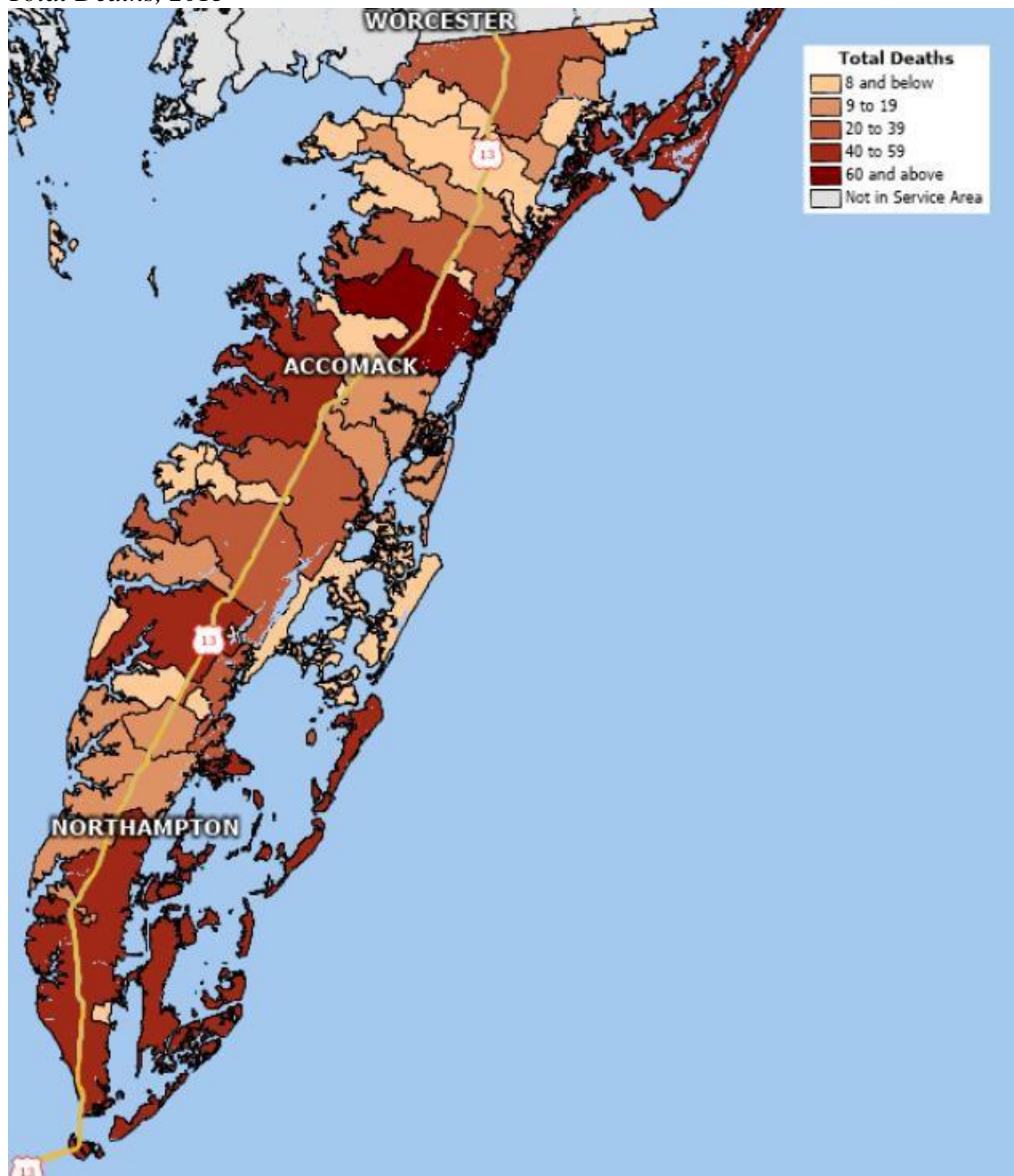
Low-Income Households (<\$25,000), 2014



Source. Riverside 2016 CHNA.

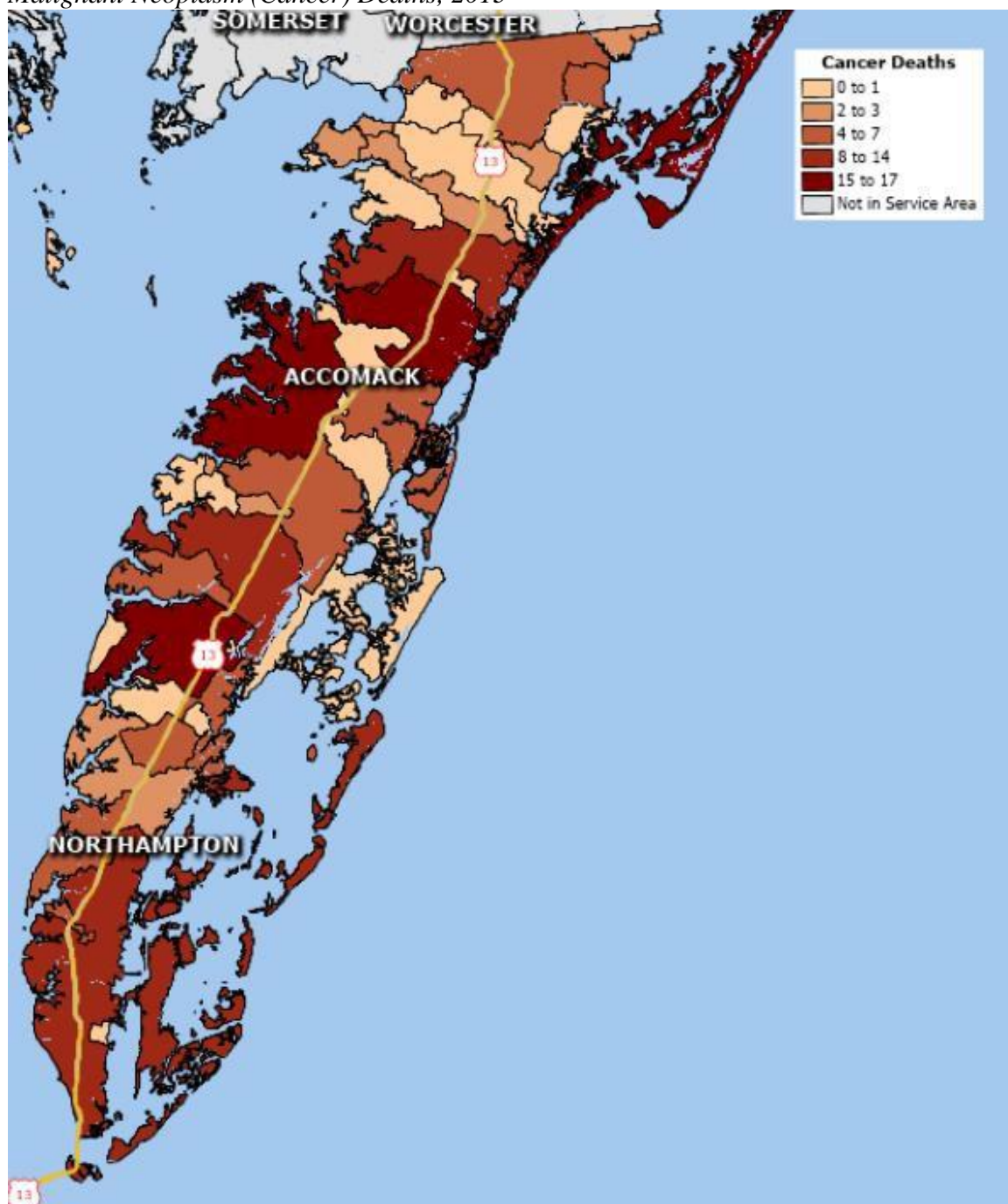
Appendix B: Mortality Maps

Total Deaths, 2013

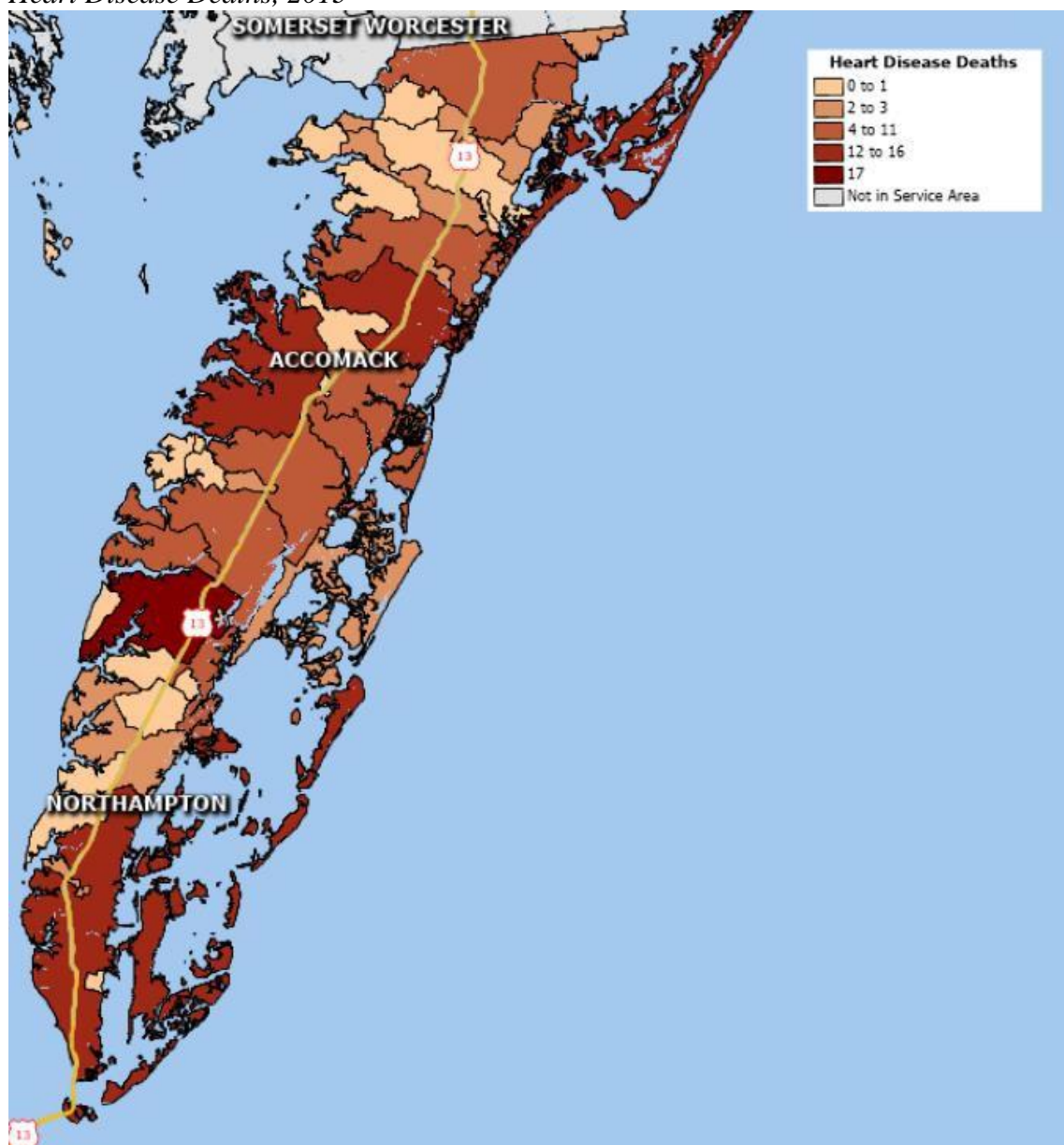


Source. Riverside 2016 CHNA.

Malignant Neoplasm (Cancer) Deaths, 2013

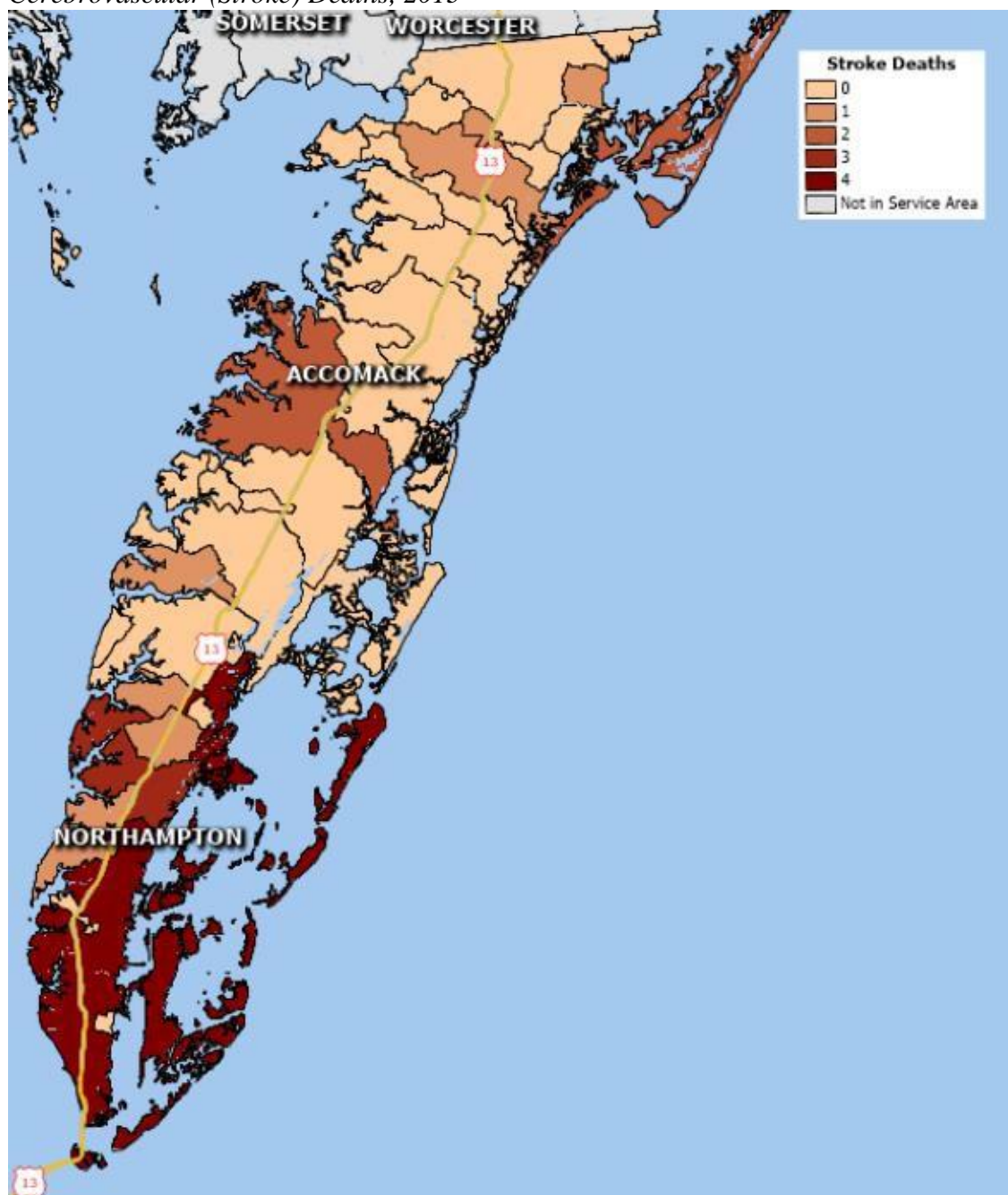


Source. Riverside 2016 CHNA.

Heart Disease Deaths, 2013

Source. Riverside 2016 CHNA.

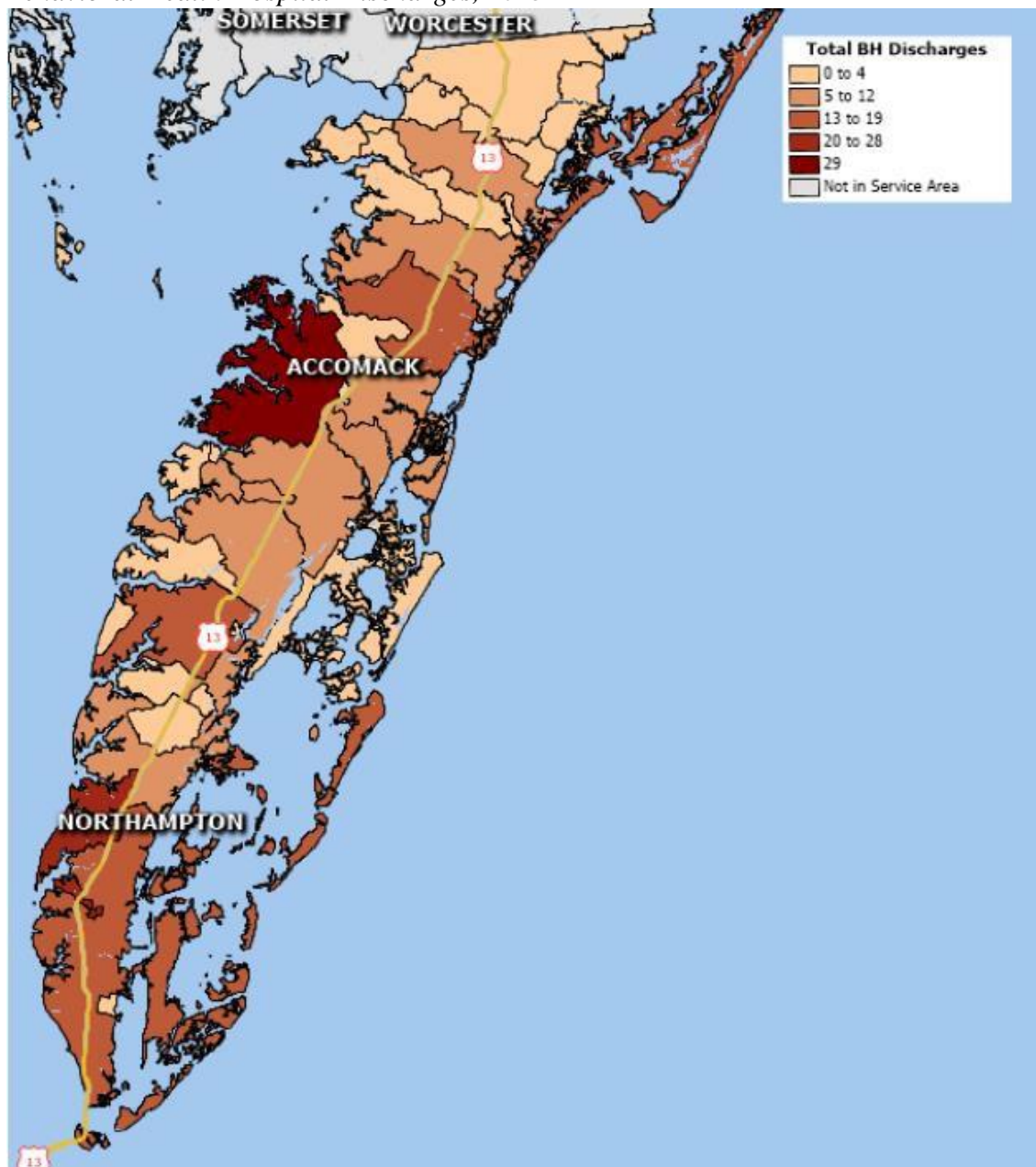
Cerebrovascular (Stroke) Deaths, 2013



Source. Riverside 2016 CHNA.

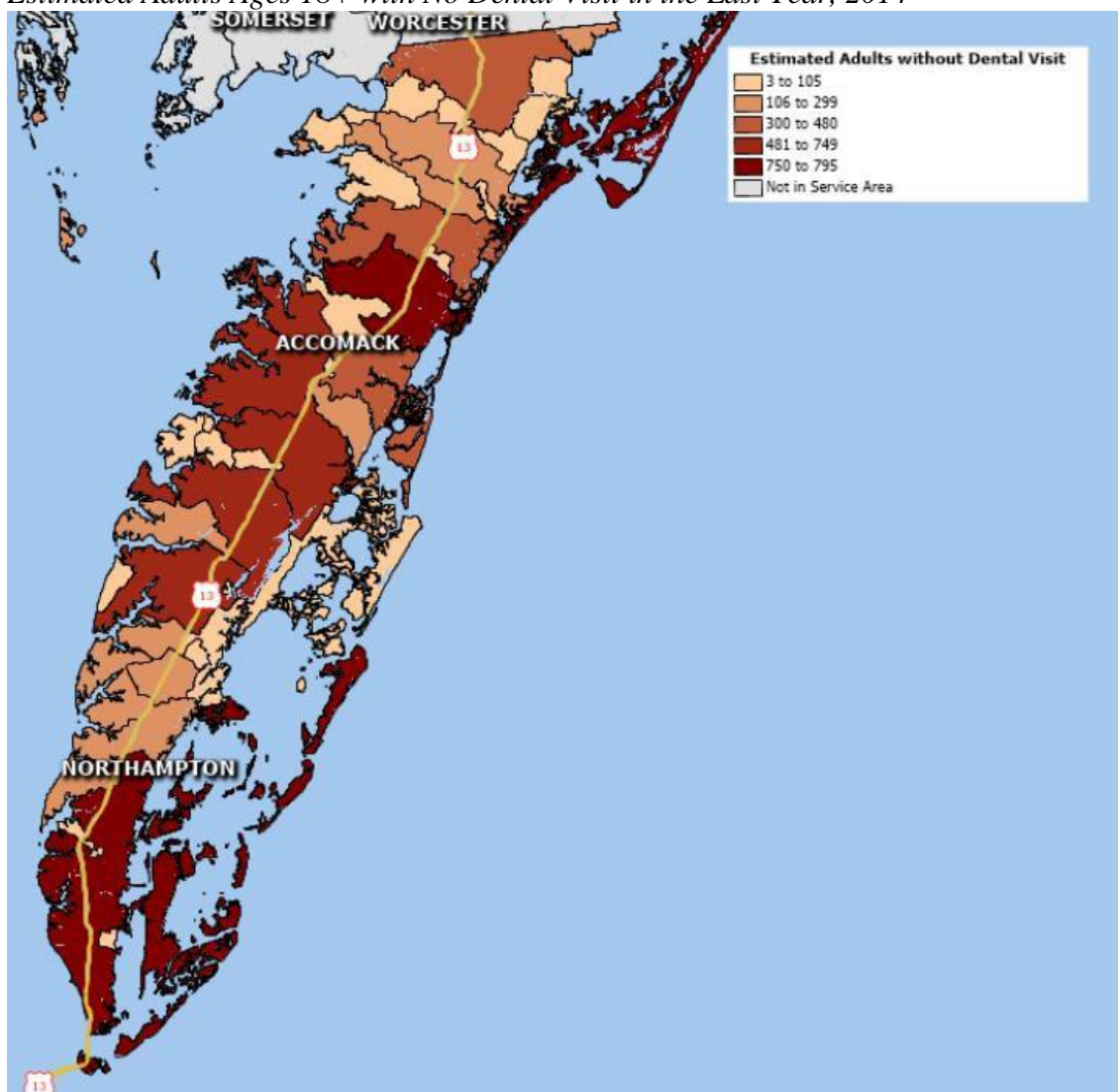
Appendix C: Health Behavior Maps

Behavioral Health Hospital Discharges, 2013



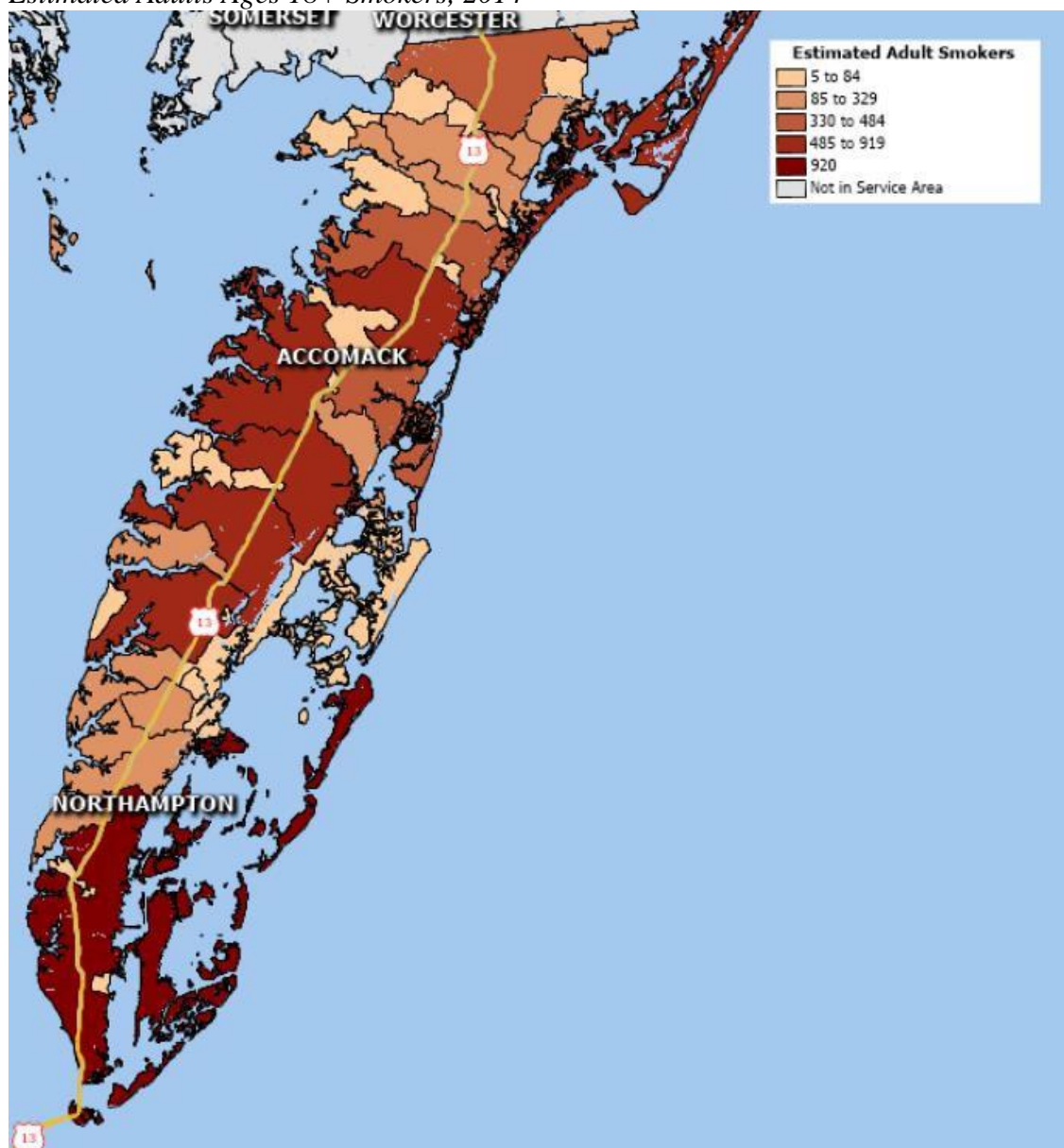
Source. Riverside 2016 CHNA.

Estimated Adults Ages 18+ with No Dental Visit in the Last Year, 2014



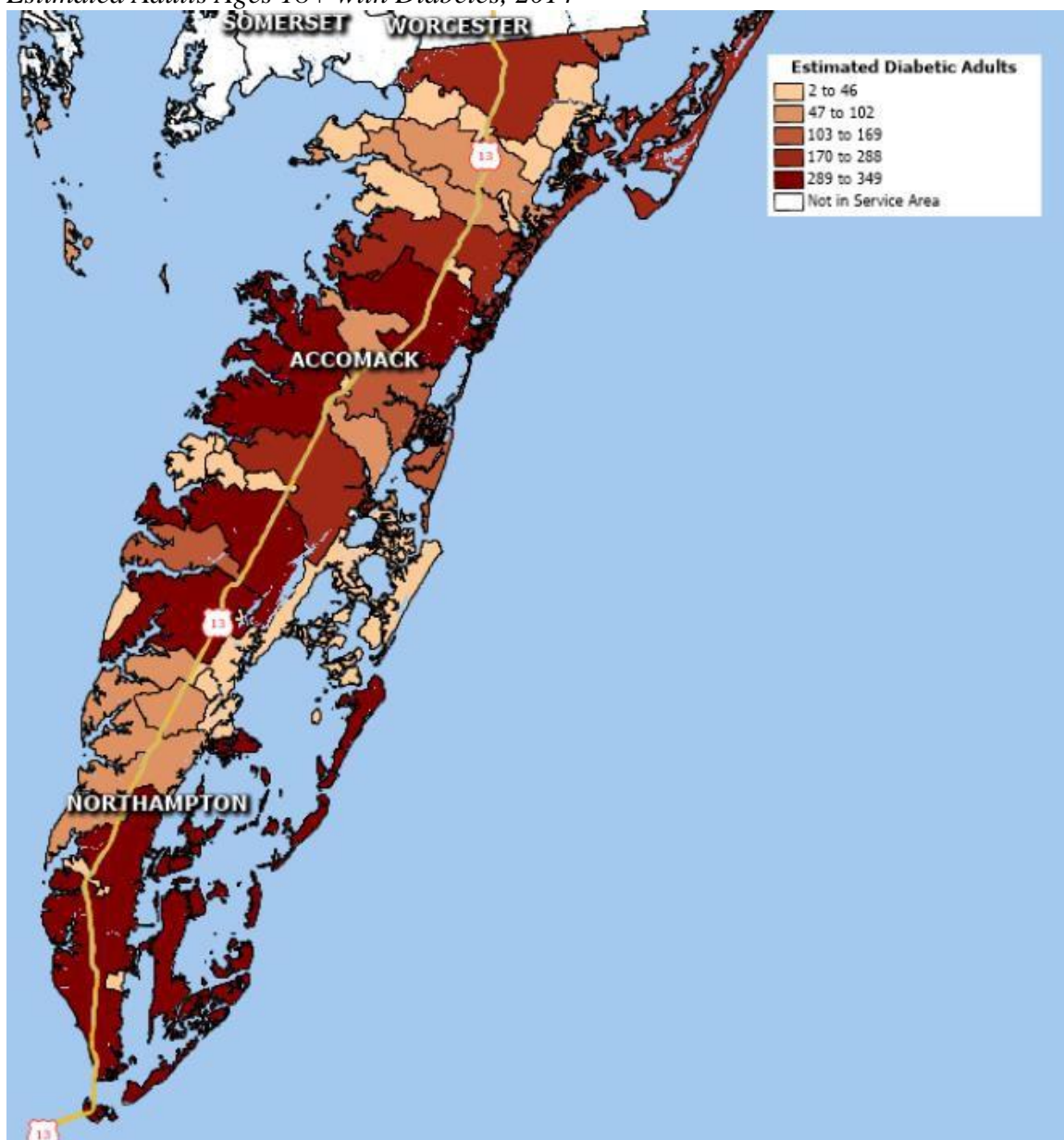
Source. Riverside 2016 CHNA.

Estimated Adults Ages 18+ Smokers, 2014



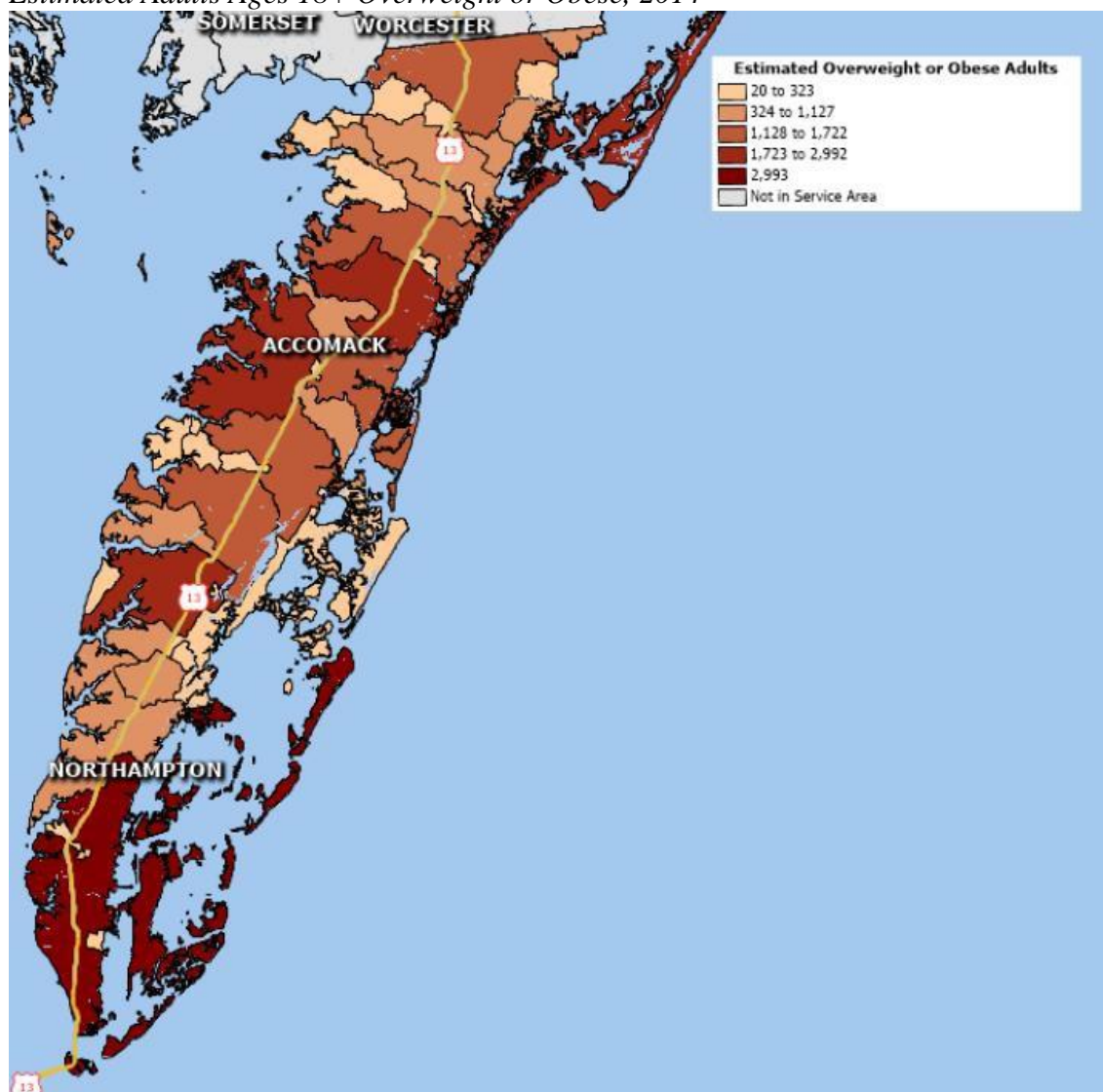
Source. Riverside 2016 CHNA.

Estimated Adults Ages 18+ with Diabetes, 2014



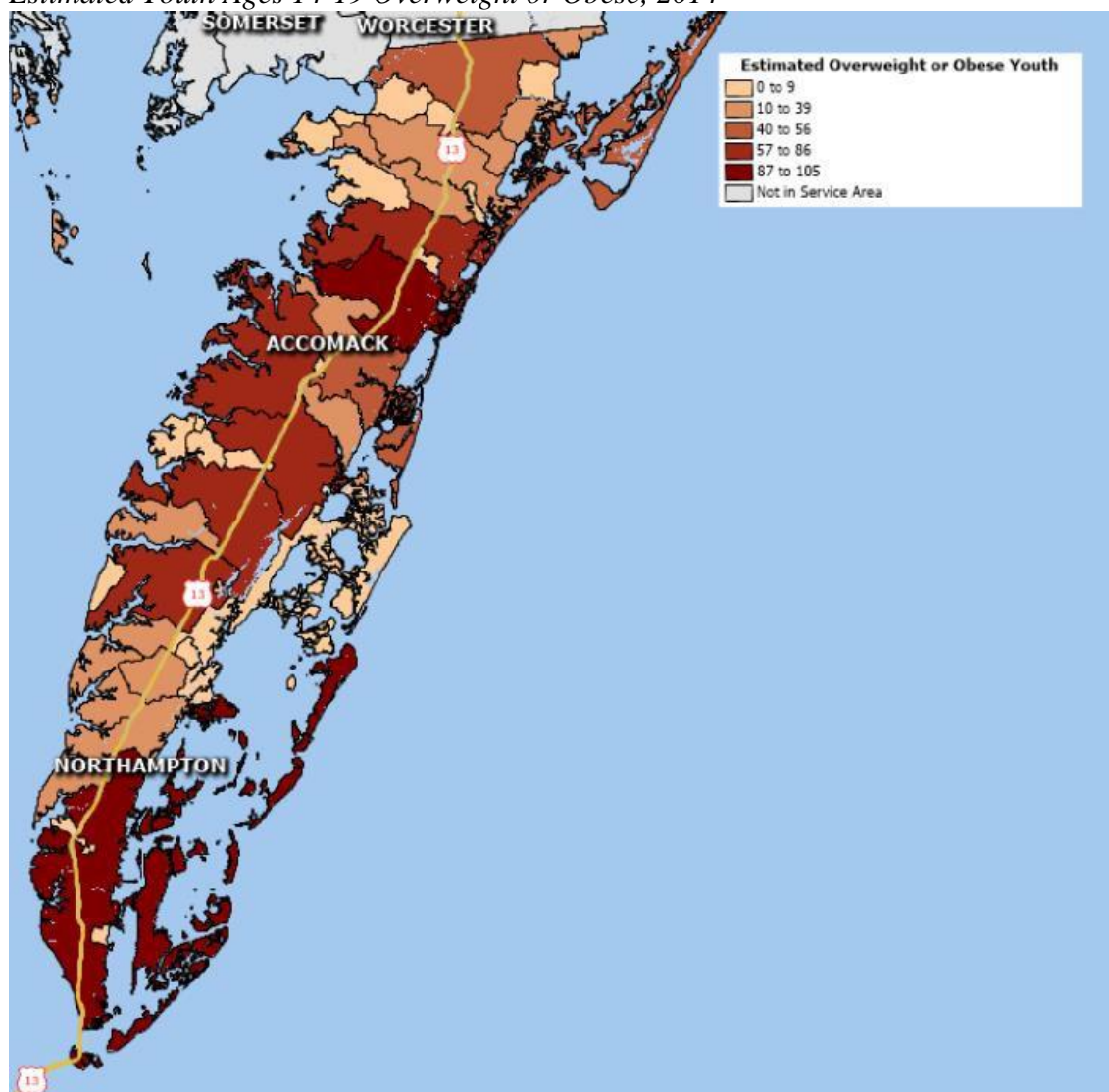
Source. Riverside 2016 CHNA.

Estimated Adults Ages 18+ Overweight or Obese, 2014



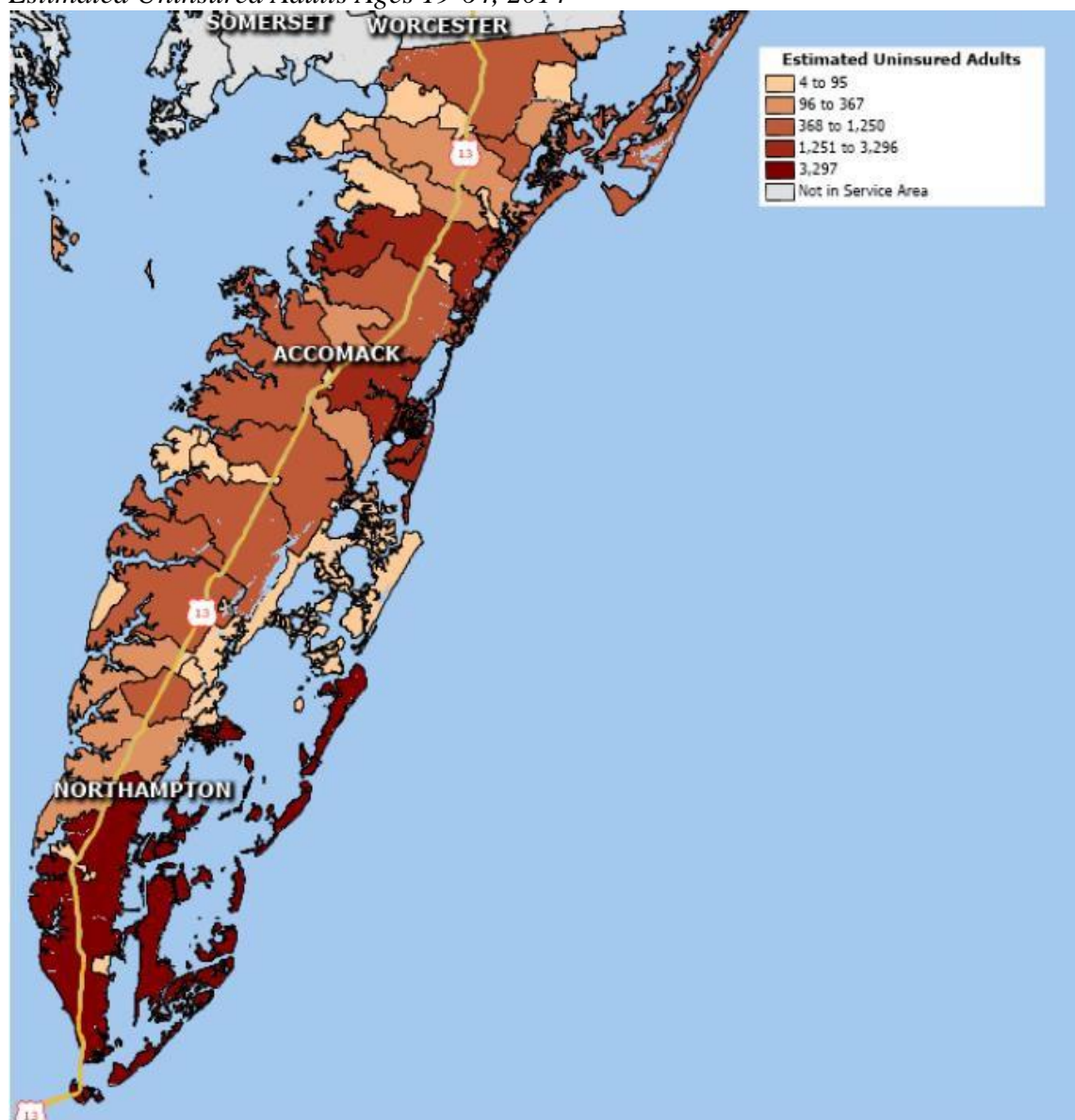
Source. Riverside 2016 CHNA.

Estimated Youth Ages 14-19 Overweight or Obese, 2014



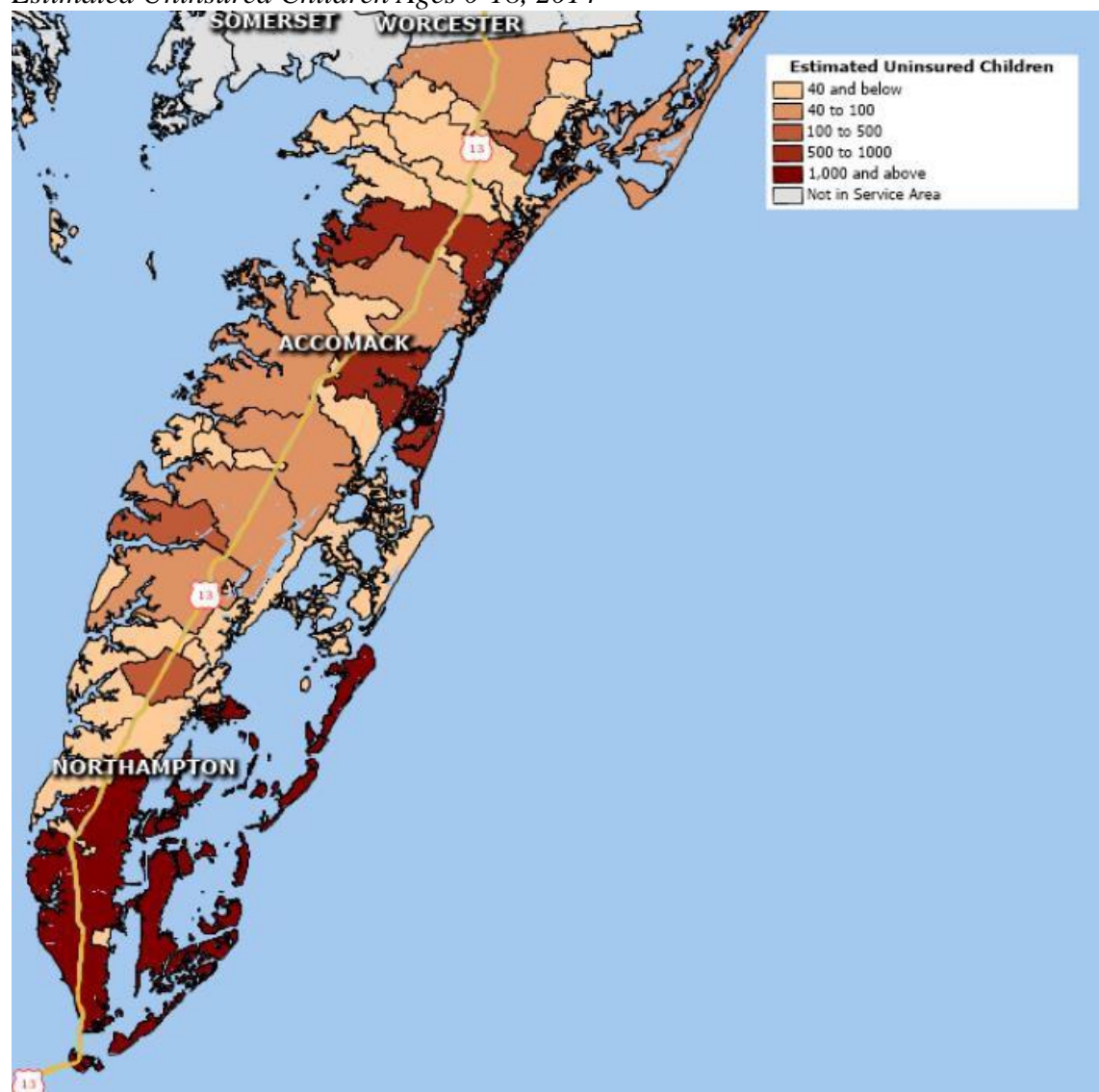
Source. Riverside 2016 CHNA.

Estimated Uninsured Adults Ages 19-64, 2014



Source. Riverside 2016 CHNA.

Estimated Uninsured Children Ages 0-18, 2014



Source. Riverside 2016 CHNA.